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RÉPUBLIQUE ALGÉRIENNE
DÉMOCRATIQUE ET POPULAIRE

United Nations Development Programme

Project title: AIM-WELL: Algeria Integrated Management of Waste Energy at the Local Level		
Country(ies): *Algeria*	**Implementing Partner (GEF Executing Entity):** *Ministry of Environment (ME)*	**Execution Modality***:* National Implementation Modality (NIM)
Contributing Outcome (UNDAF/CPD, RPD, GPD)*:* UNDAF: Outcome 1: By 2020, the productive sectors implement growth strategies to enhance economic diversification and capacity building for economic integration and job creation. CPD (2016-2020): Result 1: Growth and development is inclusive and sustainable, generating the necessary productive capacities to create jobs and livelihoods for the poor and marginalized communities. (Output 1: Sectoral strategies and implementation plans, particularly targeting the most vulnerable populations, are developed and implemented at local level and upgraded strategies are developed and adopted; Indicator 1.1: Number of new jobs and revenue generating activities in municipalities targeted; 1.1 Reference: 0; Target 1.1: 100)		
UNDP Social and Environmental Screening Category: *High*	**UNDP Gender Marker:** *2*	
Atlas Award ID: 00124003	**Atlas Project/Output ID:** 00119072	
UNDP-GEF PIMS ID number: 6163	**GEF Project ID number:** 10080	
LPAC meeting date: TBA		
Latest possible date to submit to GEF: 20-Dec-2020		
Latest possible CEO endorsement date: 20-Feb-2021		
Project duration in months: 60 months		
Planned start date: *1 September 2021*	**Planned end date:** *31 August 2026*	
Expected date of posting of Mid-Term Review to ERC: 29 February 2024	**Expected date of posting Terminal evaluation report to ERC:** 31 May 2026	

Brief project description:

In recent decades, the population of large Algerian cities has increased, mainly due to rapid urbanization. It is the biggest cities, especially the coastal ones, that welcomed most of the migrating rural population. Local authorities face the challenge of maintaining a better quality of public services in the context of the managing household waste because per capita waste production in some cities has increased to about 1 kg per day.

On the other hand, poultry production over the last ten years has experienced an average growth of 10.3% for white meat and 6.2% for eggs meant for consumption. Although poultry farming is practiced in 1,322 towns across the country, there is a concentration of poultry production in four wilayas namely Batna, Sétif and Bouira Medea. In these wilayas, socio-economic benefits are accompanied by serious environmental impacts and public health from an artisanal management of poultry waste.

The project aims to promote an integrated management of municipal solid waste in Constantine and poultry waste in Sétif with aim of transforming the waste value chain into a circular economy. The project will bring multiple economic (creation of new economic sub-sectors), social (creation of green jobs, public health risk reduction) and environmental (avoided carbon emissions, minimizing pollution of water bodies and ground water)

benefits. The model is based on private sector participation and transfer of technology for the recovery and transformation of waste that is financially viable, socially equitable and environmentally friendly. The sustainability of this model and project lessons learned will be a scaled at regional and national levels.

This will be achieved through the implementation of four components that will address the key barriers identified for integrated solid waste management in Algeria, specifically in Constantine: (1) Component 1: Reducing the volume of waste at source and transport distances to the landfill; (2) Component 2: Value creation through transformation of the organic fraction of municipal waste and poultry waste into fertilizer and energy; (3) Component 3: Promotion of the municipal model of integrated waste management at regional and national levels; (4) Component 4: Knowledge management and monitoring and evaluation.

At the end of the 5-year project, the cumulative avoided emissions will be about 357,279 tCO_{2e}. On an economic life of 15 years the total reduction of direct GHG emissions will be approximately 4,301,700 tCO_{2e}. This translates into a carbon abatement cost of 1 US$/$tCO_{2e}$. Indirect GHG emissions will be approximately 12.91 $MtCO_{2e}$.

(1) FINANCING PLAN	
GEF Trust Fund	USD 4,416,210
UNDP TRAC resources	USD 250,000
(1) Total Budget administered by UNDP	**USD 4,666,210**
(2) CONFIRMED CO-FINANCING	
Ministry of Environment (in-kind)	USD 6,666,667
Joint Venture / Private Sector (cash)	USD 33,333,333
(3) Total confirmed co-financing	**USD 40,000,000**
(4) Grand-Total Project Financing (1)+(2)	**USD 44,666,210**

SIGNATURES		
Signature: print name below	**Agreed by Government Development Coordination Authority**	**Date/Month/Year:**
Signature: print name below	**Agreed by Implementing Partner**	**Date/Month/Year:**
Signature: print name below	**Agreed by UNDP**	**Date/Month/Year:**

Key GEF Project Cycle Milestones:

Project document signature: within 25 days of GEF CEO endorsement
First disbursement date: within 40 days of GEF CEO endorsement
Inception workshop date: within 60 days of GEF CEO endorsement
Operational closure: within 3 months of posting of TE to UNDP ERC
Financial closure: within 6 months of operational closure

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LIST OF ACRONYMS

ACCP	African Clean Cities Platform
AND	National Waste Agency
ANCC	National Climate Change Agency
CO2	Carbon Dioxide
CO2e	Carbon Dioxide equivalent
CSO	Civil Society Organisation
DEW	Department of Environment of the Wilaya
DGRSDT	General Directorate foe Scientific Research and Technical Development
EPIC	Établissement public à caractère industriel et commercial (Public Industrial and Commercial Enterprise)
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FSP	Full Sized Project
FTE	Fulltime Equivalent
GAP	Gender Action Plan
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GHG	Greenhouse Gas
HSW	Household and Similar Waste
IANOR	Algerian Institute for Standardisation
ISWM	Integrated Solid Waste Management
ITCMI	Institut Technique des Cultures Maraîchères et Industrielles
JICA	Japan International Cooperation Agency
JV	Joint Venture
ktCO2	Kilo tonne carbon dioxide
LUCF	Land Use Change and Forestry
MADRP	Ministry of Agriculture, Rural Development and Fisheries
MAE	Ministry of Foreign Affairs
ME	Ministry of Environment
MI	Ministry of Industry
MICLAT	Ministry of Internal Affairs, Local Government and Land Use Planning
MRV	Measurement, reporting and verification
MSW	Municipal Solid Waste
MtCO2	Mega tonne carbon dioxide
NCE	Nature, Climate and Energy
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organisation
NPD	National Project Director
NPMHSW	National Program for the Management of Household and Similar Waste
PC	Project Coordinator
PIF	Project Identification Form

PIR	GEF Project Implementation Report
PM	Project Manager
PMA	People's Municipal Assembly
POPP	Programme and Operations Policies and Procedures
PPG	Project Preparation Grant
PPP	Public Private Partnership
PSC	Project Steering Committee
SDG	Sustainable Development Goals
SEP	Stakeholder Engagement Plan
SES	Social and Environment Safeguards
SESA	Strategic Environmental and Social Assessment
SESP	Social and Environmental Screening Procedure
SNGID	National Strategy for Integrated Waste Management
STAP	GEF Scientific Technical Advisory Panel
ToC	Theory of Change
ToR	Terms of Reference
TWG	Technical Working Group
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar

II. DEVELOPMENT CHALLENGE

1. In recent decades, the population of large Algerian cities has increased, mainly due to rapid urbanization. It is the biggest cities, especially the coastal ones that welcomed most of the migrating rural population. Local authorities face the challenge of maintaining a better quality of public services in the context of solid waste management. Table 1 lists the upward trend in the production of household and similar waste (HSW) in Algeria in 2035. The projected quantities of HSW produced between 2016 and 2035 considers that the same ratio is maintained in terms of type of waste generated and in terms of use.

Table 1. Generation of HSW in Algeria: 2016 - 2035

	2016	2035
Population (million)	39.6	54.5
Waste (million tonnes / year)	11.6	17.9
Waste per capita (kg / person / day)	0.8	0.9

Source: Ministry of Environment and Renewable Energies (2018a)

2. According to an inventory of waste management in Algeria[1], the waste products are mainly putrescible waste (54.4%). Of the non-putrescible portion (45.6% of the total production), 18% is plastic, 12.62% is textile, 9.75% is paper and cardboard, and 2.84% is metal. Between 35% and 40% of HSW are buried in sanitary landfills, and 55% to 60% are stocked in open dumps. The share of recycled waste accounts for less than 7% and composting for less than 1%.

3. As such, there are significant areas of concern, including health and public health problems and the pollution of rivers and groundwater and greenhouse gases emissions (GHG) generated by a non-performing waste management system. The second national communications to the UNFCCC (2010) indicates that the waste sector was responsible for 10% of GHG emissions in Algeria (excluding land use change and forestry), and in 2000, landfills, which accounted for 66% of GHG emissions from the waste sector, had emitted 7.542 million tCO_{2e}.

4. However, there are variations that exist at the local level in terms of the amount and types of waste. For example, the production of household and similar waste (HSW) in Constantine is above the national average. It was estimated at 1.07 kg / person / day (kg / per / d) in 2008 and is expected to reach 1.10 kg / per / day in 2019. In 2035, the solid waste production rates in Constantine will converge towards the national production rate (Table 2). Furthermore, the waste that is produced in some municipalities are associated with commercial or industrial activities. For four wilayas namely Batna, Sétif, Bouira and Medea it is poultry production, accounting for a quarter of the national poultry production. Poultry production over the past ten years has grown by a marked average of 10,3% for white meat and 6.2% for eggs meant for consumption. In value terms, poultry production is worth around 155 billion dinars per year in 2017.[2] In these wilayas, socio-economic benefits are accompanied by serious environmental and public health impacts from an artisanal management of poultry waste. And this is despite a legal framework that prohibits the handling and use of raw poultry wastes.

5. The management of HSW is made in the context of the National Program for the Management of Household and Similar Waste (NPMHSW). The implementation of NPMHSW is an extension of Law No. 01-19 and is the starting point and the framework of the new policy on HSW management. The three components of NPMHSW are: (a) the development of HSW management master plans; (B) the closure and rehabilitation of open dumps and (c) construction of sanitary landfills and acquisition of equipment. The majority of planning schemes are linked to the evaluation of current and real costs of waste management in a chain that leads to waste landfilling. Although the solution for integrated management of HSW is generally addressed, technical and economic studies on the opportunities for waste recovery and value addition through transformation, and on the infrastructure that needs to be put in place is lacking.[3] Consequently, HSW management in the 1,541 Algerian towns comes down to the implementation of the components (b) and (c) of NMPHSW.

6. Yet the market value of recyclable waste has been estimated at 23 billion dinars (USD 213 million). Only 7% of the potential market is tapped and part of which is exported. This represents a significant loss for the economy, especially because raw materials account for a large share of annual imports. The above data do not take into account the potential value of organic waste, either

[1] Ministère de l'environnement et des énergies renouvelables (2018a) Synthèse de l'état des lieux de la gestion des déchets en Algérie.
[2] https://www.elwatan.com/edition/actualite/filiere-avicole-la-production-en-viande-blanche-a-atteint-53-millions-de-quintaux-10-09-2018 - 20 november 2019.
[3] Idem pg. 21.

as raw material for the manufacture of fertilizers or as a resource of renewable energy. There are also foregone opportunities in creating green jobs and to reduce GHGs by setting up a circular economy focusing on the recovery and transformation of solid wastes. Table 2 summarizes the multiple benefits that will result from the implementation of a National Strategy and Action Plan for Integrated Waste Management 2035 (SNGID 2035).[4]

Table 2. Key performance indicators of SNGID 2035

Indicator	2016	2019	2022	2025	2028	2031	2035
Quantity HSW products kg / day / capita	0.79	0.85†	0.90	0.95	1.00	1.04	1.10
Recovery rate (household waste)	7%	8%	10%	14%	19%	23%	29%
Recovery rate (similar waste)	13%	13%	14%	22%	28%	34%	42%
Share of waste (excluding inert waste) buried in TL international standards	0%	0%	1%	24%	47%	70%	100%
Number of illegal dumps remaining to be closed and rehabilitated	1,300	880	340	0	0	0	0
Cost coverage (OPEX + CAPEX) by revenue for municipalities and public enterprises carrying out waste collection (EPIC)	N / A	5%	21%	55%	78%	96%	100%
Net number of jobs created in FTE (direct private and public sector, indirect and informal employment)	N / A	2,650	11,850	26,000	44,000	63,500	91,000
Net annual emissions from the waste management industry (MtCO2e)	22	25	26	21	14	7	-3

Source: Ministry of Environment and Renewable Energies (2018b)
Note: † SNGID mentions 0.56 kg / day / capita. This value was revised upwards by interpolation.

7. As discussed above, the financial evaluation of the recovery and transformation, and appraisal costs for managing HSW are generally absent despite the socioeconomic and environmental benefits. Nevertheless, it is important to note that financial management of solid waste in Algeria is almost completely subsidised by the government. A baseline analysis carried out in the process of formulating the SNGID has found that 95% of all costs related to waste management were born by the central government; 2.8% by international grants; 1.2% by regional development funds; and 0.5% by local governments.[5] As it were, waste management is a net contributor to government deficit. This state of financial unsustainability in solid waste management has been a factor strongly influencing the formulation of the SNGID.

8. The stress exerted by solid waste management on public finance needs to be analysed in the current context of the COVID-19 health and sanitary crisis and falling oil prices. Algeria is facing a combined shock from halving oil prices, a public health crisis and the consequences of global economic disruptions following the COVID-19 outbreak. An oil price at US$ 30/barrel in 2020 would decrease Algeria's total fiscal revenues by 21.2%. Despite cuts to public investment (-9.7%) and public consumption (-1.6%) envisaged by the 2020 Finance Law, the fiscal deficit would increase to 16.3% of GDP. Meanwhile, the sharp decline in export revenues (-51%) will lead the trade deficit to expand to 18.2% of GDP and the current account deficit to peak at 18.8% of GDP in 2020, despite efforts to contain imports and weak domestic demand.[6] Improving the financial management of solid waste through a circular economy and private sector investments can contribute towards better management of public finances and support post-COVID economic recovery. Conversely, continued reliance of the waste sector on public funding may lead to poorer waste management services delivered to the population because of a combination of cuts in public investment coupled with changing government priorities to address the health and sanitary COVID-19 crisis and to provide better social safety net to dampen the social impacts of the pandemic.

9. There are many obstacles and root causes to the sustainability of integrated waste management in Algeria. The major obstacles are listed in Table 3.

[4] Ministère de l'environnement et des énergies renouvelables (2018b) Etude sur la Stratégie Nationale et Plan d'Actions de la Gestion Intégrée et de la Valorisation des Déchets à l'Horizon 2035 : Mission 4 : les plans de mise en œuvre de la stratégie.
[5] Ministère de l'environnement et des énergies renouvelables (2018c) Etude sur la Stratégie Nationale et Plan d'Actions de la Gestion Intégrée et de la Valorisation des Déchets à l'Horizon 2035 : Mission 1 : Etat des lieux de la gestion des déchets en Algérie.
[6] https://www.worldbank.org/en/country/algeria/publication/economic-update-april-2020 - accessed 19 October 2020.

Table 3. Obstacles to the implementation of integrated management of HSW at the local level

Obstacle	Description
Technical weaknesses	• Lack of upstream sorting of waste (household level). • Large volumes of unsorted waste must be transported over long distances to solid waste disposal sites. • Lack of value associated with recyclable waste, resulting in a relatively low participation of SMEs; It is estimated that the saturation level of landfills is three times faster than it could be due to the low level of sorting and recycling of waste. • Insufficient means for the collection of municipal waste, due to the lack of integrated management plans to transform wastes, and the reduction of resources for their implementation. • A lack of technical expertise to optimize fertilizer production and to generate power through the transformation of organic waste.
Institutional weaknesses	• A lack of intersectoral waste management approach involving the relevant sectors at every level of the value creation process. • Lack of adequate policies triggering a sustainable and integrated waste management. • Inability of local authorities to manage municipal solid waste sustainably. • Need for greater involvement of the Ministry of Education and Ministry of Religious Affairs: the active participation of schools and mosques to raising awareness of the population to waste problems is considered essential to reduce the generation of waste and promote the sorting / recycling. • Lack of adequate funding.
Sociocultural barriers	• Lack of adequate information, with poor communication or inadequate support of the media. • The lack of effective communication and awareness leads to a lack of concern for sustainable waste management at the household level.

III. STRATEGY

10. The Theory of Change (ToC) diagram for the UNDP-GEF project in Annex SA1, illustrates the links between the challenges discussed in Section II and its causes. It also shows how project interventions at the level of three outcomes address the root causes of problems related to the development of a value chain for HSW in Algeria. The value chain will be supported by strengthening institutional and human capacity, and GEF investments in project activities that will remain weak links in the HSW value chain in the absence of the UNDP-GEF project. The detailed discussion of the results, outputs and the project activities in support of the operationalisation of the value chain for integrated management of HSW is provided in Section IV.

11. The ToC applied to this project addresses the key barriers to the integrated management of solid waste while contributing to the preferred solution (i.e. a circular economy which will result in GHG emission reductions) through the achievement of four components:
    - Component 1: The integrated management and minimization of solid waste
    - Component 2: Creating value through solid waste processing
    - Component 3: Replication at regional and national level
    - Component 4: Knowledge management and monitoring & evaluation

12. In the current context (Figure 1A) that serves as baseline, the management of HSW is made through a linear chain consisting of three steps including (i) waste production; (Ii) collection and transport; and (iii) disposal in managed landfills or open dumps. The main objective of the UNDP-GEF project aims to transform this linear chain into a circular chain (Figure 1B) with aims to transform HSW while reducing the amount of waste to be landfilled. The sorting of solid waste at source (mainly in the households) and the various means of transforming HSW are two additional steps in the new circular chain and are central to the paradigm shift that underpins the circular economy.

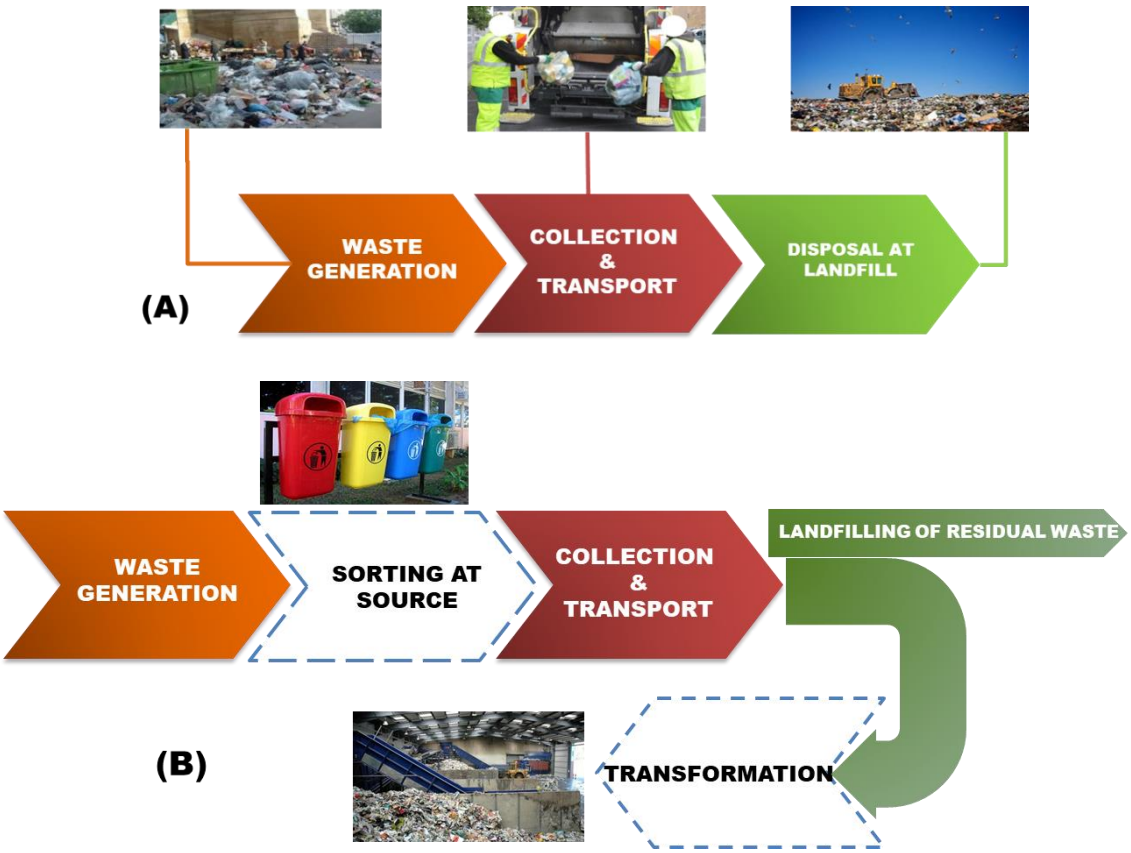


Figure 1. (A) Chain of current solid waste management; (B) Value chain of integrated solid waste management.
Source: Adapted from SOPTE

13. The benefits of a circular economy listed in Table 2 are related to the link 'transformation' in Figure 1 (B). A big part of GEF funding will be used to operationalize the various technology options to enhance the recovery and transformation of solid wastes. The diagram of an integrated management of HSW which comprises (i) the optimization of the waste collection; (ii) the complete sorting of waste; and (iii) three means to transform solid waste (the production of fertilizers, recycling and electricity production) is shown in Figure 2. The main levers to avoid GHG are also indicated in this diagram.

14. The ToC is supported by activities that will reduce or eliminate barriers under the assumptions considered in the project. If the barriers are eliminated in a satisfactory manner, the expected outcomes of the project will be acquired. These outcomes correspond to the four components of the project are:
    - Outcome 1: The progressive upstream sorting in the value chain by households (Constantine) / poultry breeders (Sétif) for better value addition through transformation of waste
    - Outcome 2: The management of value creation through the transformation of the organic fraction of solid waste into fertilizer and energy, and the selective recycling of the dry matter
    - Outcome 3: The model of integrated management of municipal waste is transposed to other cities
    - Outcome 4: Lessons learned are captured and disseminated widely.

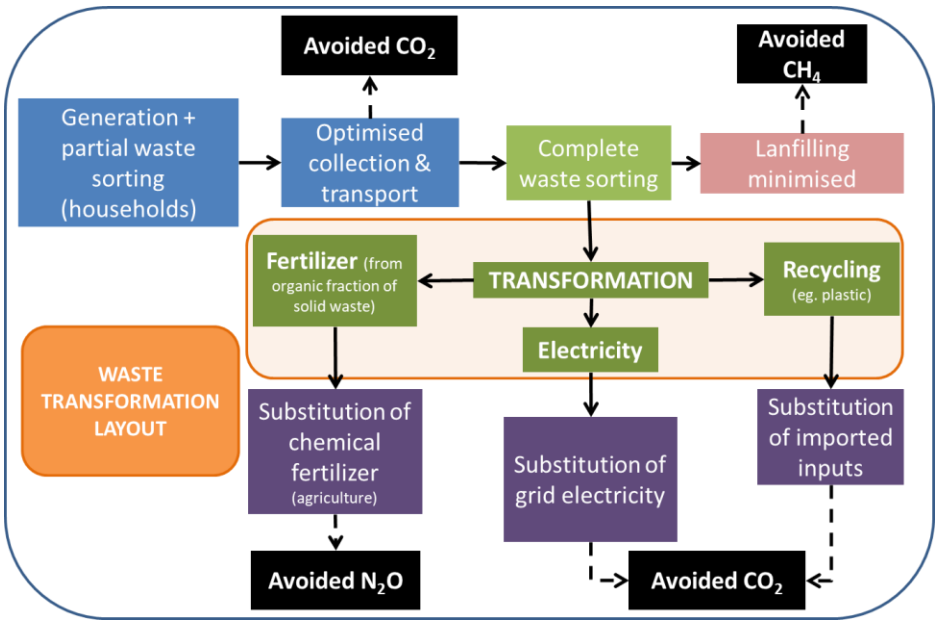


Figure 2. Solid waste recovery scheme

15. The project's long-term impact is to achieve reduction in greenhouse gas emissions and sustainable development benefits through the operation of an integrated solid waste value chain (Section IV). Long-term results of the project accrue from the elimination or reduction of barriers discussed in section II. Managing these barriers will reduce the risks of investing in a circular economy while improving municipal services and relieving pressure on public finances in solid waste management at local level.

16. Post-COVID economic recovery: The solid waste circular economy is expected to also provide an opportunity to support the post-COVID 19 economic recovery. As is further discussed below, the UNDP-GEF project will be a first-of-its-kind in Algeria from multiple perspectives, namely: (1) it will use private sector investments thereby liberating much needed public finances for more needful social investments (e.g. in the health and social security sectors); (2) improving the public deficit that is related to government subsidies for solid waste management that will provide more government flexibility to address the social and economic impacts of COVID-19; and (3) generation of direct and indirect green jobs in the circular solid waste economy. These are over-and-above enhancing the quality of service in municipal waste management, reducing negative local environmental and social impacts of inadequate solid waste management, and producing the global environmental benefit of reducing greenhouse gas emissions.

17. There are different levers of change and assumptions that are involved at various levels in the ToC. External levers are variables that are found outside the project perimeter. Even if they are not under the control of the project, they exert pressure in the right direction to support the project interventions. The main external factors that will have a positive influence on the logic of the project are: (1) the increasing demand for a better quality of service in municipal waste management; (2) a municipal fiscal deficit context that causes unsustainable pressure on public finances; and (3) a political commitment to reduce emissions through integrated solid waste and renewable energies in order to combat climate change.

18. Key project internal levers are: (1) a circular value chain for integrated management of solid waste is established; (2) demonstrate the financial viability of the circular economy; (3) waste processing technologies are appropriate to the local context; and (4) optimal coordination of market players is ensured. The internal levers are reflected in the activities proposed under the different outputs and results discussed in the next section.

19. Assumptions: The ToC contains a number of assumptions outlined in red boxes in Annex SA1. These assumptions are aligned with those identified in Annex I. In terms of project interventions, key assumptions are:
    - A political and institutional support received at all levels (national and public);
    - The willingness of the private sector to engage in the model of an integrated solid waste management;
    - Reliable and accurate data are available to demonstrate the multiple benefits of sustainable development of the project, as well as for monitoring and evaluation purposes;
    - Choosing appropriate waste processing technologies leads to a successful demonstration of the circular value chain;
    - Adequate participation of households in waste sorting at source;

- The potential resistance to change by threated actors in the baseline is overcome by creating win-win solutions especially concerning the public enterprise (EPIC) responsible for managing the sanitary landfill in Constantine; and
- The information and training needs of market participants are adequately met.

20. In terms of long-term results, the assumptions are:
    - Human capacity built by the project are maintained and put into application in the project's partner institutions;
    - The business climate and the macroeconomic framework are conducive for private investment in the circular economy;
    - The market mechanism is an appropriate way to increase the scale GHG emission reduction while providing co-benefits of sustainable development at local level;
    - Creation of green jobs through small and medium enterprises in the solid waste circular economy; and
    - The financial burden on public finances in municipalities represents a lever toward integrated solid waste management.

21. Assumptions concerning the intermediate milestones are:
    - Private investors are sufficiently stimulated by a framework to enhance investment in the circular economy;
    - Public-private partnerships set up to ensure win-win situations for all market players; and
    - The awareness is created among the players in the value chain to enable them to fulfil their roles and responsibilities.

22. Project Sites: Through its waste management arm, SOPTE, the parastatal of the Ministry of Industry (MI), Divindus, identified the neighbouring towns of Constantine and Sétif as candidates for the project of integrated waste management. The communes (wilayas) of Constantine (where the headquarters of SOPTE is found) and of Sétif are separated by 15 km. This will allow piloting the project in two different cities, each with its own characteristics (household waste in Constantine and poultry waste in Sétif); not only will this better inform the reproducibility of the process, but the additional volumes of waste will also provide better economies of scale in fertilizer production. SOPTE's participation in this project is essential because it not only leverages its existing capacity to collect, transport and to carry out waste disposal, but it can also create links upstream and downstream in other fields of competence of Divindus, namely manufacturing, engineering and construction. This will be particularly relevant to project replication and scaling up.



Figure 3. The project sites
Source: https://fr.maps-algeria.com/alg%C3%A9rie,-pays-la-carte

23. Multi-stakeholder engagement: One of the aspects of the project strategy is the adoption of an inclusive process of stakeholders' participation. This multi-stakeholder engagement that was used in the conceptualization of the project is expected to continue during its implementation and for monitoring and evaluation (M&E). The actors who intervene in the implementation phase are listed in Table 5 (Section IV). With a wide range of project stakeholders contributing to the outcomes of the project, project activities will not be implemented in a vacuum but, rather, in a context where there are complementary baseline initiatives with which synergies will be forged to deliver maximum benefits productively (efficiently and effectively) to beneficiaries (Annex G and Annex SA2). However, it should be noted that this innovative project will be implemented in a context where the recovery and transformation of solid waste remains very low (Section II). Optimal coordination of stakeholders will be ensured through an

inclusive stakeholder approach so that the assumptions and project internal levers remain valid all along the integrated solid waste value chain (Figure 1B, Figure 2). The commitment of all project stakeholders (Section IV and Annex G) at different geographical and political levels has been ensured through a rigorous stakeholder engagement process.

24. A transformative approach to gender: Another strategy is at the heart of this project is its transformative orientation to gender. This approach goes beyond targeted actions based on gender and gives a central place in the feminine gender in decision making. Project design has been guided by a set of guidelines that highlights the sensitive Action Plan for gender (Annex F) detailed in the next section. These guidelines are:

    - Gender transformation will be ensured through women's participation in the Project Board and Project Management Unit (PMU), and other levels of project governance;
    - To promote women's participation and decision-making by women, the project will integrate considerations of gender in the implementation of procedures that promote the empowerment of women through capacity building, participation in the planning and management of household waste and the promotion of women entrepreneurs in the integrated solid waste value chain;
    - The project will adopt the following principles in the day to day management: (i) gender stereotypes will not be perpetuated; (ii) women and other vulnerable groups will be actively and demonstrably included in project activities and management whenever possible, and (iii) derogatory language or behaviour will not be tolerated;
    - The Project Coordinator will be the designated focal point for gender issues to support development, implementation, monitoring and strategy on gender mainstreaming internally and externally. The PM will be supported by UNDP experts (Country Office and Regional Service Centre) on gender transformation issues; and
    - For regular monitoring and evaluation of the project progress and reporting, the project makes use of gender-disaggregated indicators (Section VI), and will facilitate involvement of women in the M&E and the implementation of Grievance Redress Mechanisms.

25. Knowledge management: Knowledge management is given priority in the project design and is captured as a stand-alone component (i.e. Component 4). Knowledge management is as a means to an end for the final objective of capturing and sharing lessons learned with a view to scaling up mitigation action in the solid waste management sector in Algeria. Consequently, Output 4 aims to capture and disseminate lessons learned and best practices in integrated solid waste management in Constantine and Sétif. It will also develop an investment plan accompanied by a replication strategy for scaling the integrated management of solid waste across 48 other cities (wilayas) in Algeria. Knowledge management will be used as adaptive management strategy of the project using best practices (Output 4.4). An adaptive approach is required on the assumption that the change of social behaviour and any innovative initiative vary in scope and are characterised by uncertain and changing requirements. This is where the monitoring and evaluation of the project's strengths and weaknesses become relevant. The project will promote South-South and triangular cooperation through knowledge management (Section IV). The development and application of the MRV mechanism for GHG emission reductions (Output 4.4) will be institutionalised by integrating the project MRV system within the broader MRV framework for carrying out national GHG inventories under the aegis of the Ministry of Environment and Renewable Energies. Under Output 2.3, the Algerian Institute for Standardization (IANOR) will be supported to develop national standards for fertilizers produced from the organic fractions of solid wastes. Further, the results of the project will be integrated into the curriculum of vocational and tertiary institutions (Output 3.1) that will have the responsibility to train technicians on innovative waste treatment technologies and the development of a circular economy centred on the solid waste value chain. The most effective communications and outreach strategy will be developed based on detailed gender-differentiated assessments of the information needs of target communities (Output 1.1). Besides applying standard procedures for monitoring (Output 4.2) and evaluation (Output 4.3), the project will also put in put place a SDG Impact Framework for measuring its impacts across all SDGs at the local level, and supporting country reporting.

IV. RESULTS AND PARTNERSHIPS

Expected Results*:*

26. **Expected results**: The proposed GEF-funded project is designed to address weaknesses identified in the baseline. It is targeted at the city (wilaya) level so as to cover all components of the solid waste value chain (Figure 1B, Figure 2) and to be easily replicated at national level in the NPMHSW. The project is based on three pillars:
    1. Reducing the volume of waste at source and transport distances to landfills (open dumps or sanitary landfills) by: sorting upstream waste at household level; strengthening municipal institutions and technical support; improving the status of the waste sector employees; waste collection and recycling network developed with micro- and small enterprises at the local level; and the planning and design of municipal waste sorting plant;
    2. Integration of biomechanical waste processing in order to separate the organic fraction; and
    3. Promoting the creation of economic value from waste by increasing recycling activities and the production of fertilizers and energy by transforming the organic fraction of solid waste.

    The three pillars to provide the proof-of-concept for developing a circular solid waste economy will combine to also support Algeria's post-COVID 19 economic recovery.

27. **Changes made to project design**: An adaptive approach has been used during PPG to redesign the proposed project. At PIF stage, the project had only three components, namely the first three on the list below. In order to be aligned with latest UNDP's guidelines, a fourth component on Knowledge management and Monitoring and evaluation has been added without making any changes to the first three components. Consequently, the project now has four main components:
    1. Reducing the volume of waste at source and transport distances to landfills;
    2. Value addition through transformation of the organic fraction of waste and reducing the amount of waste landfilled;
    3. Replicating the project at regional and national levels as a GHG emissions reduction model; and
    4. Knowledge management and monitoring & evaluation

28. Since July 2016, the Ministry of Environment and Renewable Energies has been promoting this pilot project to potential investors, particularly regarding the business model of waste to energy and production of fertilizers. This led to a partnership with Divindus, a parastatal company that serves the Ministry of Industry (MI). *Divindus*, exercising various industrial activities, has recently entered in the waste management sector through its subsidiary *SOPTE*; it is already active in the collection and disposal of waste, but it also mandated to participate in the waste sector at all levels, including value added activities through waste recovery and transformation.

29. In December 2016, MI announced its commitment to this project, including GHG emission reduction targets and its components related to the production of fertilizers and electricity. In April 2017, the MI followed with a financial commitment of about 9 billion Algerian Dinars (USD 81.77 million),[7] while the Ministry of Environment and Renewable Energies has also committed $ 4 billion Algerian dinars (USD 36.36 million). A memorandum of understanding was signed on April 18, 2018 between Divindus, the National Waste Agency (AND) and a consortium of three Canadian companies, namely: Global Green Links Inc., Sherbooke OEM Ltd and Lakson International Development Incorporated.

30. The UNDP-GEF project is novel (first-of-its-kind) in Algeria and its multifaceted nature makes it relatively complex, thereby making the GEF funding fundamental to its success. It should be noted that the first three components are divided into two parts: the technical assistance and investments. The only change in the document is the introduction of Component 4 on 'Knowledge management and monitoring and evaluation' as per UNDP requirements.

31. **Objective of the project**: The successful implementation of these three pillars will achieve the objective of the project to "*promote an integrated and comprehensive solid waste management by fostering technology deployment, dissemination, and transfer in collaboration with private sector*". The developmental objective of the UNDP-GEF project will squarely support the post-COVID recovery process by stimulating private investments in the solid waste sector and reducing municipal financing deficit, both of which will act in unison to liberate much needed public finances (amidst dwindling government expenditures) for improved health and social security services. In addition, establishing the solar waste circular economy will create new direct and indirect green job opportunities. When the project objective is achieved, the circular solid waste economy will also deliver both local and global environmental benefits.

[7] Using an exchange rate of 1 US$ = 110 DA prevailing at that time.

Component 1: Integrated management of household waste at source; minimization of final waste; and reduced transport distance

Outcome 1: Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif municipalities, so as to reduce the volume of landfilled waste.

32. This component aims to implement the sorting of upstream solid urban waste by households in the towns of Constantine and Sétif, with a collection mechanism for different types of waste (organic and dry waste) and a high-performance centralised sorting facility in Constantine. This upstream link will rest on a cross-sectoral strategy and a communication plan to sensitize households, to put in place incentive schemes, and to integrate solid waste management in school curriculum to sensitise students. In addition, this component will assist in the implementation of NPMHSW through support to eradicating open dumping practices, to organize the collection, the transportation and disposal of municipal solid waste under conditions that guarantee the protection of the environment and public health in the wilayas of Constantine and Sétif.

33. By focusing on the 3Rs - reduce, reuse, recycle, it aims to reduce GHGs at every stage of the waste management process in upstream sorting, recycling and transformation; only the remaining waste that cannot be used will be sent to the landfill. This will not only avoid methane emissions at the landfill, but also significantly reduce the total distance for transporting the waste to the landfill (Figure 2).

34. SOPTE brings major advantages to the implementation of outputs and the activities under Component 1. Its existing network capacity to collect, transport and dispose of waste is as follows:
    - Over 20 years of service in the municipality of Constantine;
    - A recently modernized fleet of 53 specialised trucks;
    - 540 people dedicated to the collection and transportation of waste;
    - Computerized organization with an information and database system since 2004;
    - A volume of household waste that exceeds the critical mass necessary for economic viability. This corresponds to about 257 tonnes per day, of which 90 tonnes are inorganic and 167 tonnes of organic waste. This does not include industrial and commercial waste;
    - Information Technology Infrastructure (ITI) to capture and manage the performance of waste collection in the various sectors of the municipality;
    - SOPTE is also active in other wilayas, including Algiers, Biskra, Tebessa, Oued Souf, and Ouargla Laghouat, which will facilitate replication and scaling up of the project;
    - Its long working relationship with the People's Municipal Assembly (PMA) Constantine and the Wilaya of Constantine, ensure that the state structures of the Ministry of Internal Affairs, Local Government and Land Use Planning (MICLAT) can be used to facilitate the project activities;
    - In collaboration with the Directorate of Environment of the Wilaya (DEW), it gained recent experience in the installation and maintenance of 225 open recycling bins that facilitate the sorting of organic and inorganic waste (recyclable); and
    - Experience in education and community awareness.

35. *Output 1.1: Source sorting of waste at household level is supported by education and awareness campaign*: The implementation of this output will be based on preliminary surveys carried out during the preparatory phase with one hundred households in the communes of Constantine and El Khroub (Annex SA3). The following activities will strengthen the advocacy and outreach carried out by the DEW of Constantine and those of civil society. In addition to avoiding potential contamination of organic waste by household hazardous wastes in order to ensure the quality of transformed products, upstream sorting will also reduce the cost of processing the raw materials. Upstream sorting reduces the occupational health and safety risks of waste handlers.
    - Act. 1.1.1: Detailing the surveys carried out during the preparatory phase: Detailing the household surveys will help to ascertain the willingness of households to practice waste sorting and participate in recycling, and also to better understand the barriers that they face. This activity will also provide inputs to implement the other activities planned under Output 1.1.
    - Act. 1.1.2: Identify the means of communication, develop appropriate outreach materials and raise awareness: The most appropriate means to communicate with households were identified in preliminary surveys (Annex SA3). These means of communication will be validated by the results of Act. 1.1.1, and outreach materials will be developed accordingly. Means and communications messages and materials will be gender sensitive.[8]

[8] The project will ensure the involvement of the Ministry of Religious Affairs (MRA) and the Ministry of National Education (MNE), schools, neighbourhood committees, associations, local media and radio, and to ensure the setting up of communication cells within the public enterprises (EPIC) responsible for the collection of waste and landfill management at the level of Wilayas.

- Act. 1.1.3 Identify and formulate incentive mechanisms: The motivators for sorting household waste are economic incentives, personal and social norms, and the encouragement of authorities. However, economic incentives alone can reduce the effectiveness of the other motivators and become a perverse incentive to produce more waste. Building on the achievements of past experiences of the DEW of Constantine, the project will focus on motivating waste segregation in households and communities through personal and social norms, and non-financial rewards. The best incentive mechanisms will be validated by the results of the Act. 1.1.1. This activity will benefit from sharing of lessons learned by the UNDP-GEF 'COMPOST' project in Ethiopia that is discussed below (under South-South Cooperation).

36. *Output 1.2: The municipal solid waste collection in Constantine and Sétif is designed, planned and implemented*. The upstream sorting and transformation of municipal solid waste will require a new plan for waste collection in the city of Constantine and Sétif.
    - Act. 1.2.1: Technical study for the design of a process of collection and transport of sorted household waste: Upstream sorting will require a new process of municipal solid waste collection in Constantine. Although there will be no sorting on poultry waste in Sétif, the transformation of this waste will also require a new process of collection and transport. The project will finance a socio-economic and technical study to define the optimised waste collection and transport processes in an integrated waste management value chain in the Wilaya of Constantine. The study will propose scenarios with a growing share of upstream sorting over time.
    - Act. 1.2.2: Implementation of the new process of waste collection and transport: The recommendations emanating from Act. 1.2.1 will be implemented, and the optimization of the new process will be ensured using an adaptive project management (Section III). This activity will offer sorting and collection solutions for household hazardous waste (HHW) (or special household waste) such as batteries, paint, detergents or chemical cleaners, among others.
    - Act. 1.2.3: Development of new Masterplans for HSW: The UNDP-GEF project will lead the development of new Masterplans for integrated management of HSW for the communes of Constantine and Sétif. The formulation of the Masterplans will draw on the results of other project activities. This activity will also promote South-South Cooperation (see paragraphs 60 and 61) through exchanges with the UNDP-GEF project entitled COMPOST Ethiopia and the adhesion of ME and the Wilayas of Sétif and Constantine to the African Clean Cities Platform (ACCP). These exchanges will enrich the ability of wilayas to better define their strategies and action plans for integrated solid waste management. In addition, these exchanges serve to bring innovative elements to the project activities.

37. *Output 1.3: A supply chain for poultry waste from nearby farms is established and operational*. A field survey (Annex SA4) was conducted during the preparatory phase of the project to map poultry waste producers, and to clearly identify the chain of collection and transport of this waste stream. This survey also served to clarify the conditions under which poultry farmers and especially collectors and transporters (also referred to as collector-transporters, since both functions are typically done by the same individuals) of poultry waste would want to participate in the UNDP-GEF project. The results of this survey have informed the following activities.
    - Act. 1.3.1 Identification and acquisition of land for the poultry waste transformation plant: As discussed above (Section II) and supported by a field study in Sétif (Annex SA4), poultry waste in its raw state is spread outdoors at Ksar El Abtal (and other sites) that causes serious detrimental environmental and public health impacts. The transformation of poultry waste into organic-based fertilizers will improve the quality of the environment and alleviate public health problems. However, the implementation of a supply chain of poultry waste for value addition will rest on the existence of a poultry waste processing plant. This activity will support the ongoing discussions between SOPTE and the Wilaya of Sétif to finalize the identification and acquisition of land in the town of Ksar El Abtal where the poultry waste processing plant will be established. Also, this activity will develop a site development plan detailing the specifications of poultry waste processing plant. As per Annex E and Annex I, the project will support identification of land for setting up the poultry waste transformation plant so that eviction is absolutely avoided.
    - Act. 1.3.2: Assessments of impacts and risks: The transformation plant will have the capacity to handle 600 tonnes of poultry waste daily (600 t/day). The Executive Decree No. 07-144 of 19 May 2007 provides for environmental impact and risk assessments for waste volumes above 10 t/day. The technical assistance of the project will support these assessments. These impact studies will also cover environmental and public health hazards in the vicinity of the town of Ksar El Abtal that will be avoided. It is pointed out that the open air waste storage areas at Ksar El Abtal operate without licenses from the competent authorities (Wali), and the public health hazards arising from the open-air storage of raw poultry waste may cause social unrests.

      In addition, the project will have social impacts downstream in the existing poultry waste chain; specifically among transporters of the dried poultry waste to agricultural areas in the south of the country. In this case, this activity will apply the Environmental and Social Management Framework (ESMF) that accompanies this project document (Annex H) to develop an Environmental and Social Management Plan (ESMP), including a rehabilitation plan for any job losses.

- Act. 1.3.3: Contract finalized with licensed collector-transporters: The processing plant will receive ~ 28% of the daily production of poultry waste generated in Sétif. The investigation of the preparatory phase has highlighted that collector-transporters were in favour of the proposed integrated solid waste management project on the condition that they did not suffer financial losses. The project will help identify the collector-transporters that are licensed with ME in order to establish long-term contracts for the supply of 600 tonnes of poultry waste daily.

38. *Output 1.4: The waste sorting centre is planned and designed*. The project will begin with a first phase of transforming 500 tonnes of municipal solid waste (MSW) per day, expandable to 750 tonnes / day towards the end of the 5-year lifetime of the project, and eventually to reach a capacity of 1,000 tonnes per day. The SOPTE has already acquired 10 hectares of land within the region of Ben Badis, which will serve, among others, to accommodate the waste sorting facility. The site is located in an industrial area and will also house the solid waste transformation plants (outputs 2.1 and 2.6).
    - Act. 1.4.1: Plan and design a waste sorting centre: Although the project proposes upstream sorting at the household level, it will be done on a pilot basis in four districts only. The bulk of MSW will still be mixed and requiring sorting prior to transformation into value-added products. For this, a centralized sorting centre will be constructed on the site already identified by SOPTE. A site development plan will be established to place the centralized sorting centre in relation to the solid waste transformation plants. The site development plan will consider the need to increase the waste flow over time.
    - Act. 1.4.2: Technical specifications for the sorting centre: The management plan will be accompanied by a technical specification sheet for the sorting centre. The technical specifications will be finalized with inputs from the Canadian partners constituting the PPP, and the means of incorporating women in the construction of the sorting centre will be proposed.
    - Act. 1.4.3: Assessments of impacts and risks: The construction and operation of the MSW sorting centre will be regulated by a number social and environmental legislations as described in the ESMF (Annex H). A study of environmental impacts was conducted in February 2019 but it is not up to the standards of UNDP's Social and Environmental Safeguards (SES). Also, it is noted that the project has been rated as high risk (Annex H). Technical assistance from the UNDP-GEF project will support an Environmental and Social Impact Assessment (ESIA), and the formulation of an ESMP. It should be noted that the PPP (or Joint Venture, JV) has already developed three rehabilitation scenarios with respect to job and financial losses that could affect the public enterprise (EPIC-CET) responsible for managing the sanitary landfill and transfer station in Constantine. The ESMP will build on these scenarios.

      An important element to highlight in the ESMF is to study the social and environmental impacts of the entire solid waste value chain, and not at the level of individual plants (e.g. waste sorting and transformation units). This means that even if the design and planning of the sorting centre and waste transformation are found under different outputs (output 1.4 and output 2.1, respectively) Activity 1.4.3 will be carried out jointly with Activity 2.1.3 in order to ensure that this global value chain perspective is maintained.

36. *Output 1.5: Eight waste collection points are operational*. Eight waste collection points are already installed in public spaces in Constantine since 2008, but they are still not operational. The operationalization of these collection points, each of which consists of two underground bins, can only be made once a harmonized solid waste value chain has been put in place. In the absence of this integrated system, the sorted waste will be mixed with the waste collected and transported to open dumps.
    - Act. 1.5.1: Awareness Campaign: An awareness campaign will be conducted to inform the public of the proper use of underground bins and collection points. The campaign will be accompanied by an appropriate collection of waste from these collection points to send the signal to the public concerning the new waste collection and transformation value chain. This activity will be implemented in conjunction with the campaigns promoted under Activity 1.1.2 on waste sorting by households.
      Act. 1.5.2: Waste collection scheme from underground bins is established: The awareness campaign will be accompanied by a measurement campaign to establish the quantities of solid waste that are generated at the eight waste collection points. This measurement campaign will be used to determine the waste collection frequency at these collection points. Regular monitoring will ensure the identification of seasonal trends in the volume of waste generated.

37. *Output 1.6: Acquisition of two electric vehicles for municipal waste collection*. The collection and transportation of household waste are ensured by diesel garbage collection trucks. This results in GHG emissions as shown in Figure 2. An incremental element of GEF investment will be the collection and transportation of household waste using two electric garbage trucks to reduce GHG emissions. These electric trucks will be used in two waste collection areas in the city of Daksi Abdesalem and the city of Zouaghi Slimane. The electric vehicles available on the market are mostly of European origin and are highly automated. The capacity ranges from 18 to 20 m^3 and a typical electric truck has a range of about 200 km for a battery capacity of about 200 kWh. Typically, the price of an electric garbage truck is double that of a conventional truck.

- Act. 1.6.1: Technical datasheet for electric trucks: The specifications of electric trucks will be made according to criteria that will be identified by the technical working group (TWG) for Component 1. A list of the most appropriate technological options in the context of Constantine will be produced and validated by the same TWG.
- Act. 1.6.2 Design of tender and procurement: A competitive and transparent tendering process will be developed for the purchase of the two electric trucks using the results of Act. 1.6.1. The tender document will include a clause on maintenance and supply of parts and batteries. Proposals received will be evaluated by a selection committee comprising members of the Project Steering Committee (PSC) and excluding working group members who have developed the data sheet at Act. 1.6.1. The two electric vehicles will be used in areas of the city and the city Daksi Abdesalem and Zouaghi Slimane, and will be operated and maintained by SOPTE.

38. *Output 1.7: A waste sorting centre capable of processing 750 tonnes per day of MSW is installed, equipped and operational*. This output is complementary to Output 1.4. The capital to invest in the centralized waste sorting plant will come from the joint venture (JV) comprising SOPTE, the National Waste Agency (AND), and Canadian partners. Technical assistance will be used for training selected SOPTE personnel for the operation and maintenance of the facility. Some members of the AND staff will also be introduced to the maintenance and operation of the processing units and waste recovery. This will not be for the purpose of assuring daily operations of these units but to ensure a minimum technical knowledge, which is deemed important for good operation of the PPP.
    - Act. 1.7.1 Construction of waste sorting centre: Centralized sorting unit of household waste will be constructed according to the site development plan for the industrial site and the specifications that will be developed under Output 1.4. The equipment specifications are as specified in the technical datasheet. The construction and operation of this unit will be made in line with the ESMP that will be developed under Activity 1.4.3.
    - Act. 1.7.2: Capacity Building to operate the sorting centre: The innovative character of the UNDP-GEF project implies that the technical expertise required for the proper operation and maintenance of the new sorting facility is not available in Algeria. The project will support the technical training of AND and SOPTE staff who will be responsible for the operation and maintenance of the waste sorting centre. Two options are identified: (1) study tours, and (2) on-the-job training programs from qualified trainers.

Component 2: Value creation through the transformation of solid waste and poultry waste into fertilizer and energy

Outcome 2: Managing value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste into fertilizer and renewable energy (2 MWe installed capacity), and the management of the recycling of the inorganic fraction of solid waste is planned and operational.

The fact of ensuring the regular production of a reliable alternative to chemical fertilizers at a competitive price is of paramount importance to the underlying business model of the PPP. One of the key aspects to achieving this is the introduction of poultry waste in the transformation process, which can be used to improve the levels of NPK in the organic-based fertilizer. The project plans to develop a network of suppliers to ensure a constant supply of poultry waste and to develop testing facilities supported by research and development in order to optimize the quality of the final product.

39. *Output 2.1: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed.* The household waste processing plant will be installed at the industrial site that will also house the waste sorting centre (Outputs 1.4 and 1.7). This plant will process about 60% of total waste collected into fertilizer and renewable energy.
- Act. 2.1.1: Site development plan of the waste transformation plant developed: The waste processing plant will be installed adjacent to the centralized solid waste sorting centre (Output 1.7). The development plan for the industrial site will be established to locate the solid waste transformation plant relative to the centralized sorting centre. The site plan will also consider the need to increase the throughput of solid waste over time as discussed in Output 1.4. It is planned that poultry wastes collected around the Wilaya of Constantine will be transformed into fertilizers at the Constantine processing unit. This unit will not receive any poultry waste from Sétif.
- Act. 2.1.2: Technical datasheet of the plant: The site development plan will be accompanied by a technical data sheet for the waste processing plant. This technical factsheet will be prepared with inputs from the Canadian partners in the PPP, and it will also propose means of incorporating women in the construction of plant.
- Act. 2.1.3: Assessments of impacts and risks: This activity will be carried out jointly with Activity 1.4.3 in order to retain an overview of the entire solid waste value chain. The GEF-UNDP project will support the upgrading of the environmental impact assessment that was carried out in February 2019 through a detailed ESIA and formulation of a corresponding ESMP. This study and the action plan will be implemented as planned in the ESMF (Annex H).

40. *Output 2.2: Capacity building for analysis and monitoring of the quality of outputs from transformation plant is planned and designed.* A centre for laboratory analysis and research and development, whose main purpose will be to monitor and optimize

the quality of fertilizer and combustible material produced by the waste processing plant will be designed and operational. The centre will work in partnership with the General Directorate for Scientific Research and Technical Development (DGRSDT).

- Act. 2.2.1: Identifying equipment needs: A preliminary list of equipment[9] that will be needed to analyze the quality of fertilizers and ensure agricultural productivity was identified during the preparatory phase of the project. This list will be finalized and endorsed by the TWG for Component 2 at the beginning of the project implementation. The specifications of each equipment will also be developed and validated.
- Act. 2.2.2: Training needs gap analysis: Preliminary analysis of training needs was made during the preparatory phase of the project. This analysis will be expanded in tune with the Act. 2.2.1, and the project technical support will ensure that the gaps in expertise to operate the new equipment and the adoption of new laboratory protocols are bridged (Act. 2.7.2). The gap analysis will have a specific focus on gender balance and propose measures to bridge any gender gaps.

41. *Output 2.3: A legal and regulatory framework for the standardization of organic fertilizer is developed and implemented*. Formulation of policies and regulatory framework for the standardization of NPK-enriched fertilizers produced from the organic fraction of MSW and poultry waste.
    - Act. 2.3.1 Standards for fertilizer developed and validated: The establishment of a standard for fertilizer requires the development of (1) a standard for the specification of the product; and (2) an evaluation standard for product conformity.[10] These standards will be developed by the Algerian Institute for Standardization (IANOR) through the following steps: (i) activating the National Technical Committee 31 (or 31 NTC) whose title is "Fertilizer" [11] (Ii) training members of this Committee, (iii) providing all normative documentations to members of the Committee, (iv) adoption of the standard by the Technical Committee, (v) national and international public consultations through the IANOR website (2 months), (vii) responses to any comments and suggestions emanating from the public consultation process, and (viii) validation of the standard by IANOR.
    - Act. 2.3.2: Regulations for Technical Conformity: After having developed the Standard of fertilizers (Act. 2.3.1), the Ministry of Industry (MI) will initiate the procedure for developing the regulations for ensuring the technical conformity of fertilizers that will be produced from the organic fractions of solid wastes.[12]
    - Act. 2.3.3 Fertilizer homologation by the Ministry of Agriculture, Rural Development and Fisheries: The project will ensure that the quality of fertilizers will be according to the Standards developed under Act. 2.3.1. Once the quality of the fertilizer has been established, testing their biological efficiencies will be carried out to certify the fertilizers in terms of their agricultural performance. The tests will encompass all aspects and parameters which determine the contribution of fertilizer such as soil type, dosages of fertilizer, impact on yield, and impact on soil quality, among others. The Institut Technique des Cultures Maraîchères et Industrielles (ITCMI) will carry out these field tests.[13] As most of the poultry wastes in the baseline are used in the cultivation of potatoes in the south of the country, fertilizers from poultry waste will be tested in these same areas. The homologation process will culminate in a protocol for the use of the fertilizers according to agro-ecological conditions.

42. *Output 2.4: An enabling environment for the recycling companies is established, including the introduction of financial mechanisms and incentives for communities and individual participants involved.* The National Waste Agency (AND) has a register of licensed operators, which are active in the MSW sector. But there are still informal operators operating without authorization. This makes it difficult to have accurate statistics on the volume of waste that is recycled. Without a register or a complete inventory, regulation of the sector remains difficult. For example, adequate working conditions of informal operators cannot be guaranteed. With an inclusive and equitable development approach, the project will help the AND to update its register of coded activities in the solid waste sector, and to develop incentive mechanisms for involving recycling companies in the integrated solid waste management value chain.

[9] For example: flame spectrophotometer, auto analyzer for accurate analysis of organic carbon, atomic absorption spectrophotometer and lamps (trace elements).

[10] The list of Algerian Standards (NA) adopted in TNC 31 relating to "fertilizers" is given in Annex SA5.

[11] In addition to the experts, the CTN is made up of several representatives of the Ministries, including the Ministry of Agriculture, Rural Development and Fisheries (MADRP), ME, the Ministry of Industry and Mines, the Ministry of Agriculture and Rural Development. Commerce, the Ministry of Health, etc.

[12] The process consists of three steps: (i) take advice from the relevant economic sectors; (ii) establish the consistency of the data sheet and legal text; and (iii) the law signed by at least two ministers is tabled in Cabinet for approval.

[13] The Institute works nationally and can operate in different parts of the country in the North, East, West and South. In areas where it does not have experimental stations, it can call on its farmer partners to have small plots for agronomic trials. For laboratory analysis, the Institute uses the National Institute of Soils, Irrigation and Drainage (NISID) with which they are used to collaborate. For possible plant diseases, they call on the National Institute of Plant Protection (INPV). For the conduct of agronomic tests, the Institute does not require support from the GEF-UNDP project.

- Act. 2.4.1: Census of informal operators: The UNDP-GEF project will develop and validate a methodology to identify informal operators in Constantine. Once validated, this methodology will be used by the AND, in collaboration with the Ministry of Commerce, to update the register of commercial operators in the recycling industry. Companies thus identified will be invited to participate in the project through Act. 2.4.2.
- Act. 2.4.2: Incentive mechanisms for businesses, communities and individuals: A strategic orientation of the UNDP-GEF project is its contribution to equitable and inclusive socioeconomic development. To protect the financial interests of existing operators who have been identified in Act. 2.4.1, they will be invited to develop long-term contracts with the project. This will ensure these companies of long term revenues through the sale of recovered dry materials from the sorting process for recycling. The first financial incentive for operators is therefore in the form of contractually-secured, long-term revenues. Another incentive for that will ensure the financial sustainability of recyclers is the possibility to recover dry waste, such as plastic, glass, metal, electronic waste, paper and carton for recycling from the centralised waste sorting facility (Output 1.7). Table 1 in Annex J shows the percentage amount of different types of waste that will be transformed by the UNDP-GEF project. In both phases, dry wastes (except for plastic that will have a surplus to recycling market only in the first phase of the project) will be diverted to the market for recycling. This design is part of the inclusive approach of the UNDP-GEF project to share benefits with the wider community of market operators that will be able to develop (where they do not exist like for e-waste) and sustain recycling markets for the dry wastes through secured provisioning by the project. The project design will therefore support the financial sustainability of the recycling industry in Constantine. Communities and individuals will be encouraged to deliver all recyclable materials directly to the industrial centre of SOPTE against financial remuneration. The categorization of communities and individuals will be made by the AND to differentiate them from private companies.

43. *Output 2.5: Explore the possibilities of developing a waste management project for the voluntary carbon market*. A national voluntary carbon market will be designed and operationalized in order to support country preparedness for subsequent implementation of market mechanisms under Article 6.4 of the Paris Agreement. Although modalities of the market-based mechanisms have not yet been finalised under the Paris Agreement, it can be expected that the procedures will capitalize on experiences from mechanisms under the Kyoto Protocol.[14] Since Algeria does not have much experience with carbon markets, Output 2.5 will be used to support local actors to become familiar with the operation of the carbon market. In effect, the pilot will support the ratcheting up process under Article 6 of the Paris Agreement.[15] Once operational, the market mechanism will be available to buyers of public and private institutions, individuals and NGOs to voluntarily offset their GHG emissions. Collaboration with the UNDP-GEF project "Ethiopian NAMA: Creating Opportunities for Municipalities to Produce and operationalized Solid Waste Processing (COMPOST)" will be assured by the UNDP to capitalize on the achievements of this GEF6 project, which started its implementation in 2017. The COMPOST project has already taken steps to develop a voluntary carbon market. The proposed market mechanism will make use of the enhanced transparency framework and MRV system that will developed under Output 4.4.
    - Act. 2.5.1: Design and operationalization of a voluntary carbon market: Standardized methodologies (Act. 4.4.1) will be used to register the emission reductions accruing from the project in a "Registry" that will be hosted by ME. Emission reductions will be verified by an external auditor to provide more credibility and transparency to the market mechanism, which will give the 'buyers' confidence to engage in the carbon market. A "Project account" will be set up at MI[16] to receive income from the sale of carbon credit to "buyers" and will be managed with the technical support of the UNDP Country Office. Once a "buyer" has transferred funds to the "Project account" after purchasing carbon certificates, the certificates will be retired from the 'Register'. This step will prevent double counting of carbon credits. In order to support the financial viability of the GHG emission reduction activities of the project, revenue from the sales of carbon credits will be used in its scaling up. Protocols and guidelines for the operation of the carbon market will be developed. The institutional capacities of the actors listed in Figure 4 for proper operation of the carbon market will be strengthened.

[14] L. Schneider et al. (2016) Market Mechanisms in the Paris Agreement – Differences and Commonalities with Kyoto Mechanisms: Discussion Paper, German Emissions Trading Authority, Berlin, Germany.

[15] Asian Development Bank (2018) Article 6 of the Paris Agreement: Piloting for enhance readiness, ADB, Metro Manila, Philippines.

[16] In the organizational scheme proposed in Figure 4, two separate public institutions have been chosen to ensure good governance of the carbon market, including the independence of the institutions holding the 'carbon certificate register' or 'project account'. ME has been chosen as the holder of the 'register' because it is the focal point for climate change in Algeria. In addition, ME will be involved in setting up the measurement, verification and reporting mechanisms to track emission reductions from integrated solid waste management, which will be converted to carbon certificates. The fact that SOPTE is the majority shareholder in the JV and that it is under the aegis of MI, the latter was chosen as holder of the 'project account' to receive the profits from the sale of carbon credits. It is also the case that the Nationally Determined Contribution (NDC) is planning a national pilot project for the recovery of household and similar waste with low greenhouse gas emissions by the MI. The proposed scheme is on a pilot-basis and the institutional structure will be evaluated during the mid-term and final evaluations when improvements could be brought in.

A voluntary market mechanism is in the process of being set up under the project 'COMPOST (PIMS 5541)' funded by GEF and implemented by UNDP in Ethiopia. Links have already been established between the UNDP Country Offices in Ethiopia and Algeria for knowledge sharing (South-South Cooperation) in the design and operationalization of such a market.

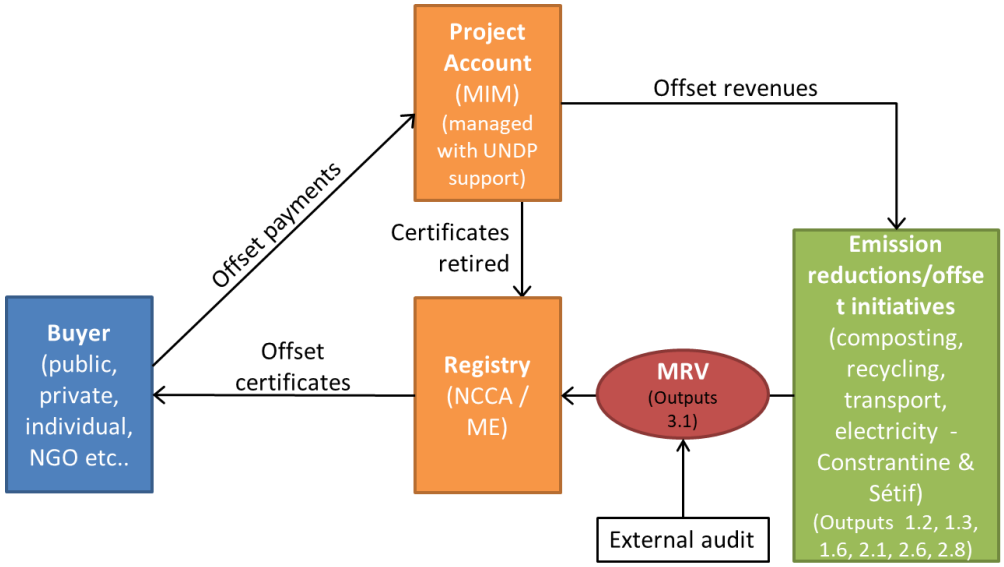


Figure 4: Voluntary Carbon Market Mechanism.

- Act. 2.5.2 Training and awareness on the voluntary market mechanism: There is no voluntary carbon market in Algeria, and the experience of Algeria engaging in any type of carbon market mechanisms is very low. The implementation of a voluntary market diagram shown in Figure 4 will, therefore, require the strengthening of human and institutional capacities. The technical assistance will develop training modules designed especially for staff of the National Climate Change Agency (NCCA), the Directorate for the management of climate change (DMCC) and engineers of the AND. The experiences and Ethiopia training materials (COMPOST project - PIMS 5541) will be sought for strengthening human and institutional capacities.

44. *Output 2.6: An organic waste transformation plant for the production of fertilizers and renewable energy is equipped and operational*. The waste transformation plant in Constantine will convert the organic fraction of the waste (about 60% of total waste collected) into fertilizer and renewable energy. Approximately 60 tonnes of NPK-enriched fertilizers will be produced per day, and thermal power generation will be provided from a steam turbine with a capacity of about 2 MW and operated at a capacity factor ≥ 80%.
    - Act. 2.6.1: Construction of waste transformation plant: The site development plan for the industrial site and the specifications that will be developed under the output 2.1 will be implemented for the construction of a solid waste transformation plant with the support of Canadian partners in the PPP. The equipment specifications will be as specified in the technical datasheet. The construction and operation of this unit will be made in line with the ESMP that will be developed under activity 2.1.3.
    - Act. 2.6.2: Capacity Building to operate the transformation plant: The innovative character of the UNDP-GEF project implies that that the technical expertise to ensure the proper operation and maintenance of the waste processing plant is not available in Algeria. The project will support the training of selected AND and SOPTE staff who will be responsible for the operation and maintenance of the plant. The training will be based on a combination of: (1) study tours, and (2) learning-by-doing training programmes with qualified trainers. Around 45% of the work force will be women (see Project Results Framework).

45. *Output 2.7: An analysis, research and development centre for the monitoring and optimisation of the quality of outputs from transformation plant is equipped and operational*. A well-equipped and operational laboratory for carrying out analysis and research is needed to optimize the waste transformation process and finished products (e.g. fertilizers and combustibles). The activities proposed below are directly related to the activities of Output 2.2.
    - Act. 2.7.1: Analysis centre is equipped: Investments will be made to equip the existing analysis centre housed by SOPTE at its facilities at Oued-Smar (Alger) using the results of Act. 2.2.1. The equipment specifications will be as specified in the technical datasheets.
    - Act. 2.7.2: Capacity Building to operate the analysis centre: Technical training will be provided to fill the training gaps in terms of skills needed for the operation of new equipment and to establish and adopt new laboratory protocols.

46. *Output 2.8: Collection point and poultry waste processing plant in Sétif*. A facility to receive and transform poultry waste into fertilizer will be installed on the storage site at Ksar El Abtal in the commune of Sétif (Annex SA4). This site already serves as a storage area for poultry waste from the north-eastern parts of Algeria. As described in Annex SA4, the spreading of poultry waste on this site for drying is an illegal operation with adverse environmental and public health impacts. The implementation of the poultry transformation facility at Ksar El Abtal will be made so that there is no disturbance in the collection system, distribution and existing storage. On the other hand, the value added transformation of these wastes will eliminate environmental impacts and risks to public health. The following activities will be implemented in connection with the activities of Output 1.3.
    - Act. 2.8.1: Installation of the poultry waste transformation plant: The site development plan for the industrial site and the specifications that will be developed under Act. 1.3.1 will be implemented in the installation of poultry waste transformation plant with the support of Canadian partners in the PPP. The equipment specifications will be as specified in the technical datasheet.
    - Act. 2.8.2: Capacity Building to operate the plant: UNDP-GEF project will support training of AND and SOPTE staff for the operation and maintenance of this poultry waste transformation plant. The project provides for two means of training: (1) study tours, and (2) training programmes on-the-job with qualified trainers. Around 45% of the work force will be women (see Project Results Framework).

Component 3: Promotion of municipal model of integrated waste management at regional and national levels

Outcome 3: Replicability of the municipal waste management model.

47. This component addresses the replication of the municipal integrated waste management model, and infrastructure and equipment needed to achieve the objective of the project. Although most of the equipment will be imported, the project will maximize local production of mechanical parts and spare parts to ensure project sustainability. Local parts manufacturing will not only create jobs but by meeting the demand for these services, the country will have the opportunity to strengthen its level of expertise, making it more autonomous in engineering, design and manufacturing. The materials used in the manufacture of spare parts can be obtained (in part) from recycling facilities established in Component 2. Further, a replication plan accompanied by investments plans and supported by wilaya-specific technology transfer will be developed for scaling up the circular waste transformation model regionally and nationally.

48. *Output 3.1: A mechanism for the replication of the project in 48 Wilayas is designed and implemented.* The UNDP-GEF project will provide the proof-of-concept for a circular waste economy in Constantine and Sétif with the objective that the integrated solid waste management business model can be scaled-up in all Wilayas. A replication plan accompanied with a detailed investment plan will be defined for scaling up of a circular economy through the integrated management of solid waste in the other 48 wilayas. In view of supporting the sustainability of the business model, the project will collaborate with tertiary institutions. This output will use the results from Outcome 4. The proof-of-concept circular solid waste management, together with the replication plan will squarely support implementation of the SNGID with multiple sustainable development dividends that will be captured using the SDG Impact Framework that will be developed under Output 4.4. In particular, the replication plan will serve to catalyse private sector investments in the financially viable circular waste economy to deliver better municipal services, reduce municipal public deficit, produce local and global environmental benefits, and creating jobs in small and medium enterprises. The UNDP-GEF project will therefore contribute towards the post-COVID economic recovery in tangible ways by promoting a circular solid waste economy as a first-of-its kind in Algeria.
    - Act. 3.1.1. Professional and graduate-level training in solid waste processing technologies. The project will collaborate with the University of Mentouri Brothers Constantine1 that launched a professional diploma entitled Sustainable Management, Treatment and Waste Recovery (GDTVD) in September 2018 to upgrade the technical skills of staff of the project partners. The diploma will be updated to include the elements of GHG mitigation and sustainable development impacts (e.g. Impact on SDGs). By the end of the project, 40% of the trained persons will be women (see Project Results Framework).
    - Act. 3.1.2: Develop a replication plan. Using the results of Activities 3.1.1 and 3.1.2, a replication plan will be developed for the scaling up of integrated solid waste management in 48 Wilayas. This replication plan will be accompanied by an investment plan and transfer of appropriate technologies in the context of each Wilaya. An important feature of the replication plan is to incorporate the conduction of Strategic Environmental and Social Assessments (SESA) as suggested by the SESP (Annex E). The SESA will ensure that the replication plan is grounded in a human rights-based approach; is gender inclusive and transformative; and adopts environmentally sound technologies and management approaches that will deliver local (e.g. negative impacts of mismanagement of solid waste) and global (e.g. reductions in GHGs) environmental benefits and minimize impacts on natural resources and ecosystems (both in terms of quantities used and any pollutions created).

49. *Output 3.2: One factory for the production of spare parts is installed and equipped*. For the sustainability of the project, selected spare parts will be manufactured locally so that they are readily available for equipment used in the sorting and transformation of solid waste. It will be essential to have the services of a precision engineering centre capable of manufacturing spare parts in the shortest possible time. The Divindus Group already has a factory that will be upgraded to manufacture spare parts. The investments to modernize the existing plant will be borne by the SOPTE co-financing in the project.
    - Act. 3.2.1: Feasibility study: A feasibility study will be conducted to identify changes that will be required to the existing plant in the Divindus group. This study will be based on inputs from the Canadians partners who will advise on mechanical parts that can be manufactured locally. The study will determine the timeline and investment plan for the modernization of the existing plant.
    - Act. 3.2.2 Modernization of the mechanical factory: The plant will be modernized for the production of mechanical parts based on the results of Act. 3.2.1. Attention will be given to increasing the level of women inclusion in the fabrication of mechanical parts.

Component 4: Knowledge management and monitoring & evaluation

Outcome 4: Lessons learned are captured and disseminated widely, and project monitoring and evaluation is carried out in order to ensure adaptive management and achievement of project objectives.

50. This component deals with knowledge management in order to put in place an efficient and effective system of adaptive management that will allow the project to achieve its objectives. The system will be based on two main attributes, namely: (1) capturing and disseminating the lessons learned from the project widely, and (2) ensuring appropriate monitoring and evaluation of the project. The two attributes constitute the Monitoring and Evaluation Plan given in Section VI. Four outputs are proposed to achieve the outcome.

51. *Output 4.1: Inception workshop*. An inception workshop will be planned within 60 days of project CEO endorsement.

    - Act. 4.1.1. Planning and carrying out national inception workshop: The national inception workshop will be carried in Constantine at the beginning of project implementation in order to achieve the goals described at paragraph 74. The workshop will be organised by the PMU with support from UNDP, SOPTE and AND.

52. *Output 4.2: Project monitoring*. Adaptive management is a prerequisite for successful project implementation. This is turn requires effective monitoring of the project.

    - Act. 4.2.1. Monitoring of results framework and GEF core indicators: The GEF Core indicators included at Annex L will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Also, the indicators found in the Results Framework will be monitored as per the Monitoring Plan given in Annex B.

    - Act. 4.2.2. Monitoring of project plans: The UNDP-GEF project is accompanied by various plans including Stakeholder Engagement Plan (Annex D), mitigation plan for project risks (Risk Register in Annex I), and Gender Action Plan (Annex F). These plans will be reviewed according to the monitoring and evaluation requirements at paragraph 86. This activity also covers the contribution of the PM to organise PB (PSC) meetings.

    - Act. 4.2.3. Monitoring of social and environmental safeguards: The UNDP-GEF project is rated as a 'high' risk project. Consequently, there is a need to carry out continuous monitoring of the social and environmental safeguards as proposed in the ESMF (Annex H). The ESMP that will emanate from the ESMF will also be monitored under this activity.

53. *Output 4.3: Project evaluations*. As per standard UNDP-GEF procedures, independent evaluations will be carried out at the mid-term and at the end of the project. The financials of the project will also be verified by an independent accredited auditor on an annual basis.

    - Act. 4.3.1. Mid-term review: An independent mid-term review (MTR) will take place at the half-way mark of project implementation according to paragraphs 78 to 80. The MTR will be translated in French to make it widely available to all project stakeholders

    - Act. 4.3.2. Terminal evaluation: An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities according to paragraphs 81 to 83. The TE will be translated in French to make it widely available to all project stakeholders.

    - Act. 4.3.3. Independent financial audits: As per standard procedures, the financials of the project will be verified by an accredited auditor every year.

54. *Output 4.4: Knowledge management*. Good practices and lessons learned from the implementation of the project will be identified, documented and shared among all project partners. Monitoring and evaluation frameworks to measure the project's impacts on the SDGs and avoided emissions will be established. The project will follow seven elements that are recommended in a best practice knowledge management approach: 1) Overview of existing lessons and best practice that inform project concept; 2) Plans to learn from relevant projects, programs, initiatives & evaluations; 3) Proposed processes to capture, assess and document info, lessons, best practice & expertise generated during implementation; 4) Proposed tools and methods for knowledge exchange, learning & collaboration; 5) Proposed knowledge outputs to be produced and shared with stakeholders; 6) Discussion on how knowledge and learning will contribute to overall project/program impact and sustainability and 7) Plans for strategic communications.

- Act. 4.4.1: Develop improved transparency frameworks and impacts on sustainable development goals (SDGs): Since the main objective of the project is to reduce GHG emissions, while offering sustainable development benefits to local communities, the project will establish a measurement, reporting and verification (MRV) mechanism to track emission reductions resulting from the integrated solid waste management. In addition, the project will support the development of a framework for measuring the impact of GEF investments on SDGs.[17] The SDG Impact Framework will be useful to monitor the impacts of public and private sector investments in integrated solid waste management at local and national levels.

- Act. 4.4.2: Surveys to capture and share lessons learned: As part of an adaptive project management approach, lessons learned from the project will be measured on an annual basis, and the results used to inform adjustments to the project annual work plans. The lessons learned will be published and disseminated to all stakeholders of the project and made available to a wide audience inside and outside of Algeria through a website project that will be developed by Act. 4.4.3. The project findings will be integrated in the national environmental action plan and will be published in the form of a good practice guide.

- Act 4.4.3: Develop a project website: A dedicated website will be developed for the project, and this website will constitute the main portal for communicating about the project in order to increase its visibility and to communicate its lessons learned to a wide audience. The website will also provide a means for receiving grievances, and hence, forming an integral part of the GRM.

55. GHG reductions The project will help the implementation of the Nationally Determined Contribution (NDC) which contains (i) recovery of waste, and (ii) composting of organic waste and green waste as key actions in the waste sector.[18] During its lifetime, the project will help reduce greenhouse gases (GHGs), including methane avoided from landfill resulting from the organic fraction of solid waste that will be transformed; optimized transportation (the collection of household waste and transport in Constantine and poultry waste fertilizers in Sétif) and transportation avoided (the distance between the project site and landfill avoided in Constantine); plastic recycling; and substitution of chemical fertilizers with organic-base fertilizers. It is expected that GHGs will be avoided as from the second year of project implementation. At the end of the 5-year project, the cumulative avoided emissions will be about 357,279 tCO_{2e}. The results are summarized in Table 4, and the GHG emission reduction calculations, including the methodologies used, are found in Annex J. Modeling over a 15-year economic life gives a total reduction of direct GHG emissions of 4,301,757 tCO_{2e}. The direct GHG emission reductions give a carbon abatement cost of 1 US$/$tCO_{2e}$.

Table 4: Reductions in direct GHG project

GHG emission reduction Source	*Reduction in direct emissions (tCO_{2e})*					
	Yr1	Yr2	Yr3	Yr4	Yr5	**Total**
Reduced transportation	0	19,681	19,681	19,681	19,681	**78,725**
Reduced landfill gas	0	442	40,515	67,484	145,817	**254,258**
Chemical fertilizer reduction	0	608	608	608	912	**2,735**
Recycling (plastic)	0	2,957	2,957	2,957	4,436	**13,307**
Electricity generation	0	0	0	0	8,254	**8,254**
Total	**0**	**23,688**	**63,761**	**90,730**	**179,100**	**357,279**

Source: author

56. Indirect emissions: Both bottom-up and top-down approaches were used to estimate indirect GHG emission reductions. Applying a replication factor of 3 to reduce direct emissions, the bottom-up approach results in reduced indirect emissions of about 12.91 $MtCO_{2e}$. Using a post-project 10-year market potential, the top-down indirect GHG emission reduction is estimated at about 15.40 $MtCO_{2e}$.

[17] Please see https://sdgimpact.undp.org/ - accessed 16 February 2019.
[18] MEER (2019) Plan National Climat.

57. The total emissions reduced by the project is calculated as follows:
    - Total direct GHG emission reduction = 4,301,757 tCO_{2e}
    - Total indirect GHG emission reduction = 12,905,271 tCO_{2e}
    - Total reduced emissions (According to Project Objectives) = 17,207,028 tCO_{2e}

58. Partnerships: For the project to achieve its objectives, a number of project partners have been identified using the multi-stakeholder approach described in the previous section. Since the project operates at several geographical and political levels (e.g. National institutions, local governments, households) the importance of an inclusive approach to cater for the interests of key project partners cannot be overstated. The project will be implemented in a context where there are parallel initiatives with which synergies should be formed to provide maximum benefits to the beneficiaries. Table 5 lists key project partners required to achieve the desired results of the project at the output level. The description of their participation in the project is directly related to the assumptions in the ToC. Details of partnerships and stakeholder engagement can be found in Annex G (Stakeholder Engagement Plan). This annex also gives a mobilization and communication plan with stakeholders. In addition, the UNDP grievance redress mechanism will be set up in accordance with UNDP procedures.

59. During the project, a number of other stakeholders have their say, including non-governmental organizations, civil society and local communities. Key stakeholders were informed about the project and its objectives and participated in the baseline study as well as workshops to identify priority actions, establish the baseline and select indicators to measure the results. They participated in the ProDoc validation workshop (Annex SA5).

Table 5: Stakeholder involvement in the implementation of the project.

Stakeholder	Contributions	Output
The Ministry of Environment (ME)	ME is coordinating with stakeholders on policies to be included in the National Strategy for Integrated Waste Management 2035 (SNGID 2035). Its mission extends to protecting the environment, preserving water tables and providing solutions to the saturation of sanitary landfills. ME is also involved in achieving the SDGs Goals, including sanitation, the fight against climate change, deforestation, desertification, protecting biodiversity and reducing pollution and greenhouse gas. Whereas household waste constitutes a permanent pressure on the flora, fauna, and public health, it can also be transformed through recycling, energy production, and fertilizer production so as to substitute for the importation of plastics, fertilizers, paper, glass, leather, and clothing. In achieving these objectives through the circular waste economy, the National Waste Agency (AND) is the focal point of ME. The Agency is responsible for promoting the sorting, collection, transport, treatment, recovery and transformation of waste. In its mission, the AND provides assistance to local authorities in the field of waste management in sorting, collection, transport, treatment, recovery and transformation of waste. AND provides public service mission in information and extension of technical and promotional sorting, collection, transport, treatment, recovery, transformation and disposal of waste in accordance with the guidelines of the relevant Ministry. Also, the Ministry will facilitate coordination of all stakeholders during the development of replication plan for scaling up the integrated solid waste management model under Output 3.1. In particular, it will ensure the meaningful participation and consultation of stakeholders throughout the preparation of the SESA.	→ **Output 1.1**: The source separation of waste at household level is supported by education and an awareness campaign → **Output 2.3**: A legal and regulatory framework for the standardization of organic fertilizers is developed and implemented → **Output 2.5**: Explore the possibilities of developing a waste management project for the voluntary carbon market → **Output 3.1**: A mechanism for the replication of the project in 48 provinces is designed and implemented → **Output 4.1**: Inception workshop → **Output 4.2**: Project monitoring → **Output 4.4**: Knowledge management
The Ministry of Industry (MI) and SOPTE, through	MI is the major partner directly involved in the project through the SOPTE, which is a subsidiary of Divindus. As part of the integrated project management of household waste and energy production, MI supports micro enterprises through access and tax exemptions. SOPTE will play a leading role in the	→ **output 1.3**: A supply chain for poultry waste from nearby farms is established and operational → **output 1.2**: The municipal solid waste collection process in Constantine and Sétif is designed, planned and implemented

Stakeholder	Contributions	Output
its commercial arm Divindus	first part of the collection project for various types of waste for the pilot project and the development of poultry waste collection network Constantine and Sétif. The subsidiaries of the industrial group Divindus contribute to the development of components production plant. The objectives of the development of the environmental industry were recently inserted into the Algerian Nomenclature of Activities (NAA) Section "E" (abstraction and distribution of water, sanitation, collection and management of waste recovery for recycling waste and avoiding pollution[19]). These new sustainable, environmentally friendly activities are expected to generate value and create employment. DIVINDUS Industrial Group and its subsidiary SOPTE in Constantine are well positioned in the development of these activities that will boost the circular economy.	→ **output 1.4**: The waste sorting centre is planned and designed → **output 1.5:** Eight of waste collection points are operational → **output 1.6**: Acquisition of two electric vehicles for waste collection within the reach of cities → **output 1.7**: A waste sorting system capable of processing 750 tonnes per day of MSW is installed, equipped and operational → **output 2.1**: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed. → **output 2.2**: Capacity building for analysis and monitoring of product quality from processing facilities is planned is designed. → **output 2.4**: A favourable environment is created for recycling businesses, including the introduction of financial mechanisms and incentives for communities and individual participants involved → **output 2.5**: Explore the possibilities of developing a waste management project for the voluntary carbon market → **output 2.6**: An organic waste processing plant for the production of fertilizers and renewable energy features and operational → **output 2.7**: A centre of analysis, research and development for monitoring and optimizing product quality processing facility is equipped and operational → **output 3.2**: A spare parts production plant is installed and equipped → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
Wilaya of Constantine and Sétif under the Ministry of Internal Affairs, Local Authoriteis, and Land Use Planning (MICLAT)	The protection of the natural environment requires continuous efficiency in waste management in order to prevent any negative impacts on the population, the urban environment, social infrastructure, and wastewater treatment plants. The Wilayas of Constantine and Sétif are decentralized local authorities with legal authority and financial autonomy. They have a People's Assembly of the Wilaya (PAW), with mandate for socio-economic development, land use and environmental protection in municipal areas. The PAW defines the master plan and development plans, participates in formulation of procedures for operations planning and can initiate the creation of municipal facilities depending on their size, importance or use. It also implements strategies and action plans for the protection and promotion of agricultural land. These functions and powers and their cross-cutting nature, make the Wilayas of Constantine and Sétif key players to ensure the successful implementation of the UNDP-GEF project. The missions of MICLAT also integrate the development of communal activities and the fight against unemployment by the new value chains related to sorting, recovery, and recycling of MSW. These actions are accompanied by improved communal services.	→ **output 1.2**: The municipal solid waste collection process in Constantine and Sétif is designed, planned and implemented → **output 2.8**: Collection point and poultry waste processing plant in Sétif → **output 3.1**: A mechanism for the reproducibility of the project in 48 provinces is designed and implemented → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4**.4: Knowledge management

[19] http://www.ons.dz/IMG/nparev1.pdf

Stakeholder	Contributions	Output
The Ministry of Agriculture, Rural Development and Fisheries (MADRP)	The MADRP is interested in the benefits of integrated management of household waste from the perspectives of improving food security and the development of organic agricultural production to be supported by the production of fertilizers from household waste and poultry waste. In this context, MADRP will be responsible for the homologation of NPK-enriched, organic-based fertilizers produced by the UNDP-GEF project. The Directorate for Plant Protection and Technical Controls also leads the early stages of testing the performance of the organic fertilizer through appropriate approval and certification procedures. In addition, it will also play a crucial role in raising farmers' awareness of the organic-based fertilizers.	→ **output 1.3**: A supply chain for poultry waste from nearby farms is established and operational → **output 2.1**: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed. → **output 2.3**: A legal and regulatory framework for the standardization of organic fertilizer is developed and implemented → **output 2.6**: An organic waste processing plant for the production of fertilizers and renewable energy features is operational → **output 3.1**: A mechanism for the reproducibility of the project in 48 provinces is designed and implemented → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
The Ministry of Energy (ME)	In its new programme and the Executive Decree of February 2017, "Renewable Energy and Energy Efficiency", the ME can guarantee a PPA with conditions suitable for the production of electricity generated from biomass resulting from the conversion of the organic fraction of municipal solid waste. Electricity production from waste transformation can be an effective substitute for natural gas contributing to the reduction of Greenhouse Gas (GHG) emissions and promoting the consolidation of revenue from hydrocarbons. The impact of the using biomass-based electricity compared to natural gas has been estimated to save around 26 million US Dollars for some twenty Wilayas, which opens the opportunity for duplication to other provinces of the country.	→ **output 2.6**: An organic waste processing plant for the production of fertilizers and renewable energy features is operational → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
The Ministry of Communication (MC)	The media and communication plays a determining role to place all project partners acting in symbiosis. The participation of the Department of Communication is essential to ensure the effectiveness of the communication strategy and the communication plan of the UNDP-GEF project and for effectiveness of the outreach activities planned under Component 1. The Department may, inter alia, facilitate partnerships with the local radio and local television free-of-charge. After the implementation of the project, it will contribute to its scaling up by ensuring media coverage nationally	→ **output 1.1**: The separation of waste at the household level at source is supported by education and awareness campaign → **output 1.5** Eight of waste collection points are operational → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
Ministry of National Education (MNE)	In the context of the GEF project, MNE develops educational curriculum and course modules on the protection of the environment and environmentally sound waste management for students of primary and secondary schools, and these are supported by expert intervention and appropriate pedagogical tools.	→ **output 1.1**: The e separation of waste at the household level at source is supported by education and awareness campaign → **output 1.5** Eight of waste collection points are operational → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
Ministry of Education and Vocational Education (MEVE)	The GEF project will generate a significant potential for employment and vocational training will be required capitalize on opportunities afforded in the collection, sorting, recycling and transformation of solid waste. The cooperation with this institution will ensure adequate technical and vocational training programmes are developed and advertised in order to ensure sustainability of the GEF project.	→ **output 3.1**: A mechanism for the replicability of the project in 48 provinces is designed and implemented → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management
The Ministry of Higher Education and Scientific Research (MHESR)	The Ministry has the expertise of its researchers and research centers such as the Centre for Research in Physical and Chemical Analysis, the Centre for Renewable Energy Development, and the Centre for Research, Science and Technology in Arid Regions. The National Agency for the Commercialization of Research Results is involved in the creation of start-ups in the field of waste management. This expertise will be supportive of the overall objective of the	→ **output 2.7**: A centre of analysis, research and development for monitoring and optimizing product quality processing facility is equipped and operational → **output 3.1**: A mechanism for the replicability of the project in 48 provinces is designed and implemented → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring

Stakeholder	Contributions	Output
	project to scale up its results at the national and regional levels. The project will also allow researchers to gain practical experience in waste transformation, as well as upgrade existing university courses in waste management and recovery (Universities of Constantine, Sétif, Bab Ezzouar, Boumerdes, Tizi Ouzou , Annaba, Mostaganem, Oran, Saida) through twinning.	→ **output 4.4**: Knowledge management
Economic Actors (Public, Private) and Social (Households, Associations, Cooperatives)	Companies and actors involved in the collection, sorting and recycling of waste and materials (paper / cardboard, plastics ...) from households are positioned along the environment industry related to "Sorting, Recycling, Waste-to-Energy and Fertilizers ". They contribute by creating enterprises to cleaner surroundings, reduction of pollution and health preservation of the population. Companies set up in the recycling of materials (paper, cardboard / plastic) create jobs; generate revenue from value addition through recovery and transformation of solid waste; and provide direct waste management services to local communities. In the municipal waste sector, opportunities are significant to increase the circular economy since only 7% of total wastes are transformed[20]. Because of the innovative nature of the UNDP-GEF project and the importance of the upstream management of household waste, the participation of civil society in Constantine and Sétif (Imams, neighborhood associations, associations working on the environment, an association of parents of students) is decisive in education, advocacy, and household sensitization in integrated waste management. Importantly, these organizations operate in closest proximity to households who are the principal waste generators. Having the buy-in and participation of households starting with sorting of waste at source is an important link for the sustainability of the circular economy.	→ **output 1.1**: The separation of waste at household level at source is supported by an education and awareness campaign → **output 1.2**: The municipal solid waste collection process in Constantine and Sétif is designed, planned and implemented → **output 1.3**: A supply chain for poultry waste from nearby farms is established and operational → **output 1.5** Eight of waste collection points are operational → **output 1.6**: Acquisition of two electric vehicles for waste collection within the reach of cities → **output 1.7**: A waste sorting system capable of processing 750 tonnes per day of MSW is installed, equipped and operational → **output 2.1**: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed. → **output 2.2**: Building capacity for analysis and monitoring of product quality from processing facilities is planned is designed. → **output 2.4**: A conducive environment is created for recycling businesses, including the introduction of financial mechanisms and incentives for communities and individual participants involved → **output 4.1**: Inception workshop → **output 4.2**: Project monitoring → **output 4.4**: Knowledge management

60. Project Risks: The risks faced by the project and the countermeasures that have been proposed to reduce or eliminate them are detailed in Annex I. The risks include those emanating from the SESP shown in Annex E, as well as that arising from the COVID-19 pandemic. The project has been rated as being a 'high' risk project, and Table 6 summarises only the moderate and high risks. As per standard UNDP requirements, these risks will be monitored quarterly by the Project Coordinator. The Project Coordinator will report on the status of the risks to the Project Manager at the UNDP Country Office, which will record progress in the UNDP ATLAS Risk Log. Management responses to critical risks will also be reported to the GEF in the annual PIR. It is pointed out that a Private Sector Due Diligence has been carried out for SOPTE that has revealed no private sector governance risks.

Table 6: Assessment of key project risks and mitigation measures (detailed in Appendix I)

Risk	Risk category	Mitigation Action
The COVID-19 Pandemic may slow down project implementation due to restricted mobility of persons and inability to carryout technology transfer because of closed borders.	Moderate	The effects of the pandemic will be attenuated by the fact that movement within the country is not restricted outside of the nighttime hours of curfew. The following project design provide mitigation actions that reduce the need for physical travel: • The biggest threat relates to the movement of international consultants and partners of the Joint Venture. The project has been designed to make maximum use of local expertise as far as practicable. This is reflected in the budget figures with national consultancy fees higher than international consultancy fees by a factor 1.45. • A project website will be developed under Output 4.4 that will facilitate data and information sharing, and enable the use of virtual meetings to

[20] https://www.elwatan.com/pages-hebdo/etudiant/partenariat-entre-luniversite-constantine-3-et-la-giz-un-socle-pour-valoriser-la-gestion-des-dechets-03- 10-2018

		carry out stakeholder meetings and consultations. For instance, the Inception Workshop can be planned to take place virtually if needed. • Technology transfer can be impeded because the borders may be closed. However, the project envisages to first carry out detailed environment and social impacts studies (Annex H and Section IV) prior to technology transfer. These studies will be front loaded, which will give more time for the restoration of normality in Q3 and Q4 of 2021. Further it is pointed out that SOPTE has put in place stringent health and sanitary practices that have ensured its continued daily delivery of public services related to waste collection, transport and disposal.
Risk of PPP disintegration or undercapitalized sorting and waste transformation that would delay project implementation.	Moderate	This risk may result in project failure. In such a case, MI must take full responsibility for ensuring that the company remains operational. To this end, it will assume financial responsibility for initial costs and unpaid expenses until an alternative private partner is found or the GEF project is completed.
Lack of technical expertise for the development and implementation of the waste processing facilities.	Moderate	A series of detailed technical and economic feasibility studies will be conducted and capacity building exercises will be undertaken by the UNDP-GEF project to increase local expertise in the operation and maintenance of solid waste processing plants. This risk is further mitigated given that the Canadian partners master all the technologies that will be transferred to Algeria.
Social / cultural risk Project could perpetuate the current low representation of women in the construction sector.	Moderate	The ESIA and ESMP terms of reference for the waste processing units require that contractors include procedures for the equitable gender selection of labor. These are included in Outputs 1.3, 1.4 and 2.1, which will develop the technical specifications for construction the waste collection, recovery and transformation infrastructure, as well as Output 3.2 that will support the production of mechanical parts.
Environmental risk (pollution and resources) The transformation of solid wastes will general effluents and require electricity for operation. In the case where solid waste will be combusted, waste transformation will generate solid wastes in the form of bottom ashes. Further, there will be stack emissions that can pollute the air.	Substantial	Constantine The ESIA and ESMP that SOPTE will produce for the Constantine sorting and processing units (Outputs 1.3.2, 1.4.3 and 2.1.3) will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations. Energy consumption can eventually be offset by energy production from the 2MWe steam powered turbine. It is expected that the project will be generating 14,980 MWh (2 MWe installed capacity) of electricity annually at the end of the 5th year. Training and special equipment will be provided for the safe handling of hazardous substances recovered during the waste sorting process (capacity building provided under Outputs 2.6 and 2.8). In addition, the PPG stage will require that activities to reduce the consumption of household hazardous wastes in Constantine and Sétif are developed (Outputs 1.1 and 1.5). In addition, activity 1.2.2 will implement appropriate procedures for the collection of household hazardous waste in Constantine. Sétif The ESIA and ESMP that SOPTE will produce for the Sétif poultry waste processing unit (see above) will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations.
Socioeconomic risks: This risk was revised to clarify the potential loss of economic activities by operators (mostly informal) in the treatment of channels of current solid waste. As explained in Annex I there is no risk of loss of employment or revenues related to access to the landfill and the transfer station. As explained in the context of social and environmental management, there is a high risk elsewhere in the waste	High	There is a waste sorting centre adjacent to the transfer station (Constantine) where large sorting containers are installed. Some containers are compactor-like. The waste sorting centre also has a baler for cardboard and plastic. The bales of recovered materials, mainly from large waste producers, such as commercial and trade operators are sold to recyclers and this will always be the case with the UNDP-GEF project. Under the activities of Output 2.4, informal groups will be encouraged to participate in recycling activities through the project, and this will be a measure to prevent the possible loss of jobs.

management chain. These risks do not relate to the relocation of people but rather to compensation for the shortfall in revenues or loss of jobs. Constantine: There are two dimensions of this socioeconomic risk: (i) there are informal operators upstream of the household waste chain that collect dry material (plastic, cardboard, glass, ferrous) for recycling. Upstream sorting will not have an adverse impact on these collectors if households continue to provide them with recyclable material. The negative impacts will follow if households decide to do otherwise, that is to deliver the recyclable part to the project; and (ii) development of 500 tonnes / day and 750 tonnes / day of solid waste implies that the EPIC managing the sanitary landfill will not have enough waste for its operational needs. The pressure for job and income loss is hence high, and will increase with the introduction to the potential expansion of the project. Setif: The project will draw 28% of poultry waste stocks on the site of Ksar El Abtal. So potentially, operators that carry the poultry waste from this site to the south of the country will suffer 28% income loss, even if job losses are more limited (see Annex SA4).		A framework for social and environmental management was developed for the project (Annex H) in order to manage the risks related to job losses in the baseline solid waste sector. Building on this framework, the project will finance social and environmental impact studies for all project sites (Activities 1.3.2, 1.4.3 and 2.1.3) and the formulation of social and environmental management plans. Social management plans will aim to find ways to mitigate the risk of loss of jobs and income.
Health and safety risks The project has increased health risks for persons handling hazardous waste and organic waste. It is likely that workers handling poultry waste are affected. Poultry waste is a disease vector. In addition, the project may lead to the production of hazardous and non-hazardous; the project consumes significant resources (energy). The separation plant and waste processing will consume a significant amount of energy. There will be a risk of large volumes of household hazardous waste that must be handled and disposed. In addition, there is a risk of pollution by heavy metals resulting from the use of fertilizers to be produced from waste derived from electricity production. It may be difficult to sort and remove any heavy metals such as lead and mercury from solid waste. These metals can be found in waste from the power station, which could contaminate the fertilizer and agricultural land.	Substantial	These risks are covered under the ESMF of the project. This framework makes provision to carry out ESIAs in line with UNDP social and environmental safeguards (standards and principles). Subsequently, ESMPs will be formulated for the implementation by the project. Building on the ESMF, the UNDP-GEF project will finance social and environmental impact studies for all project sites (Activities 1.3.2, 1.4.3 and 2.1.3) and the formulation of social and environmental management plans in the first year of the project. The ESMPs will aim to find ways to mitigate the risks of jobs and income losses. Activities related to the handling of poultry waste and hazardous waste such as heavy metals include mitigation measures to ensure that if such events did occur then these are addressed in effective and efficient ways, and that affected people get the appropriate medical care and treatment. Training and special equipment will be provided for the safe handling of hazardous substances recovered during the waste sorting process (capacity building provided under Outputs 2.6 and 2.8). In addition, activities to reduce the consumption of household hazardous wastes in Constantine and Sétif have been developed (Outputs 1.1 and 1.5). Also, activity 1.2.2 will implement appropriate procedures for the collection of household hazardous waste in Constantine.

The description of this risk has been updated at PPG to include a very important element concerning the treatment of waste water and its discharge by waste transformation plants. Another element is the air emissions from electricity production. The social and environmental management framework has shown that environmental impact assessment was made for the solid waste recovery and transformation plant in Constantine, and that the study has shortcomings (Annex H). Above all, it is not in line with UNDP social and environmental safeguards standards and principles. Impact studies had not yet been made for activities in Sétif. Further, the construction and operation of household waste sorting and processing units in Constantine, and of a poultry waste processing unit in Sétif, brings issues of labor management, occupational health and safety, construction site management, sexual exploitation and abuse, emergency preparedness and response, environmental and social monitoring of contractors, and the need for a worker grievance mechanism. Furthermore, road and traffic risks are associated with SOPTE's direct involvement in the collection and transport of solid waste, as well as its involvement in the marketing of fertilizer produced from poultry waste.		
Technical risk Construction and operation of solid waste processing units.	High	As the project is categorized as 'High' risk, an ESMF (Annex H) was prepared, covering all risks identified in the SESP. As per the ESMF, an ESIA will be conducted and ESMP prepared during project implementation for the waste processing units in Constantine and Sétif. The ESIAs are fully incorporated in the project design under Output 1.3 for the setting up of a waste recovery and transformation plant for poultry waste in Sétif; Output 1.4 for the construction of a centralized municipal solid waste sorting plant in Constantine; and Output 2.1 concerning the construction of a solid waste transformation plant, including waste-to-energy unit in Constantine.
Social risk The conversion of the current informal poultry waste management site in Setif, into a unit to transform poultry waste into fertilizer would require that current occupants leave the site.	High	A Resettlement Action Plan (RAP) might be necessary if the land acquisition by SOPTE involves involuntary resettlement. A RAP would not be necessary if the land is acquired commercially through a willing buyer/willing seller process. In that case, documentation of the process would suffice. The Project will in no instance support eviction, and if necessary, an alternative site will be considered as per the Output 1.3.

61. Gender equality and women empowerment: During the preparatory phase, the project team conducted a gender analysis through field consultations in Constantine and Sétif (Annexes SA2, SA3 and SA4), collecting gender-disaggregated socioeconomic data and by integrating measures, indicators, targets and budget in the project activities. The gender analysis and Gender Action Plan (GAP) is found in Annex F and highlights the gender dimension in relation to the status in the family and in society, capacity and participation in decision making.

62. The analysis resulted in the following recommendations regarding the gender dimension in the project:

- **Spouses (men and women) have a central and shared role in waste management at the household level.** They should be encouraged to participate in the upstream sorting and the means and communications materials to households must respond to this gender dimension.
- **We must put in place favourable conditions for women's access to waste-derived products that are transformed by the project, as well as jobs created by the project, and access to incentives to income generating businesses and micro-enterprises.** Women must be involved in productive activities in the solid waste recovery and transformation processes, and their working conditions improved.
- **The entrepreneurial context must become favourable to the effective participation of women in integrated solid waste chain to develop a circular economy locally.**
- Finally, women should be encouraged and provided with the means to participate in project activities, including sensitization and training sessions for the integrated solid waste management, including sharing of experiences in order to reduce their work burden and if possible increase their independence.

63. In response to the main conclusions of the consultations, the project will make gender equality a priority in many ways. The project will advocate the mainstreaming of gender equality among its staff so that they are conversant with gender-related issues in the project design and attentive to issues gender mainstreaming; the Project Coordinator will be responsible for all gender issues relevant to the development, implementation and project monitoring and for the strategy to integrate gender equality internally and externally. This will be primarily to promote gender equality in capacity building and enhancement of the role of women in project activities. The project also will work with UNDP gender experts in order to integrate their knowledge in the development and implementation of GEF funded projects. Thus, the issues related to gender equality will receive special attention in all project activities. In response to the gender analysis, Table 7 shows the measures to integrate gender equality in the UNDP-GEF project. The implementation and monitoring and evaluation of the GAP will be under the responsibility of the Project Coordinator.

Table 7. Gender Action Plan.

Objective	Action	Indicators and targets	Responsible institution	timeline	Budget (US $)
Outcome 1: Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif to reduce the volume of landfill.					
1- Integrated management of household waste at source, minimizing residual waste, reducing transport distance.	Output 1.1 & Output 1.5 - The progressive upstream sorting is to implement a process of separation and recycling of household waste in Constantine to reduce the volume of landfilled waste. To be successful, the involvement of heads of households (men and women) in upstream sorting is crucial. Incentive mechanisms that are sensitive to Gender will be identified and formulated (Act. 1.1.3) Waste sorting at source involves an ongoing campaign of awareness and education. The means of communication and the messages communicated will be sensitive to the gender dimension (Act. 1.1.2 Act. 1.5.1)	Base: 46% Indicator: Number of women involved in the waste sorting Target: Achieve at least 80% of women involved in sorting, waste minimization and awareness of the benefits of waste reduction.	UNDP / ME / MICLAT / CSOs / local communities	Year 1 Q2 - Year 5, Q4	288,625

2. A supply chain for the poultry waste is established and is operational in Sétif	Output 1.3 – The baseline analysis carried out during the preparatory phase has highlighted that collector-transporters would support the UNDP-GEF project as long as they did not suffer financial losses. It is likely that there are downstream transporters to job losses in the existing chain as explained in the Risk Log. The study of social impacts (Act. 1.3.2) that will be conducted in Sétif under the social and environmental management framework will take into consideration the Gender dimension of potential job losses and the formulation of appropriate rehabilitation plans (Act. 1.3 .3).	Base: 0% Indicator: Number of women involved in the poultry waste value chain Target: Reach at least 15% of the women involved in the collection and transport of poultry waste.	SOPTE (PPP), UNDP, ME, Wilaya	Year 1, Q 2 - Year 2, Q4	72,587
3. Reinforce the technical capacity of staff to operate and to maintain the waste sorting centre in Constantine.	Output 1.7 - Waste sorting in Constantine will need qualified personnel for its operation and maintenance. Technical expertise in these areas does not exist because this unit will be the first of its kind in Algeria. The project will invest in training and skills development using a Gender-sensitive approach (Act. 1.7.2).	Base: 0 Indicator: Number of women involved in the operation and maintenance of the sorting centre Target: Achieve at least 50% of women involved in the operation and maintenance of the sorting centre.	UNDP / SOPTE / AND (PPP)	1 Year, Q4 - Year 3, Q2	121,080
Outcome 2: The management of the value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste fertilizer and renewable energy, as well as management of the recycling of inorganic fraction of solid waste are planned and operational.					
4. Creating value through transformation of waste with the participation of recycling companies for equitable and inclusive social development.	Output 2.4 – Establishing an environment conducive to the participation of recycling companies in the integrated solid waste management value chain with appropriate financial arrangements and incentive mechanisms in place. This will be primarily through the identification of informal operators In Constantine (Act. 2.4.1) and then involving them in integrated waste management chain (Act. 2.4.2).	Base: 0 Indicator: Number of women in the waste processing business, recycling companies Target: Reach at least 25% of women who are active in the recycling companies.	UNDP / MI / ME / Private enterprises	Year 1 Q2 - Year 5, Q2	89,046

5. Create jobs based on gender equality in the waste transformation plants in Constantine and Sétif.	Output 2.6 & Output 2.8 – The solid waste transformation plants in Constantine and Sétif will create about 105 direct jobs. As for centralized sorting centre in Constantine, the solid waste transformation plants will be the first of its kind in Algeria. Consequently, these new positions will be accompanied by technical training. The creation of jobs and technical training will be sensitive to gender.	Base: 0; 0 Indicator: Number of women employed in the solid waste recovery units Constantine Sétif; Number of women who have received technical training Targets: Reach at least 40% of jobs created for women; 100% of women operators and technicians have received adequate training.	UNDP / SOPTE / AND (PPP)	1 Year, Q4 - Year 3, Q2	289,600
Outcome 3: Replicability of the municipal waste management model					
6. Formulate an integrated solid waste management replication model at regional level	Output 3.1 Activity 3.1.1: To enable women to contribute to this new circular economy arising from the integrated solid waste management, the project will support the technical capacity building of women. This contributes to improving the ability of women to participate as decision makers in developing projects of strategic importance in the integrated solid waste management value chain to further cross-sectoral policies. This is squarely aligned within the perspective of gender transformation in decision-making at all levels.	Base: 0, 0 Indicator: Percentage of women and men who participate in the surveys; Percentage of men and women with vocational training and university courses in the project area Targets: Reach at least 50% of women	UNDP / ME / MI / MICLAT	Year 1 Q2 - Year 5 Q4	55,425
Outcome 4: Lessons learned are captured and disseminated widely, and project monitoring and evaluation is carried out in order to ensure adaptive management and achievement of project objectives.					
7. Participation of women in knowledge management	Output 4.4 Activity 4.4.1: To ensure that SDG Goal 5: Gender equality is taken into consideration in the measurements of the project's impacts on the SDGs, and to ensure that the gender dimension is considered as a cross-cutting issue in other SDGs relevant to the project;	Base: 0, 0 Indicator: Percentage of women and men who participate in the surveys; Targets: Reach at least 50% of women	UNDP / ME / MI / MICLAT	Year 1 Q2 - Year 5 Q4	120,202

	Activity 4.4.2: Surveys that will be conducted annually to draw and share lessons from the project will ensure participation of women stakeholders. This will cover the gender dimension across all project activities and ensure that the perspectives of women and men (all stakeholder groups combined) are included in the adaptive management of the project. This activity will also collect data and disaggregate these by gender for the calculation of gender indicators that are the basis for monitoring and evaluation of project results;				

64. South-South and Triangular Cooperation: South-South Cooperation is planned in the project activities through exchange of experience and lessons learned. In particular, the project will establish a partnership with the project UNDP-GEF "Ethiopia Urban NAMA: Creating Opportunities for Municipalities to Produce and Operationalise Solid Waste Transformation (COMPOST) (GEFID 9048)," which has strong similarities with the project in Algeria. Exchanges will take place regarding the following activities that play an important role in both projects:[21]
    - Incentive mechanisms to support micro-enterprises and SMEs
    - market opportunities for the recycled fraction of nonorganic waste
    - The sustainable production of compost (NPK-enriched organic-based fertilizers) to replace chemical fertilizers
    - The construction of waste transformation facilities
    - The development of a voluntary carbon market
    - South-South Cooperation

65. The Japan International Cooperation Agency (JICA) has developed and hosts the Secretariat of the African Clean Cities Platform (ACCP) in collaboration with UNEP and UN-Habitat.[22] The ACCP is a platform to share knowledge and promote the Sustainable Development Goals (SDGs) on waste management in order that African countries achieve clean and healthy cities. To date, there are 35 countries and 64 cities in Africa that are member of the ACCP but neither Algeria nor any Algerian city is a member. During the PPG phase discussions took place with the coordinator of the ACCP to understand the steps required for the registration of Algeria (through ME) and the cities of Constantine and Sétif (through the Wali's office) as members of the ACCP.[23] Subsequently, contact was made with the head of JICA in Tunis that manages the Algeria portfolio to start membership procedures to APCC in the implementation phase.[24]

66. Sustainability: The introduction of the integrated waste management at the university will encourage not only research level in this area, but will also offer a new pool of qualified technical experts to facilitate the replication of similar projects. The inclusion of a research and analytical laboratory in Component 2, which will be connected to the local universities, will help optimize the

[21]During the formulation phase of the project document, the UNDP office in Algiers unit has established contact with his counterpart in Addis Ababa, Ethiopia. Exchanges took place on the sharing of knowledge and the results of the Compost Project in Ethiopia. The UNDP office in Algiers is also in contact with the coordinator of the project COMPOST.

[22] https://africancleancities.org/ - November 27, 2019.

[23] Discussion with Mr. Sei Kondo, Director, Environmental Management Team II, Environmental Management Group, Department of Global Environment, JICA between October 28 and November 19, 2019.

[24]Mr. Tsujii RYO (External Relations) Tel. +216 71786386 and +216 71 787 831. Information obtained from Mrs Stambouli logistics partner of JICA in Algiers.

waste transformation process, particularly regarding the process of processing and manufacturing fertilizers; this will contribute to the economic performance of future waste management projects, improving their economic feasibility and facilitating reproducibility. An awareness campaign and communication strategy will involve civil society so that job offers and the benefits of supply and demand for waste management can be made public. Such an approach will enhance public support and increase participation in integrated waste management opportunities.

67. Regarding financial sustainability, the PPP will be based on two sources of income: (1) the sale of organic-based fertilizers, and (2) the sale of electricity to the grid. Information received from SOPTE shows that the project will have a payback period of between 30 and 36 months depending on the sensitivity of input parameters. One of the significant parameters is the price of NPK-enriched organic-based fertilizers that will be produced by the UNDP-GEF project. The financial model proposes to sell these fertilizers between 10% and 30% less than the unit price of chemical fertilizers. In order to support the market acceptability of the NPK-enriched, organic-based fertilizers, the project will develop national Standards and Regulations for them, as well as their homologation in agricultural use. The homologation process will involve comparative studies between organic fertilizer and imported fertilizer. It should be noted that because of the many benefits of producing organic fertilizer from waste, the Government could consider introducing subsidies to help improve the sustainability of the business model. This is a risk mitigation measure proposed in the Risk Log in Annex I.

68. Scaling up: Through the Ministries of Industry (MI) and the Ministry of Environment (ME), the government appointed parastatal organizations (including SOPTE) to invest about USD 81.77 million to address the problems related to waste. This project is part of the contribution of SOPTE to this mandate, but it should be noted that it is also operating in several other cities, namely El Oued, Biskra and Algiers, which will facilitate replication of the project. In addition, the performance of this project relies of the performance of the PPP, which, if successful, will create an important precedent for other potential private sector partners to adopt this business model throughout the country.

69. Given the similarities between the ways all municipalities are governed, there is a great possibility to replicate the project. Component 3 is almost entirely focused on this issue in that it is concerned with the monitoring of project objectives and their degree of impact on the country's sustainable development goals. In addition, it also ensures the integration of integrated solid waste management (and associated technologies and approaches) at the tertiary level. This lever of sustainability is also a critical factor to support replication. A factory owned by Divindus will be upgraded to allow spare parts for the waste sorting and transformation facilities to be are manufactured locally and possibly with recycled materials, which will give additional impetus to future replication exercises.

70. The scaling up of project results will be done through a replication plan, with investment plans for the 48 Wilayas in Algeria. As mentioned in Section II, one of the main justifications for establishing a circular solid waste economy using private sector investments is to achieve the financial sustainability of municipal solid waste management. In so doing, the solid waste management will eventually become independent of public subsidies that are provided predominantly by central government. Hence, the scaling up of a circular solid waste economy will liberate public finances that can be invested instead in other social sectors and contribute towards the economic recovery in a post-COVID era. As shown in Table 2, significant numbers of green jobs can be expected to be created in scaling up the UNDP-GEF project to implement the SNGID.

V. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s): *objective 1*- End Poverty; Goal 8 Decent work and economic growth; Objective 12 - Sustainable production and consumption; Target 13 - Measures relating to the fight against climate change.				
This project will contribute to the following country outcome (UNDAF/CPD, RPD, GPD): UNDAF: Outcome 1: By 2021 the productive sectors implement growth strategies to enhance economic diversification and strengthen the capacity for economic integration and job creation. CPD (2016-2020): Result 1: growth and development are inclusive and sustainable, generating productive capacity to create jobs and livelihoods for the poor and marginalized communities. (Output 1: Sectoral strategies and implementation plans, particularly targeting the most vulnerable populations, are developed and implemented at the local level and upgraded strategies are developed and adopted; Indicator 1.1: Number of new jobs and income-generating activities created in targeted municipalities; 1.1 Reference: 0; Target 1.1: 100)				
	Objective and Outcome Indicators	**Baseline**	**Mid-term Target**	**End of Project Target**
Project Objective: *To promote an integrated and comprehensive solid waste management by fostering technology deployment, dissemination, and transfer in collaboration with private sector*.	**Mandatory** Indicator 1: # direct project beneficiaries disaggregated by gender (individual people)	0	500,000 (49.5% are women)	750,000 (49.5% are women)
	Mandatory Indicator 2: # indirect project beneficiaries disaggregated by gender (individual people)	0	750,000 (49.5% are women)	1,125,000 (49.5% are women)
	Mandatory GEF Core Indicators (Lifetime direct project GHG emissions mitigated, tCO_{2e}) 3:	0	55,568	357,279
Project component 1	Integrated management of household waste at source; minimization of final waste; and reduced transport distance			
Project Outcome 1 Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif municipalities, so as to reduce the volume of landfilled waste	Indicator 4: Number of households sensitized on integrated management of household waste.	200	1,300	5,600
	Indicator 5: Number of municipal Master Plans for the Wilayas of Constantine et de Sétif that propose innovative solutions, backed by sound techncial and socio-economic studies, for the integrated solid waste management	0	2	2
	Indicator 6: Quantity of poultry waste (tonne) secured by project through long-term contractual agreements	0	600	600
	Indicator 7: Total CAPEX (US$ million)) in the centralized waste sorting center in Constantine	0	4.5	4.5
Outputs to achieve Outcome 1	- *Output 1.1: Source sorting of waste at household level is supported by education and awareness campaign* - *Output 1.2: The municipal solid waste collection in Constantine and Sétif is designed, planned and implemented* - *Output 1.3: A supply chain for poultry waste from nearby farms is established and operational* - *Output 1.4: The waste sorting centre is planned and designed* - *Output 1.5: Eight waste collection points are operational* - *Output 1.6: Acquisition of two electric vehicles for municipal waste collection* - *Output 1.7: A waste sorting centre capable of processing 750 tonnes per day of MSW is installed, equipped and operational*			
Project component 2	Value creation through the transformation of solid waste and poultry waste into fertilizer and energy			

Outcome 2 Managing value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste into fertilizer and renewable energy, and the management of the recycling of the inorganic fraction of solid waste is planned and operational	Indicator 8: *Quantity of transformed products for each Wilaya in the form of fertilizers (tonnes/yr), recycled plastic (tonnes/yr) and electricity generated (MWh/yr)*	0 (for all products and in both locations)	Fertilizers: 26,400 (Setif) and 16,884 (Constantine) tonnes/yr Plastic: 14,377 tonnes/yr Electricity: 0 MWh/yr (O MWe installed)	Fertilizers: 26,400 (Setif) and 25,326 (Constantine) tonnes/yr Plastic: 21,565 tonnes/yr Electricity: 14,980 MWh/yr (2 MWe installed)
	Indicator 9: *Number of persons trained in the operation and maintenance of waste transformation facilities*	0	30 (10 women)	55 (25 women)
Outputs to achieve Outcome 2	- *Output 2.1: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed* - *Output 2.2: Capacity building for analysis and monitoring of the quality of outputs from transformation plant is planned and designed* - *Output 2.3: A legal and regulatory framework for the standardization of organic fertilizer is developed and implemented* - *Output 2.4: An enabling environment for the recycling companies is established, including the introduction of financial mechanisms and incentives for communities and individual participants involved* - *Output 2.5: Explore the possibilities of developing a waste management project for the voluntary carbon market* - *Output 2.6: An organic waste transformation plant for the production of fertilizers and renewable energy is equipped and operational* - *Output 2.7: An analysis, research and development centre for the monitoring and optimisation of the quality of outputs from transformation plant is equipped and operational* - *Output 2.8: Collection point and poultry waste processing plant in Sétif*			
Project component 3	Promotion of municipal model of integrated waste management at regional and national levels			
Outcome 3 Replicability of the municipal waste management model	Indicator 10: Number of Wilayas with replication and investment plans for scaling up project results	0	2	48
	Indicator 11: Number of persons with professional technical training on the integrated solid waste management approaches and technologies	55 (predominantly men)	150 (15% women)	350 (40% women)
	Indicator 12: Number of upgraded factory for manufacturing mechanical and spare parts	0	0	1
Outputs to achieve Outcome 3	- *Output 3.1: A mechanism for the replication of the project in 48 Wilayas is designed and implemented* - *Output 3.2: One factory for the production of spare parts is installed and equipped*			
Project component 4	Knowledge management and monitoring and evaluation			
Outcome 4 Lessons learned are captured and disseminated widely, and project monitoring and evaluation is carried out in order to ensure adaptive management and achievement of project objectives.	Indicator 13: Number of ETF, including MRV for solid waste management	0	0	1
	Indicator 14: Number of frameworks to measure the impacts of project on SDGs	0	0	1
	Indicator 15: Number of knowledge products (technical documents, scientific publications, videos, webinars, etc.) on best practices and lessons learned made available to key stakeholders for replication in other Wilayas	0	1	At least five (5)
Outputs to achieve Outcome 4	- *Output 4.1: Inception workshop* - *Output 4.2: Project monitoring* - *Output 4.3: Project evaluations*			

	- *Output 4.4: Knowledge management*

VI. MONITORING AND EVALUATION (M&E) PLAN

71. The project results, corresponding indicators and mid-term and end-of-project targets in the project results framework will be monitored annually and evaluated periodically during project implementation. If baseline data for some of the results indicators is not yet available, it will be collected during the first year of project implementation. The Monitoring Plan included in Annex details the roles, responsibilities, and frequency of monitoring project results.

72. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in UNDP POPP and UNDP Evaluation Policy. The UNDP Country Office is responsible for ensuring full compliance with all UNDP project monitoring, quality assurance, risk management, and evaluation requirements.

73. Additional mandatory GEF-specific M&E requirements will be undertaken in accordance with the GEF Monitoring Policy and the GEF Evaluation Policy and other relevant GEF policies . The costed M&E plan included below, and the Monitoring plan in Annex B, will guide the GEF-specific M&E activities to be undertaken by this project.

74. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report.

Additional GEF monitoring and reporting requirements:

75. Inception Workshop and Report: A project inception workshop will be held within 60 days of project CEO endorsement, with the aim to:
    a. Familiarize key stakeholders with the detailed project strategy and discuss any changes that may have taken place in the overall context since the project idea was initially conceptualized that may influence its strategy and implementation.
    b. Discuss the roles and responsibilities of the project team, including reporting lines, stakeholder engagement strategies and conflict resolution mechanisms.
    c. Review the results framework and monitoring plan.
    d. Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP and other stakeholders in project-level M&E.
    e. Update and review responsibilities for monitoring project strategies, including the risk log; SESP report, Social and Environmental Management Framework and other safeguard requirements; project grievance mechanisms; gender strategy; knowledge management strategy, and other relevant management strategies.
    f. Review financial reporting procedures and budget monitoring and other mandatory requirements and agree on the arrangements for the annual audit.
    g. Plan and schedule Project Board meetings and finalize the first-year annual work plan.
    h. Formally launch the Project.

76. GEF Project Implementation Report (PIR): The annual GEF PIR covering the reporting period July (previous year) to June (current year) will be completed for each year of project implementation. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR. The PIR submitted to the GEF will be shared with the Project Board. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

77. Knowledge management: The project team will ensure extraction and dissemination of lessons learned and good practices to enable adaptive management and upscaling or replication at local and global scales. Results will be disseminated to targeted audiences through relevant information sharing fora and networks. The project will contribute to scientific, policy-based and/or any other networks as appropriate (e.g. by providing content, and/or enabling participation of stakeholders/beneficiaries).

78. GEF and/or LDCF Core Indicators: The GEF Core indicators included at Annex L will be used to monitor global environmental benefits and will be updated for reporting to the GEF prior to MTR and TE. Note that the project team is responsible for updating the indicator status. The updated monitoring data should be shared with MTR/TE consultants prior to evaluation missions, so these can be used for subsequent ground truthing. The methodologies to be used in data collection have been defined by the GEF and are available on the GEF website. The required Protected Area Management Effectiveness Tracking Tool (METTs) have been prepared and the scores include in the GEF Core Indicators.

79. Independent Mid-term Review (MTR): The terms of reference, the review process and the final MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the UNDP Evaluation Resource Center (ERC)).

80. The evaluation will be 'independent, impartial and rigorous'. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project under review.

81. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

82. The final MTR report and MTR TOR will be publicly available in English and will be posted on the UNDP ERC by **31 October 2023**. A management response to MTR recommendations will be posted in the ERC within six weeks of the MTR report's completion.

83. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance for GEF-financed projects available is available on the UNDP Evaluation Resource Center.

84. The evaluation will be 'independent, impartial and rigorous'. The evaluators that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. Equally, the evaluators should not be in a position where there may be the possibility of future contracts regarding the project being evaluated.

85. The GEF Operational Focal Point and other stakeholders will be actively involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the BPPS/GEF Directorate.

86. The final TE report and TE TOR will be publicly available in English and posted on the UNDP ERC by **30 November 2025.** A management response to the TE recommendations will be posted to the ERC within six weeks of the TE report's completion.

87. Final Report: The project's terminal GEF PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

88. Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: To accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF. Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy and the GEF policy on public involvement.

89. Monitoring and evaluation requirements imposed by GEF M & E budget :

Monitoring and Evaluation Plan and Budget:		
GEF M&E requirements	**Indicative costs (US$)**	**Time frame**
Inception Workshop	US $ 5,000	Within 60 days of CEO endorsement of this project.
Inception Report	None	

		Within 90 days of CEO endorsement of this project.
M&E of GEF core indicators and project results framework	None Prorating the fees of the project manager	Annually and at mid-point and closure.
GEF Project Implementation Report (PIR)	None	Annually typically between June-August
Monitoring all risks **(Atlas risk register)**	None	On-going.
Monitoring of environmental and **Social safeguards**	None	On-going.
Monitoring of stakeholder engagement plan	None	On-going.
Monitoring of gender action plan	None	On-going.
Supervision missions	None	Annually
Independent Mid-term Review (MTR)	US $ 60,715	Completed by 31 October 2023
Independent Terminal Evaluation (TE)	US $ 85,235	Completed by 30 November 2025
TOTAL indicative COST	**US $ 150,950**	

VII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

Roles and responsibilities of the project's governance mechanism:

82. Implementing Partner: The Implementing Partner for this project is the Ministry of Environment (ME).

The Implementing Partner is the entity to which the UNDP Administrator has entrusted the implementation of UNDP assistance specified in this signed project document along with the assumption of full responsibility and accountability for the effective use of UNDP resources and the delivery of outputs, as set forth in this document.

83. The Implementing Partner is responsible for executing this project. Specific tasks include:
    - Project planning, coordination, management, monitoring, evaluation and reporting. This includes providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes and is aligned with national systems so that the data used and generated by the project supports national systems.
    - Risk management as outlined in this Project Document;
    - Procurement of goods and services, including human resources;
    - Financial management, including overseeing financial expenditures against project budgets;
    - Approving and signing the multiyear workplan;
    - Approving and signing the combined delivery report at the end of the year; and,
    - Signing the financial report or the funding authorization and certificate of expenditures.

84. Responsible Party: The Responsible Party (RP) will be SOPTE, which operates under the aegis of the Ministry of Industry (MI). It was agreed between the main project partners (UNDP, MAE, ME, AND, MI and SOPTE) that the project will have a chief national project director (NPD) and a deputy.[25] The Director of the project is proposed to be the Chief Executive Officer (CEO) of SOPTE in Constantine acting as the RP. The chief NPD will be from SOPTE, Constantine and the Deputy NPD from AND. The chief NPD will be the principal person authorizing expenditures and responsible for the implementation of the project and will inform the Deputy DNP of all project activities. It was also agreed that the Project Management Unit (PMU) will be housed at SOPTE, Constantine. Defined responsibilities include the following:

    - Provide guidance and direction to the team or project teams or responsible parties.
    - Coordinate operations with members of the board responsible of the project to ensure global leadership and preserve the integrity of the project.
    - Identify and get support and advice to the management, planning and control of the project.
    - Ensuring project administration.
    - Planning project activities and monitor progress against the results of the project and the approved annual work plan.
    - Mobilize personnel, goods and services, training and micro-capital grants for the activities of the initiative, including the drafting of terms of reference and work specifications, and supervision of all the work of contractors.
    - Monitor events determined in the plan and track project schedule, and update the plan as needed.
    - Manage requests for the provision of financial resources by UNDP in granting cash advances, direct payments or refunds through certificate of expenditure and funding authority.
    - Monitor financial resources and accounting to ensure accuracy and reliability of financial reporting.
    - Ensure the preparation and presentation of financial reports to UNDP quarterly.
    - Ensure the management and monitoring of project risks, including identification of emerging risks.
    - Ensure that lessons learned are captured during the implementation of the project, and adaptive management use in response.
    - Oversee the preparation of the annual work plan for the following year and update the Atlas Project Management module if external access is available.
    - Oversee the preparation of the project implementation the Review Report (REMP) of the Global Environment Facility (GEF) and submit the final report to the Board responsible for the project.
    - Ensure that annual work plans for the following year are formulated in a timely manner.

[25] Meeting of November 21, 2019 chaired by Athmane Mehadji (MFA) in the presence of representatives of UNDP, DREE, AND, MI and Söpte.

- Ensure that the mid-term review process is undertaken in accordance with the directives of UNDP and submit the final report of the mid-term to the Board responsible for the project.
- Ensure that the terminal review process is undertaken in accordance with the directives of UNDP and submit the final report of the review to the Board responsible for the project.

85. Project stakeholders and target groups: The project stakeholders and target groups are identified in Table 8 above with more details given in Annex G – Stakeholder Engagement Plan. The involvement of the key stakeholders in project management is shown below in Figure 5.

86. UNDP: UNDP is accountable to the GEF for the implementation of this project. This includes oversight of project execution to ensure that the project is being carried out in accordance with agreed standards and provisions. UNDP is responsible for delivering GEF project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation. UNDP is also responsible for the Project Assurance role of the Project Board/Steering Committee.

Description of Proposed Arrangements

The project is proposing the following arrangements for limited, targeted UNDP execution support.

UNDP was requested by the Government of Algeria to provide HR, procurement and finance execution support services to be covered by the project budget. The support services will mainly consist in:

- HR: Hiring the Project Management Unit and managing relevant HR benefits and entitlements until the end of the contracts
- Procurement: hiring international/national consultants working under the project and purchase key services (including conferencing services, venues for events, etc.) from private sector according to UNDP's rules and regulations.
- Finance and Treasury: Payments and Banking services on behalf of the project

The above is proposed in view of the below context:

- The Government does not permit the use of UNDP's capacity assessment tool (HACT) in Algeria, therefore a HACT micro assessment of implementing partners is not possible, and no cash transfers can be issued to national entities. Instead, UNDP is relied upon to perform finance/treasury for all NIM projects in Algeria (regardless of the source of financing), following strict application of UNDP rules and regulations. For this project, the same approach is proposed, and we are confident to exercise a close controlling and management of the entrusted resources while the National Partner is fully in charge of strategic and programmatic decisions.
- The Government relies on UNDP's rules and regulations for project execution support services for higher transparency and efficiency, given heavy national procedures
- HR: The Government relies on UNDP to hire PMU staff (on UNDP salary scales) so that the project can attract the necessary high-level expertise which the projects would not otherwise be able to contract on the lower GVT salary scales
- Procurement/Finance: All International consultants and international companies accept contracts in hard currency only, such as US dollar or EUR, which the Government's regulations do not permit, and so the Government can neither issue nor pay these contracts.

Project organisation structure:

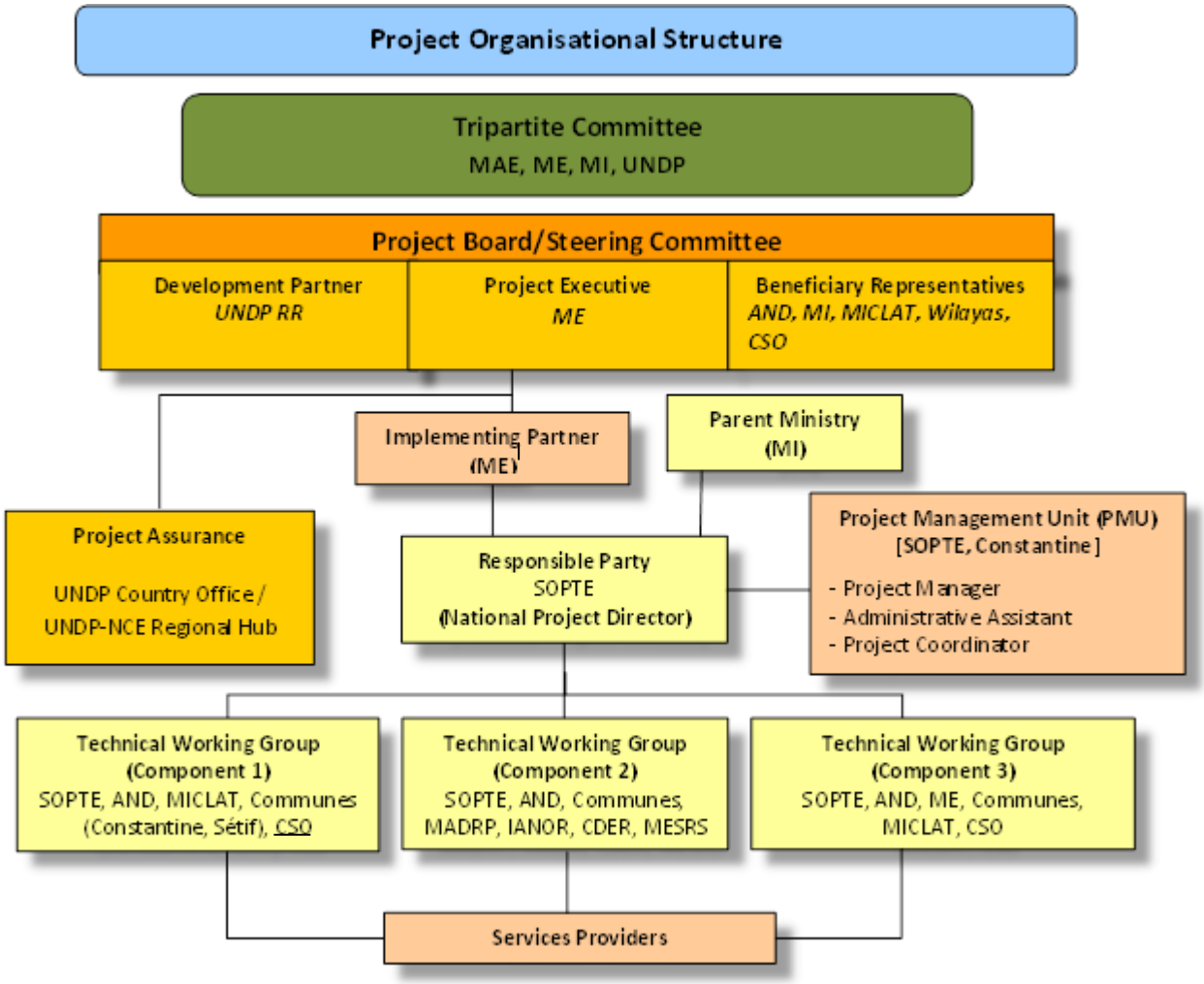


Figure 5: Organizational structure of the project.

87. Tripartite committee: The Tripartite Committee is composed of representatives of the Ministry of Foreign Affairs (MFA), ME, MI and UNDP. This committee meets as needed and when necessary decision-making on corrective measures and / or general and strategic directions. The Tripartite Committee will meet at least once a year.

88. Project Board: The Project Board (also called Project Steering Committee) is responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

89. In case consensus cannot be reached within the Board, the UNDP Resident Representative (or their designate) will mediate to find consensus and, if this cannot be found, will take the final decision to ensure project implementation is not unduly delayed.

90. Specific responsibilities of the Project Board include:
    - Provide overall guidance and direction to the project, ensuring it remains within any specified constraints;
    - Address project issues as raised by the project manager;
    - Provide guidance on new project risks, and agree on possible mitigation and management actions to address specific risks;

- Agree on project manager's tolerances as required, within the parameters set by UNDP-GEF, and provide direction and advice for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP-GEF;
- Ensure coordination between various donor and government-funded projects and programmes;
- Ensure coordination with various government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Review the project progress, assess performance, and appraise the Annual Work Plan for the following year;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Review combined delivery reports prior to certification by the implementing partner;
- Provide direction and recommendations to ensure that the agreed deliverables are produced satisfactorily according to plans;
- Address project-level grievances;
- Approve the project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up;
- Ensure highest levels of transparency and take all measures to avoid any real or perceived conflicts of interest.

91. The composition of the Project Board must include the following roles:

    a. Project Executive: Is an individual who represents ownership of the project and chairs the Project Board. The Executive is normally the national counterpart for nationally implemented projects. The Project Executive will be a representative of the ME.

    b. Beneficiary Representative(s): Individuals or groups representing the interests of those who will ultimately benefit from the project. Their primary function within the board is to ensure the realization of project results from the perspective of project beneficiaries. Often civil society representative(s) can fulfil this role. The Beneficiary representative (s) is/are: representatives of AND, MI and MICLAT, representatives of the Wilayas (e.g. Department of Environment of the Wilaya), as well as NGOs and civil society organizations (CSOs).

    c. Development Partner(s): The Development Partner is the UNDP Resident Representative (RR). Baseline analysis has shown that there are no development partners other than UNDP that are active in the solid waste management sector. This situation will be re-evaluated during the inception phase of project implementation and any relevant development partner(s) will then be invited to be part of the PSC.

    d. Project Assurance: UNDP performs the quality assurance and supports the Project Board and Project Management Unit by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed, and conflict of interest issues are monitored and addressed. The Project Board cannot delegate any of its quality assurance responsibilities to the Project Manager. UNDP provides a three – tier oversight services involving the UNDP Country Offices and UNDP at regional and headquarters levels. Project assurance is totally independent of project execution.

92. Project Manager: The Project Manager has the authority to run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Project Board. The Implementing Partner appoints the Project Manager, who must be different from the Implementing Partner's representative on the Project Board.

93. The Project Manager's primary responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost. The Project Manager will inform the Project Board and the Project Assurance roles of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted. The Project Manager will remain on contract until the Terminal Evaluation report and the corresponding management response have been finalized and the required tasks for operational closure and transfer of assets are fully completed.

94. Specific responsibilities include:

- Manage the overall conduct of the project.
- Plan the activities of the project and monitor progress against the approved workplan.
- Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors' work.
- Monitor events as determined in the project monitoring plan, and update the plan as required.
- Provide support for completion of assessments required by UNDP, spot checks and audits.
- Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form.
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports.
- Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results.
- Ensure that changes are controlled and problems addressed.
- Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities.
- Prepare and submit financial reports to UNDP on a quarterly basis.
- Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation.
- Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required.
- Prepare the inception report no later than one month after the inception workshop.
- Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR.
- Prepare the GEF PIR;
- Assess major and minor amendments to the project within the parameters set by UNDP-GEF;
- Monitor implementation plans including the gender action plan, stakeholder engagement plan, and any environmental and social management plans;
- Monitor and track progress against the GEF Core indicators.
- Support the Mid-term review and Terminal Evaluation process.

95. Project Assistant (administrative and finance) : The Project Assistant is responsible for tasks such as administration, management and technical support of the project to the Project Manager and project Coordinator, based on the needs of their needs. The provision of formal project support services is optional. It is necessary to separate the roles of project support and project assurance to preserve the independence of Project Assurance Team. The tasks of the project assistant will be:

Administrative Service delivery:

- Establish and maintain project files.
- Collect data on the project.
- Update plans.
- Administer the quality control process.

Management of project documentation:

- Carry out verification of project revisions.
- Establish procedures for document control.
- Compile, copy and distribute all project reports

Financial management, monitoring and reporting:

- Assist in the financial management tasks under the responsibility of the project manager.
- Provide support for using the Atlas system for monitoring and reporting.

96. Project Coordinator (Technical): Given that the project will be implemented at different pollitical (national and municipal) and geographical (Algiers, Constantine and Setif), the Project Coordinator will be responsible for providing technical support in project

implementation, as well as carrying out coordination of all stakeholders for the efficient and effective use of resources to implement project activities in Constantine and Setif. So, the PC will provide technical support to the PM, but also have the responsibility to manage stakeholder engagement and ensure a gender-responsive project delivery. The Project Coordinator will have the following specific responsibilities:

- Coordinate all activities in project sites in Constantine and Setif by providing technical support
- ✓ Draft terms of reference for the recruitment of services providers (individuals and companies)
- ✓ Monitor the quality of the deliverables of consultants from technical perspective
- ✓ Provide technical support to the PSC when required
- ✓ Supporting SOPTE and AND in choice of waste transformation technologies to be in compliance with the ESMF and ESMP
- Provide direct assistance to the PM in relation to all project M&E activities, including among others the following:
- ✓ Monitor project progress and participate in the production of progress reports ensuring that they meet the necessary reporting requirements and standards;
- ✓ Ensure project's M&E meets the requirements of the Government, the UNDP Country Office, and UNDP-GEF; develop project-specific M&E tools as necessary;
- ✓ Oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results;
- ✓ Oversee/develop/coordinate the implementation of the stakeholder engagement plan;
- ✓ Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results;
- ✓ Facilitate mid-term and terminal evaluations of the project; including management responses;
- ✓ Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products;
- ✓ Support project site M&E and learning missions;
- ✓ Visit project sites as and when required to appraise project progress on the ground and validate written progress reports.
- Support the PM with managing Social and Environmental Safeguards, including:
- ✓ Monitor progress in development/implementation of the project ESMP/ESMF ensuring that UNDPs SES policy is fully met and the reporting requirements are fulfilled;
- ✓ Oversee/develop/coordinate implementation of all safeguard related plans;
- ✓ Ensure social and environmental grievances are managed effectively and transparently;
- ✓ Review the SESP annually, and update and revise corresponding risk log; mitigation/management plans as necessary;
- ✓ Ensure full disclosure with concerned stakeholders;
- ✓ Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation;
- Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met and the reporting requirements are fulfilled;
- Oversee/develop/coordinate implementation of all gender-related work;
- Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary;
- Ensure reporting, monitoring and evaluation fully address the gender issues of the project;
- Review and update the Stakeholder Engagement Plan;
- Coordinate the implementation of knowledge management outputs of the project;
- Coordinate and oversee the implementation of public awareness activities across all project components;
- Facilitate the design and maintenance of the project website/webpages and ensure it is up-to-date and dynamic;
- Facilitate learning and sharing of knowledge and experiences relevant to the project;

The Project Coordinator will be recruited based on the following qualifications

- A Master's degree, preferably in the field of community development or natural resource / environmental management, especially in solid waste management;
- At least five years of relevant work experience preferably in a project management setting involving multi-lateral/ international funding agency. Previous experience with UN project will be a definite asset;
- Significant experience in collating, analyzing and writing up results for reporting purposes;
- Very good knowledge of results-based management and project cycle management, particularly with regards to M&E approach and methods. Formal training in RBM/ PCM will be a definite asset;
- Previous experience in developing and implementing environmental and social safeguard strategies for organizations or projects

- Knowledge and working experience of the application of gender mainstreaming in international projects;
- Very good inter-personal skills;
- Proficiency in computer application and information technology.
- Excellent language skills in French and Arabic (writing, speaking and reading) and intermediate level in English.

97. **Project extensions**: The UNDP Resident Representative and the UNDP-GEF Executive Coordinator must approve all project extension requests. Note that all extensions incur costs and the GEF project budget cannot be increased. A single extension may be granted on an exceptional basis and only if the following conditions are met: one extension only for a project for a maximum of six months; the project management costs during the extension period must remain within the originally approved amount, and any increase in PMC costs will be covered by non-GEF resources; the UNDP Country Office oversight costs in excess of the CO's Agency fee specified in the DOA during the extension period must be covered by non-GEF resources.

VIII. FINANCIAL PLANNING AND MANAGEMENT

98. The total cost of the project amounts to USD *30,080,436*. This project is funded by a GEF grant for the amount of USD 4,416,210 and a cash co-financing of USD 250,000 to be administered by UNDP and USD 40,000,000 in parallel financing (USD 6,666,667 in-kind; USD 33,333,333 equity from the Joint Venture). UNDP, as the GEF Implementing Agency, is responsible for the oversight of the GEF resources and the cash co-financing transferred to UNDP bank account only.

99. Confirmed Co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. Note that all project activities included in the project results framework that will be delivered by co-financing partners (even if the funds do not pass through UNDP accounts) must comply with UNDP's social and environmental standards. Co-financing will be used for the following project activities/outputs:

Co-financing source	**Co-financing type**	**Co-financing amount (USD)**	**Planned Co-financing Activities/Outputs**	**Risks**	**Risk Mitigation Measures**
Ministry of Environment	In-kind	6,666,667	*Output 1.1: Source sorting of waste at household level is supported by education and awareness campaign* *Output 1.2: The municipal solid waste collection in Constantine and Sétif is designed, planned and implemented* *Output 1.3: A supply chain for poultry waste from nearby farms is established and operational* *Output 1.5: Eight waste collection points are operational* *Output 2.2: Capacity building for analysis and monitoring of the quality of outputs from transformation plant is planned and designed* *Output 2.3: A legal and regulatory framework for the standardization of organic fertilizer is*	Low level of cooperation between institutions at national and local levels, and weak coordination and information exchange mechanism between ministries; ME faces changing priorities leading to lower than expected to no co-financing for the UNDP-GEF project; The risks are low mainly	The Project Coordinator will ensure the implementation, as well as the effectiveness of the communications management strategy for the project and parallel interventions (according to SEP in Annex G);

			developed and implemented *Output 2.4: An enabling environment for the recycling companies is established, including the introduction of financial mechanisms and incentives for communities and individual participants involved* *Output 2.5: Explore the possibilities of developing a waste management project for the voluntary carbon market* *Output 3.1: A mechanism for the replication of the project in 48 Wilayas is designed and implemented*	because municipal solid waste management is a very high priority of the government, and because the co-financing will arise from recurrent budget and staff time. This means that the co-financing will not put increased pressure on ME's budgeting.	
Ministry of Environment	Cash	8,333,333	*Output 1.3: A supply chain for poultry waste from nearby farms is established and operational* *Output 1.4: The waste sorting centre is planned and designed* *Output 1.5: Eight waste collection points are operational* *Output 1.6: Acquisition of two electric vehicles for municipal waste collection* *Output 1.7: A waste sorting centre capable of processing 750 tonnes per day of MSW is installed, equipped and operational* *Output 2.1: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed* *Output 2.2: Capacity building for analysis and monitoring of the quality of outputs from transformation plant is planned and designed* *Output 2.3: A legal and regulatory framework for*	This funding will be made available through the AND that is the technical arm of ME for waste management. The AND is one of the partners in the Joint Venture that will invest in the project. The risk is the low level of cooperation between institutions at national and local levels, and weak coordination and information exchange mechanism between ministries; ME and AND face changing	The Project Coordinator will ensure the implementation, as well as the effectiveness of the communications management strategy for the project and parallel interventions (according to SEP in Annex G);

			the standardization of organic fertilizer is developed and implemented *Output 2.4: An enabling environment for the recycling companies is established, including the introduction of financial mechanisms and incentives for communities and individual participants involved* *Output 2.5: Explore the possibilities of developing a waste management project for the voluntary carbon market* *Output 2.6: An organic waste transformation plant for the production of fertilizers and renewable energy is equipped and operational* *Output 2.7: An analysis, research and development centre for the monitoring and optimisation of the quality of outputs from transformation plant is equipped and operational* *Output 2.8: Collection point and poultry waste processing plant in Sétif* *Output 3.2: One factory for the production of spare parts is installed and equipped*	priorities leading to lower than expected to no co-financing for the UNDP-GEF project; The risks are low mainly because municipal solid waste management is a very high priority of the government and the AND mandate to demonstrate commercially viable pathways for the sustainable management of solid waste in Algeria.	
Ministry of Industry	Cash	15,000,000	Same outputs as above – i.e. Ministry of Environment (Cash)	As shown by the letters of co-financing, the Ministry of Industry (through DIVINDUS) has repeated its commitment to co-financing for this project since 2016. So this risk is low. The main risk is the inability to	As discussed in the UNDP Risk Log (Annex I), the shortfall in co-financing should be borne by MI until additional partner co-financing is mustered.

				receive total cash (debt and equity) co-financing to the tune of USD 38 million on behalf of the PPP, of which the Divindus co-financing is but a part.	
SOPTE	Cash	10,000,000	Same outputs as above – i.e. Ministry of Environment (Cash) and Ministry of Industry (Cash)	SOPTE is part of the PPP (Joint Venture) and the lead implementing institution. The main risk arising here is ensuring that the current Canadian partners will also invest in the project and to also carry out technology transfer. As discussed in Annex I, this risk in moderate.	SOPTE is working in close collaboration with the Canadian partners to ensure that they follow up on investments and technology transfer. As discussed in the UNDP Risk Register (Annex I), the shortfall in co-financing should be borne by MI until additional partner co-financing is mustered. Also, the new partners will also need to carry out technology transfer since waste transformation equipment is not available in Algeria.

100. Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project manager to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board.

101. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the BPPS/GEF team to ensure accurate reporting to the GEF: a) Budget re-allocations among components in the project with amounts involving

10% of the total project grant or more; b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

102. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

103. Audit: The project will be audited as per UNDP Financial Regulations and Rules and applicable audit policies. Audit cycle and process must be discussed during the Inception workshop.

104. Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. All costs incurred to close the project must be included in the project closure budget and reported as final project commitments presented to the Project Board during the final project review. The only costs a project may incur following the final project review are those included in the project closure budget..

105. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. **Operational closure must happen with 3 months of posting the TE report to the UNDP ERC.** The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

106. Transfer or disposal of assets: In consultation with the Implementing Partner and other parties of the project, UNDP is responsible for deciding on the transfer or other disposal of assets. Transfer or disposal of assets is recommended to be reviewed and endorsed by the project board following UNDP rules and regulations. Assets may be transferred to the government for project activities managed by a national institution at any time during the life of a project. In all cases of transfer, a transfer document must be prepared and kept on file. The transfer should be done before Project management Unit (team) complete their assignments.

107. Financial completion (closure): The project will be financially closed when the following conditions have been met: a) the project is operationally completed or has been cancelled; b) the Implementing Partner has reported all financial transactions to UNDP; c) UNDP has closed the accounts for the project; d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

108. The project will be financially completed **within 6 months of operational closure or after the date of cancellation.** Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

109. Refund to GEF: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Directorate in New York. No action is required at CO level on the actual refund from UNDP project to the GEF Trustee.

IX. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Award ID:	00124003	Atlas Output Project ID:	00119072
Atlas Proposal or Award Title:	Integrated Waste Management		
Atlas Business Unit	DZA10		
Atlas Primary Output Project Title	AIM-WELL: Algeria Integrated Management of Waste Energy at the Local Level		
UNDP-GEF PIMS No.	6163		
Implementing Partner	Ministry of Environment		

Atlas Activity (GEF Component)	Atlas Implementing Agent (Responsible Party, IP, or UNDP)	Atlas Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Account Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note
OUTCOME 1 Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif municipalities, so as to reduce the volume of landfilled waste.	**ME**	**62000**	**GEF**	71200	International Consultants	8,000	41,600	28,000	0	0	77,600	1
				71300	Local Consultants	37,600	73,600	25,600	4,000	1,600	142,400	2
				71400	Contractual Services - Individ	14,088	14,088	14,088	14,088	14,088	70,440	3
				72200	Equipment and Furniture		968,627	0	0	0	968,627	4
				72500	Office supplies	1,700	1,800	1,800	1,661	1,600	8,561	5
				71600	Travel	17,035	31,394	14,183	1,375	1,125	65,112	6
				74200	Audio Visual & Print Prod Costs	15,500	17,500	18,700	17,000	17,000	85,700	7
				75700	Workshops and Meetings	38,500	62,500	61,600	30,000	20,000	212,600	8
				72100	Contractual Services - Comp	36,800	36,800	0	0	0	73,600	9
					Sub-total GEF Outcome 1	**169,223**	**1,247,909**	**163,971**	**68,124**	**55,413**	**1,704,640**	
	UNDP	**4000**	**UNDP**	71300	Local Consultants	12,000	12,000	9,600	12,800	9,600	56,000	10
				71600	Travel	8,410	14,570	16,370	17,245	12,770	69,365	11
				75700	Workshops and Meetings	2,000	2,000		1,000		5,000	12
					Sub-total UNDP Outcome 1	**22,410**	**28,570**	**25,970**	**31,045**	**22,370**	**130,365**	

					Total Outcome 1	**191,633**	**1,276,479**	**189,941**	**99,169**	**77,783**	**1,835,005**	
OUTCOME 2: Managing value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste into fertilizer and renewable energy, and the management of the recycling of the inorganic fraction of solid waste is planned and operational.	**ME**	**6200**	**GEF**	71200	International Consultants	30,400	51,200	20,000	0	8,000	109,600	13
				71300	Local Consultants	34,000	70,000	18,000	18,000	12,000	152,000	14
				71400	Contractual Services - Individ	13,050	13,050	13,050	13,050	13,050	65,250	15
				72200	Equipment and Furniture	217,026	542,566	325,540	0	0	1,085,132	16
				71600	Travel	40,698	56,619	12,410	7,700	8,806	126.233	17
				72500	Office supplies	2,500	3,000	3,000	3,000	3,000	14,500	18
				74200	Audio Visual & Print Prod Costs	1,000	1,000	0	0	0	2,000	19
				75700	Workshops and Meetings	68,000	74,000	16,500	16,000	14,000	188,500	20
				72100	Contractual Services - Companies	94,400	115,400	21,000	21,000	21,000	272,800	21
					Sub-total GEF Outcome 2	**501,074**	**926,835**	**429,500**	**78,750**	**79,856**	**2,016,015**	
	UNDP	**4000**	**UNDP**	71300	Local Consultants	8,000	6,000	2,400	6,000	2,400	24,800	22
				71600	Travel				1,550		1,550	23
				74200	Audio Visual & Print Prod Costs	1,515	2,200		1,500		5,215	24
					Sub-total UNDP Outcome 2	**9,515**	**8,200**	**2,400**	**9,050**	**2,400**	**31,565**	
					Total Outcome 2	**510,589**	**935,035**	**431,900**	**87,800**	**82,256**	**2,047,580**	
OUTCOME 3: Replicability of the municipal waste management model.	**ME**	**6200**	**GEF**	71200	International Consultants	0	0	0	0	27,200	27,200	25
				71300	Local Consultants	12,800	32,000	10,000	0	7,600	62,400	26
				71400	Contractual Services - Individ	8,206	8,206	8,206	8,206	8,206	41,030	27
				71600	Travel	4,375	5,750	2,500	0	10,833	23,458	28
				74200	Audio Visual & Print Prod Costs	200	800	500	0	0	1,500	29
				75700	Workshops and Meetings	1,000	2,500	2,000	0	0	5,500	30
					Sub-total GEF Outcome 3	**26,581**	**49,256**	**23,206**	**8,206**	**53,839**	**161,088**	
		4000	**UNDP**	71200	International Consultants					29,600	29,600	31
				71300	Local Consultants	0	0	0	0	8,800	8,800	32

	UNDP			71600	Travel	0	0	0	0	7,983	7,983	33
					Sub-total UNDP Outcome 3	**0**	**0**	**0**	**0**	**46,383**	**46,383**	
					Total Outcome 3	**26,581**	**49,256**	**23,206**	**8,206**	**100,222**	**207,471**	
OUTCOME 4: Lessons learned are captured and disseminated widely, and project monitoring and evaluation is carried out in order to ensure adaptive management and achievement of project objectives.	**ME**	**6200**	**GEF**	71200	International Consultants	6,400	9,600	28,000	0	40,000	84,000	34
				71300	Local Consultants	8,000	10,800	21,200	7,200	27,200	74,400	35
				71400	Contractual Services - Individ	17,111	18,361	21,360	16,110	22,111	95,053	36
				72500	Office supplies	1,000	2,300	2,300	2,300	1,278	9,178	37
				71600	Travel	3,936	2,250	20,615	1,900	27,135	55,836	38
				75700	Workshops and Meetings	6,000	0	0	0	0	6,000	39
					Sub-total GEF Outcome 4	**42,447**	**43,311**	**93,475**	**27,510**	**117,724**	**324,467**	
	UNDP	**4000**	**UNDP**	71300	Local Consultants	4,000	6,000	7,800	4,800	7,800	30,400	40
				71600	Travel	0	0	1,726	1,726	1,375	4,827	41
				74200	Printing and Publication Costs	0	490	490	490	490	1,960	42
				75700	Workshops and Meetings	500	1,000	1,000	1,000	1,000	4,500	43
					Sub-total UNDP Outcome 4	**4,500**	**7,490**	**11,016**	**8,016**	**10,665**	**41,687**	
					Total Outcome 4	**46,947**	**50,801**	**104,491**	**35,526**	**128,389**	**366,154**	
PROJECT MANAGEMENT UNIT	**ME**	**62000**	**GEF**	71400	Contractual Services - Individ	37,900	37,900	37,900	37,900	37,900	189,500	44
				72800	Information Technology Equipmt	5,500					5,500	45
				74100	Audit (Professional Services)	3,000	3,000	3,000	3,000	3,000	15,000	46
					Total PMU GEF	**46,400**	**40,900**	**40,900**	**40,900**	**40,900**	**210,000**	
					GEF PROJECT TOTAL	**785,725**	**2,308,211**	**751,052**	**223,490**	**347,732**	**4,416,210**	
					UNDP PROJECT TOTAL	**36,425**	**44,260**	**39,386**	**48,111**	**81,818**	**250,000**	
PROJECT TOTAL						**822,150**	**2,352,471**	**790,438**	**271,601**	**429,550**	**4,666,210**	

Summary of Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF	785,725	2,308,211	751,052	223,491	347,732	**4,416,210**
UNDP	36,425	44,260	39,385	48,110	81,820	**250,000**
Government (ME, in-kind)	1,333,334	1,333,333	1,333,334	1,333,333	1,333,333	**6,666,667**
Government (ME, equity)*	2,083,333	4,166,666	333,333	1,416,667	333,333	**8,333,333**
Government (MI, equity)*	3,750,000	7,500,000	600,000	2,550,000	600,000	**15,000,000**
SOPTE (equity)	2,500,000	5,000,000	400,000	1,700,000	400,000	**10,000,000**
TOTAL	**10,488,817**	**20,352,470**	**3,457,104**	**7,271,601**	**3,096,218**	**44,666,210**

* The Ministry of Environment provided $15 million co-financing in total, split between 44% in-kind ($6.6 million) and 56 % investment ($8.3 million).

OUTCOME 1	
1	International consultants will be used except when the expertise is not available in Algeria. For Outcome 1, international expertise will be required during the first 3 years of the project. For good operation and ensure proper maintenance of the centralized sorting centre (output 1.7), international expertise will be required for capacity building to the tune of USD 8,000 per year over the first 3 years; an international consultant is expected to model and optimize waste collection under activity 1.2.2 of the project (USD 12,800 in year 2); finally international expertise will be used development new Masterplans under activity 1.2.3 (Year 2: USD 20,800; year 3: USD20,000). Output 1.7: USD 8000 * 3 = USD 24,000 1.2.2: USD 12,800 1.2.3: USD 20,800 + USD 20,000 = USD 40,800 Total: USD 77,600
2	The project will favour local expertise as its overall contribution to capacity building for the sustainability of the implementation of a circular economy arising from the integrated solid waste management in Algeria. A national consultant will be required for the activities of the output 1.1 as follows: USD 11,600 (1 year); USD 20,400 (year 2); USD 1,600 (year 3); USD 4,000 (year 4); USD 1,600 (year 5). For activities 1.3.2 and 1.4.3, expertise in impact studies and ESMP will be required as follows: USD 10,000 (year 1) and $ 12,000 (year 2). To support the international expert to develop Masterplans for the Wilayas of Setif and Constantine (1.2.3 activity), a national consultant is budgeted as follows: USD 8,000 (year 2 and year 3 each). To develop an optimized waste collection process (activity 1.2.1, 1.2.2 and 1.5.2), a budget of USD 10 000 (1 year), USD 12,000 (year 2) and USD 10,000 (year 3) is provided. For capacity building under the activity 1.7.2, a national consultant will support an international consultant with USD 6,000 per year over the first three years of the project. In year 2, budgets of USD 6,000, USD 6,000 and USD 3,200 are allocated for activities 1.3.3, 1.6.1, and 1.6.2, respectively. 1.1: USD 11,600 + USD 20,400 + USD 1,600 + USD 4,000 + USD 1,600 = USD 39,200 1.3.2 and 1.4.3: USD 10,000 + USD 12,000 = USD 22,000 1.2.3: USD 8,000 * 2 = USD 16,000 1.2.1, 1.2.2 and 1.5.2: USD 10,000 + USD 12,000 + USD 10,000 = USD 32,000 1.7.2 = USD 6,000 * 3 = USD 18,000 1.3.3 = USD 6,000

	1.6.1 = USD 6,000 1.6.2 = USD 3,200 Total: USD 142,400
3	Outcome 1 covers USD 48,750 and USD 21,690 of the salaries of the project manager and coordinator, respectively. On an annual basis, this amounts to USD 14,088 for these two positions. USD 48,750 + USD 21,690 = USD 70,440
4	In the second year, USD 968,627 is budgeted for the purchase of two electric trucks under output 1.6 of the project. 1.6: USD 968,627 Total: USD 968,627 This item is not an ordinary vehicle, nor equipment. It is the purchase of 2 Motiv electric garbage trucks. The use of these trucks will lead to 16.6tCO2/per. For more details, please refer to the description of output 1.6 in the ProDoc.
5	In order to provide for the proper implementation of the results of Outcome 1, the PMU will have an annual budget for the operation of the project secretariat. In this case, annual estimates are in the range of USD 1,700; USD 1,800; USD 1,800; USD 1,661; USD 1,600 over the 5 years of the project. USD 1,700 + USD 1,800 + USD 1,800 + USD 1,661 + USD 1,600 = USD 8,561
6	Annual budgets are to cover the costs of travel and accommodation of national and international consultants (in support to Notes 1 and 2). The largest amounts are in the first two years (year 1 USD 17.035; year 2: 31.394) because the majority of Outcome 1 activities are related to waste sorting centre that will be operational during the second year of implementation. The budgets for the following three years were USD 14.183 (year 3); USD 1,375 (year 4) and USD 1,125 (year 5). Outcome 1: USD 17,035 + USD 31,394 + USD 14,183 + USD 1,375 + USD 1,125 = USD 65,112
7	The bulk of the budget for the implementation of activities 1.1.2 and 1.5.1 which aim to educate households and the public in sorting through audio-visual materials and pamphlets. The corresponding budgets will be USD 13,000 (year 1) and $ 17,000 per year for the last 4 years of the project. For the printing needs of other outputs, the budgets will be as follows: USD 2,500 (1 year); $ 500 (year 2) and USD 1,700 (year 3). 1.1.2: USD 13,000 (year 1) + USD 2,500 = USD 15,500 1.5.1: USD 17,000 (year 2) + USD 500 = USD 17,500 1.5.1: USD 17,000 (year 3) + USD 1,700 = USD 18,700 1.5.1: USD 17,000 (year 4) 1.5.1: USD 17,000 (year 5) Total: USD 85,700
8	To raise awareness (Note 7), sensitization workshops will be carried out for households (output 1.1) and the general public (output 1.5) which will cost USD 16,500 (1 year); USD 38,000 (year 2); USD 36,600 (year 3); USD 30,000 (year 4) and USD 20,000 (year 5). To strengthen technical and human capacity to operate the sorting centre, an annual budget of $ 20,000 per year is expected over the first 3 years of the project. For the purpose of other outputs related to work meetings and workshops, the estimated budget will be as follows: USD 2,000 (1 year); USD 4,500 (year 2); USD 5,000 (year 3). 1.1 and 1.5: USD 16,500 + USD 38,000 + USD 36,600 + USD 30,000 + USD 20,000 = USD 141,100 USD 20,000 * 3 = USD 60,000 USD 2,000 + USD 4,500 + USD 5,000 = USD 11,500 Total: USD 141,100 + USD 60,000 + USD 11,500 = USD 212,600

9	It is expected under output 1.4 (i) to formulate a site develop plan and (ii) a data sheet for the sorting centre in Constantine. For these activities it is planned to hire the services of a company with all the industrial design and planning expertise. This service will be made at 50% in the first two years each; which amounts to USD 36,800 per year (USD 24,000 for the first activity and $ 12,800 for the second). 1.4: YEAR 1 (USD 24,000 + USD 12,800 = USD 36,800 YEAR 2 USD 36,800 TOTAL: USD 36,800 + USD 36,800 = USD 73,600
10	UNDP funding will be used to complement the GEF funds for social and environmental impact studies and to develop social and environmental management plans for poultry waste transformation in Sétif (Activity 1.3.2) and the sorting centre in Constantine (1.4.3). Although the impacts and the management plan studies will be formulated during the first 2 years of implementation, the national expertise will be required to monitor the implementation of social and environmental management plans. The budgets for the benefit of these national consultants: USD 12,000 (year 1 and 2); USD 9,600 (year 3); USD 12,800 (year 4); USD 9,600 (year 5). The highest amount in year 4 responsibility of the increased capacity of the sorting plant of 500 tons / day to 750 tons / day. Year 1 and 2: USD 12,000 + USD 12,000 = USD 24,000 Year 3: USD 9,600 Year 4: USD 12,800 Year 5: USD 9,600 Total: USD 56,000
11	UNDP will cover the costs of travel and accommodation in Constantine and Sétif for national expertise required for activities 1.3.2 and 1.4.3 related to studies of social and environmental impacts and plans for social and environmental managements. South-South cooperation is planned under activity 1.2.3 that will entail travels to attend ACCF yearly meetings and study tours. Annual budgets will be as follows: USD 8,410 (1 year); USD 14,570 (year 2); USD 16,370 (year 3); USD 17.245 (year 4); USD 12,7770 (year 5). These amounts reflect the budget allocations for national expertise (Note 10). USD 8,410 + USD 14,570 + USD 16,370 + USD 17,245 + USD 12,770 = USD 69,365
12	Engagement sessions will stakeholders who will be potentially affected by the waste recovery and transformation plants in both wilayas. For that USD 2,000 (year 1 and year 2) and USD 1,000 (year 4) are provided.
OUTCOME 2	
13	International expertise will be required for the strengthening of human and technical capacity to operate and do maintenance of poultry waste processing units in Sétif (2.6.2 activity) and solid waste transformation in Constantine (2.8.2 activity). The budgets are: USD 24,000 (year 1) and $ 19,200 (year 2). To strengthen human and technical capacity to operate and carry out maintenance of laboratory equipment (2.7.2 activity), the budgets are: USD 6,400 (year 1) and $ 8,000 (year 2 and year 5). For output 2.4 (business participation in recycling) a budget of USD 24,000 is expected in year 2. An international consultant with a budget of USD 20,000 will be required in year 3 to develop a voluntary market mechanism carbon (output 2.5). 2.6.2. and 2.8.2: USD 24,000 + USD 19,200 = USD 43,200 2.7.2: USD 6,400 + USD 8,000 + USD 8,000 = 2.4: USD 24,000 2.5: USD 20,000 Total: USD 109,600
14	National expertise that will be used for activities 1.3.2 and 1.4.3, as well as for activity 2.1.3 (impact study and plan social and environmental management). The annual budget will be USD 2,000 for each of Year 1 and 2; To identify the laboratory equipment, identify expertise gaps (output 2.2) and do the technical capacity (output 2.7) on budget is USD 14,000 (1 year); USD 26,000 (year 2); USD 6,000 (year 4) and USD 6,000 (year 5); For output 2.3 (standards and regulation of fertilizers) budgets will be USD 6,000 (year 1) and USD 16,000 (year 2); For output 2.4 (business participation in recycling) budgets will be USD 14,000 (year 2); USD 6,000 (year 3); USD 12,000 (year 4) and USD 6,000 (year 5); To develop a voluntary carbon market

	mechanism (output 2.5) a national consultant (USD 12.000 Year 3) support the international consultant; To strengthen human and technical capacity to operate and do maintenance of poultry waste processing units in Sétif (activity 2.6.2) and solid waste transformation in Constantine (2.8.2 activity) budgets for national expertise will be USD 12,000 (year 1) and $ 12,000 (year 2) 1.3.2 and 1.4.3 and 2.1.3: USD 2,000 + USD 2,000 = USD 4,000 2.2 and 2.7: USD 14,000 + USD 26,000 + USD 6,000 + USD 6,000 = USD 52,000 2.3: USD 6,000 + USD 16,000 = USD 22,000 2.4: USD 14,000 + USD 6,000 + USD 12,000 + USD 6,000 = USD 38,000 2.5: USD 12,000 2.6.2 and 2.8.2: USD 24,000 Total: USD 152,000
15	Outcome 2 covers USD 50,250 and USD 15,000 of the salaries of the project manager and coordinator. On an annual basis, this amounts to USD 13,050 for both positions. USD 50,250 + USD 15,000 = USD 65,250/5 = USD 13,050
16	The project will equip the laboratory unit of SOPTE in Oued Smar, (Algiers) to ensure control of the quality and composition of fertilizers to be produced by the project. For that a phased approach will be used to acquire the necessary equipment as follows: USD 217.026 (1 year); USD 542.566 (year 2) and USD 325.540 (year 3). During the implementation of the project, a decision will be taken during the second year of implementation it will be necessary to purchase all of the equipment at the end of Year 2, and budget adjustments made accordingly.
17	Annual budgets are to cover the costs of travel and accommodation of national and international consultants (in line with notes 13 and 14). As for Outcome 1, the largest amounts are in the first two years (year 1 USD 40.698; year 2: USD 56.619) because the majority of activities is related to the construction of waste transformation units that will be operational during the second year of implementation. The budgets for the following three years are USD 12,410 (year 3); USD 7,700 (year 4) and USD 8,806 (year 5). USD 40,698 + USD 56,619 + USD 12,410 + USD 7,700 +USD 8,806 = USD 126,233
18	In order to support the successful implementation of the result 2 activities, the PMU will have an annual budget for operating the project secretariat. In this case, annual estimates will be around USD 2,500 (year 1) and $ 3,000 per year (year 2 to 5). USD 2,500 + USD 3,000 * 4 = USD 14,500
19	A budget of USD 1,000 is expected in each of year 1 and 2 of implementation to cover costs related to developments printing standards (activity 2.3.1) for fertilizers to be produced by the project.
20	It is expected to organise workshops and training workshops. The bulk of the budget is allocated to this second function especially for outputs 2.6 and 2.8. For the 2.6 output, annual budgets are: USD 50,000 (1 year); USD 50,000 (year 2); USD 5,000 per year (year 3-5). For the 2.8 output, annual budgets are: USD 15,000 (1 year); USD 15,000 (year 2); USD 5,000 per year (year 3-5). For other activities, the annual amounts will be: USD 3,000 (1 year); USD 9,000 (year 2); USD 6,500 (year 3); USD 6,000 (year 4); USD 4,000 (year 5). 2.6: USD 50,000 + USD 50,000 + USD 5,000 * 3 = USD 115,000 2.8: USD 15,000 + USD 15,000 + USD 5,000 * 3 = USD 45,000 USD 3,000 + USD 9,000 + USD 6,500 + USD 6,000 + USD 4,000 = USD 28,500 Total: 188,500
21	The justification for this item is similar to Note 9. In the project, it is intended (i) to develop a site development plan and (ii) a data sheet for a waste transformation unit in Constantine (which will be complementary to the centralized sorting centre - output 1.4). For these activities it is planned to hire the services of a company with all the industrial design and planning skills. This service will be split at 50% in the first two years each; which amounts to USD 94,400 per year (USD 67,200 for the first activity and $ 27,200 for the second). For technical regulations on the conformity of fertilizers (activity 2.3.2) and the homologation of fertilizers (activity 2.3.3) there will be a need for analyses of fertilizers by an accredited laboratory and field trials in different agro-ecological zones country. Beyond the requirements of compliance, certification is required before putting an agricultural product on the market. Field tests are essential to demonstrate their economic benefits (on yields and costs avoided), environmental (soil quality) and public health. These activities coincide with the production of fertilizers by the project and an estimate of $ 21,000 per year is budgeted as from Year 2.

	1.4: USD 94,400 per year (USD 67,200 + USD27,200) 2.3.2 and 2.3.3: USD 94,400 + USD 21,000 = USD 115,400 (Year 2) USD 21,000 (year 3, 4,5)
22	UNDP will support the implementation of activity 2.1.3 (impact studies and social management plan and environmental) to complement GEF funding as follows: USD 8,000 (1 year); USD 6,000 (year 2); USD 2,400 (year 3); USD 6,000 (year 4); USD 2,400 (year 5). The increase in year 4 comes from additional studies for the implementation of the power generation unit in the 5th year of the project. Total: USD 24,800
23	Travel expenses and accommodation are already covered under the activity 1.4.3. Only the incremental aspect (Note 23) of $ 1,550 in year 4 which is budgeted.
24	The printing costs for the activity 2.1.3 will be USD 1,515 (1 year); USD 2,200 (year 2) and USD 1,500 (year 4). Total: USD 5,215
OUTCOME 3	
25	International expertise will be required for activity 3.1.2 for the formulation of a scaling up plan. A budget of USD 27,200 is planned in year 5.
26	National expertise for the implementation of output 3.1 activities will be as follows: USD 4,800 (1 year); USD 16,000 (year 2); USD 10,000 (year 3); USD 7,600 (year 5). For the 3.2.1 activity, the budget for national expertise will be USD 8,000 (year 1) and $ 16,000 (year 2). 3.1: TOTAL: USD 38,400 3.2.1: TOTAL: USD 24,000
27	Outcome 3 covers USD 23,030 salary of the project manager and USD 18,800 salary of the project coordinator. On an annual basis, this amounts to USD 8,206. Total: USD 41,030/5 = USD 8,206
28	Annual budgets are to cover the costs of travel and accommodation of national and international consultants (in support to notes 25 and 26). The largest amounts are in the first two years and year five (1 year: USD 4,375; year 2: USD 5,750; 5 years: USD 10,833), which corresponds with the budgets for international consultants. The remaining budget is USD 2,500 (year 3). Total: USD 23,458
29	The printing costs are budgeted as follows: $ 200 (year 1); $ 800 (year 2); USD500 (year 3).
30	Working meetings or workshops are planned during the first three years mainly to promote vocational training in approaches and integrated solid waste management technologies (3.1.1 activity). Allocations are as such: USD 1,000 (1 year); USD 2,500 (year 2); USD 2,000 (year 3).
31	UNDP funding will be used to complement GEF financing for developing replication plans for 48 Wilayas. For this, an international consultant will be supported under Activity 3.1.4 in the final year to the tune of USD 29,600
32	As a complement to GEF funds, local consultant support for developing the replication plan in Year 5 as a complement to note 32 (USD 8,800).
33	Travel expenses and accommodation of the consultants (notes 32 and 33) associated with the formulation of replication plan under activity 3.1.2 in year 5 at USD 7,983.
OUTCOME 4	
34	International expertise will be required for outputs 4.3 and 4.4. For output 4.3, international consultants will be required for MTR (USD 28,000 in year 3) and TE (USD 40,000 in year 5) of the project. For activity 4.4.1, an international consultant will develop the framework for measuring the SDG impacts of the project (1 year: USD 6,400; year 2: USD 9,600); Total: USD 84,000
35	National expertise will be required to support the work of the international consultants at note 35. For the MTR and TE, the budgets for national consultants are USD 14,000 (year 3) and USD 20,000 (year 5), respectively. For output 4.4, the national consultant support will be USD 8,000 (year 1); USD 10,800 (year 2); USD 7,200 (year 3); USD 7,200 (year 4); USD 7,200 (year 5). 4.4: TOTAL: USD 40,400 Total: USD 14,000 + USD 20,000 + USD 40,400 = USD 74,400

36	Output 4.2 covers part of the salaries of the project manager (USD 38,500) and project coordinator (USD 40,500). The project manager will also follow up the annual lessons learned exercise (activity 4.4.2) to the tune of USD 3,210.50 per year (over 5 years). The combination brings total budget to: USD 95,053. USD 38,500 + USD 40,500 = USD 79,000/5 = USD 15,800 USD 15,800 + USD 3,210.5 = USD 19,010.5 USD19,010.5 * 5 = USD 95,052.5
37	In order to support the successful implementation of the activities of the outcome 4, the PMU will have an annual budget for the operating the project secretariat. In this case, annual estimates will be around USD 1,000; USD 2,300; USD 2,300; USD 2,300; USD 1,278 for the 5 years of the project. Total: USD 9,178
38	Travel expenses are related to conducting the MTR (USD 18,715 - year 3)) and TE (USD 25,235 - year 5). Additional budget is allocated for activities 4.4.1 and 4.4.2 as follows: USD 3,936 (year 1); USD 2,250 (year 2); USD 1,900 (each of year 3, year 4 and year 5). Total = USD 55,836
39	Working meetings or workshops are planned in the first year for the Inception Workshop (USD 5,000) and for the development of a framework for measuring the SDG impacts of the project (USD 1,000).
40	UNDP will cover the costs of local consultants for (1) translating the MTR (USD 3,000 in year 3) and TE (USD 3,000 in year 5) in English/French; (2) tracking SDG progress (USD 4,800 in years 3, 4 and 5); (3) developing project website (USD 4,000 – year 1, and USD 6,000 – year 2). Year 1: USD 4,000 Year 2: USD 6,000 Year 3: USD 3,000 + USD 4,800 = USD 7,800 Year 4: USD 4,800 Year 5: USD 3,000 + USD 4,800 = USD 7,800 Total: USD 30,400
41	Travel expenses and accommodation of the national consultant that will track and monitor the SDG Impacts (activity 4.1.1) of the project are planned for the last three years of the project (in addition to monitoring in year 1 and 2 with GEF funding) as follows: USD 1,726 (year 3); USD 1,725 (year 4) and USD 1,375 (year 5). Total: USD 4,827
42	A sum of USD 490 per year is expected in years 2-5 of the project to print reports on the SDG impacts of project investments. Total: USD 490 * 4 = USD 1,960
43	A total budget of $ 4,500 is provided for the needs of meetings and workshops (USD 500 - 1 year; USD 1,000 in each of year 2 to year 5).
PROJECT MANAGEMENT COST	
44	A sum of USD 37,900 is allocated annually for the salary of the Administrative Assistant (USD 24,832/yr) and the Project Coordinator (USD 13,068/yr). This represents the total salary for the former and about 40.7% for the latter.
45	The Project Management Unit comprises three staff. For project management, each staff will be provided with a computer costing USD 1,500 each (i.e. total of USD 4,500). Also, the PMU will be provided with a printer costing USD 1,000. Hence, the total is USD 5,500 in Year 1.
46	An independent financial audit of the project will take place for USD 3,000 per year.

X. LEGAL CONTEXT

110. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Algeria and UNDP, signed on 20 July 1977. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

111. This project will be implemented by the Ministry of Environment and Renewable Energies ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

112. The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

XI. RISK MANAGEMENT

113. Consistent with the Article III of the SBAA [or the Supplemental Provisions to the Project Document], the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:
    a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
    b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan.

114. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

115. The Implementing Partner agrees to undertake all reasonable efforts to ensure that no UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml

116. The Implementing Partner acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the Implementing Partner, and each of its responsible parties, their respective sub-recipients and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
    (a) In the implementation of the activities under this Project Document, the Implementing Partner, and each of its sub-parties referred to above, shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").

    (b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, the Implementing Partner, and each of its sub-parties referred to above, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment.

117. a) In the performance of the activities under this Project Document, the Implementing Partner shall (with respect to its own activities), and shall require from its sub-parties referred to in paragraph 4 (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative

mechanisms. In line with this, the Implementing Partner will and will require that such sub-parties will take all appropriate measures to:

i. Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;
ii. Offer employees and associated personnel training on prevention and response to SH and SEA, where the Implementing Partner and its sub-parties referred to in paragraph 4 have not put in place its own training regarding the prevention of SH and SEA, the Implementing Partner and its sub-parties may use the training material available at UNDP;
iii. Report and monitor allegations of SH and SEA of which the Implementing Partner and its sub-parties referred to in paragraph 4 have been informed or have otherwise become aware, and status thereof;
iv. Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
v. Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. The Implementing Partner shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties referred to in paragraph 4 with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the Implementing Partner shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.

b) The Implementing Partner shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the Implementing Partner, and each of its sub-parties referred to in paragraph 4, to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.

118. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (http://www.undp.org/ses) and related Accountability Mechanism (http://www.undp.org/secu-srm).

119. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

120. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

121. The Implementing Partner will take appropriate steps to prevent misuse of funds, fraud or corruption, by its officials, consultants, responsible parties, subcontractors and sub-recipients in implementing the project or using UNDP funds. The Implementing Partner will ensure that its financial management, anti-corruption and anti-fraud policies are in place and enforced for all funding received from or through UNDP.

122. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to the Implementing Partner: (a) UNDP Policy on Fraud and other Corrupt Practices and (b) UNDP Office of Audit and Investigations Investigation Guidelines. The Implementing Partner agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.

123. In the event that an investigation is required, UNDP has the obligation to conduct investigations relating to any aspect of UNDP projects and programmes in accordance with UNDP's regulations, rules, policies and procedures. The Implementing Partner shall provide its full cooperation, including making available personnel, relevant documentation, and granting access to the Implementing Partner's (and its consultants', responsible parties', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with the Implementing Partner to find a solution.

124. The signatories to this Project Document will promptly inform one another in case of any incidence of inappropriate use of funds, or credible allegation of fraud or corruption with due confidentiality.

    Where the Implementing Partner becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, the Implementing Partner will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). The Implementing Partner shall provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.

125. UNDP shall be entitled to a refund from the Implementing Partner of any funds provided that have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document. Such amount may be deducted by UNDP from any payment due to the Implementing Partner under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail the Implementing Partner's obligations under this Project Document.

    Where such funds have not been refunded to UNDP, the Implementing Partner agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to the Implementing Partner for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud or corruption, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

    Note: The term "Project Document" as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

126. Each contract issued by the Implementing Partner in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from the Implementing Partner shall cooperate with any and all investigations and post-payment audits.

127. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.

128. The Implementing Partner shall ensure that all of its obligations set forth under this section entitled "Risk Management" are passed on to each responsible party, subcontractor and sub-recipient and that all the clauses under this section entitled "Risk Management Standard Clauses" are included, mutatis mutandis, in all sub-contracts or sub-agreements entered into further to this Project Document.

XII. MANDATORY ANNEXES

A. Multi Year Work Plan
B. Monitoring Plan
C. Overview of Technical Consultancies
D. Terms of Reference for Key Project Staff
E. Social and Environmental Screening Procedure
F. Gender Analysis and Gender Action Plan (provided separately)
G. Stakeholder Engagement Plan (provided separately)
H. Environmental and Social Management Framework (provided separately)
I. UNDP Risk Register
J. GHG emissions reduction associated with the proposed project
K. Additional Maps of Project map and Geospatial Coordinates of project sites - Constantive and Sétif
L. GEF Core indicators
M. GEF7 Taxonomy
N. Procurement plan
O. Co-finance Letters (provided separately)

Annex A: Multi Year Work Plan

Output	Yr (2023-2024°				Yr 2(2024-2025)				Yr 3(2025-2026)				Yr 4(2026-2027)				Yr 5(2027-2028)			
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Outcome 1 : Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif municipalities, so as to reduce the volume of landfilled waste																				
Output 1.1: Source sorting of waste at household level is supported by education and awareness campaign																				
Output 1.2: The municipal solid waste collection in Constantine and Sétif is designed, planned and implemented																				
Output 1.3: A supply chain for poultry waste from nearby farms is established and operational																				
Output 1.4: The waste sorting centre is planned and designed																				
Output 1.5: Eight waste collection points are operational																				
Output 1.6: Acquisition of two electric vehicles for municipal waste collection																				
Output 1.7: A waste sorting centre capable of processing 750 tonnes per day of MSW is installed, equipped and operational																				
Outcome 2 : Managing value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste into fertilizer and renewable energy, and the management of the recycling of the inorganic fraction of solid waste is planned and operational																				
Output 2.1: A waste processing plant that will convert the organic fraction of the waste into fertilizer and renewable energy is designed																				
Output 2.2: Capacity building for analysis and monitoring of the quality of outputs from transformation plant is planned and designed																				
Output 2.3: A legal and regulatory framework for the standardization of organic fertilizer is developed and implemented																				
Output 2.4: An enabling environment for the recycling companies is established, including the introduction of financial mechanisms and incentives for communities and individual participants involved																				
Output 2.5: Explore the possibilities of developing a waste management project for the voluntary carbon market																				
Output 2.6: An organic waste transformation plant for the production of fertilizers and renewable energy is equipped and operational																				
Output 2.7: An analysis, research and development centre for the monitoring and optimisation of the quality of outputs from transformation plant is equipped and operational																				
Output 2.8: Collection point and poultry waste processing plant in Sétif																				
Outcome 3: Replicability of the municipal waste management model																				
Output 3.1: A mechanism for the replication of the project in 48 Wilayas is designed and implemented																				
Output 3.2: One factory for the production of spare parts is installed and equipped																				

Monitoring and Evaluation																				
Monitoring of social and environmental risks																				
Monitoring of Stakeholder Engagement Plan																				
Monitoring of Gender Action Plan																				
Mid-term GEF Core Indicators update																				
Terminal GEF Core Indicators update																				
Audits																				
Mid-term review																				
Terminal evaluation																				

Annex B: Monitoring Plan:

This Monitoring Plan and the M&E Plan and Budget in Section VI of this project document will both guide monitoring and evaluation at the project level for the duration of project implementation.

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
Project Objective: ***To promote an integrated and comprehensive solid waste management by fostering technology deployment, dissemination, and transfer in collaboration with private sector.***	***Indicator 1: # direct project beneficiaries disaggregated by gender (individual people)***	*MT – 500,000 (49.5% women)* *EoP – 750,000 (49.5% are women)*	*Number of direct beneficiaries relates to the number of persons whose household waste will be collected, sorted and transformed into value added products directly by the UNDP-GEF project. The MT target relates to a total amount of waste of 500 t/day, and the EoP target to 750 t/day.*	*Statistical records of the Department of Environment of the Wilaya;* *Records of waste transported to the centralized sorting facility (PPP)*	Annually Reported in DO tab of the GEF PIR	*Department of Environment of the Wilaya;* *PPP (SOPTE);*	*Field visits and field surveys carried out during lessons learned monitoring, and MTR and TE*	*<u>Risks</u>:* *Political and institutional instability prevents the minimum governance structures to be put in place for project implementation; Little interest shown by the Wilayas in the project; low level coordination between project partners; technical capacity of PPP not sufficient to achieve the ambitious objectives of the project; the value-added products through transformation of solid waste are not competitive on the market and thus undermining the business model; the PPP does not manage to acquire land in Setif, and collector-transporters do not sign agreements for the sale of poultry waste to the PPP.* *<u>Assumptions</u>:* *Technology transfer is successful; continued political and institutional commitment from all project*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								stakeholders; the price-quality factor of transformed products favors their market acceptance
	Indicator 2: # indirect project beneficiaries disaggregated by gender (individual people)	*MT – 750,000 (49.5% women)* *EoP – 1,125,000 (49.5% are women)*	*All investments have a multiplier effect in the economy to account for indirect impacts. A factor of 1.5 has been applied to the number of direct beneficiaries*	*Statistical records of the Ministry of Finance*	Same as above	*Project Coordinator from the Ministry of Finance*	*Statistical records*	*Same as above*
	Indicator 3: Lifetime direct project GHG emissions mitigated, tCO_{2e}	*MT – 55,568* *EoP – 357,279*	*The cumulative emission reductions accruing during the 5-year project lifetime from the different ways calculated in Annex J.*	*Statistical records of the Department of Environment of the Wilaya;* *Records of waste transported to the centralized sorting facility (PPP);* *Records of quantities of value-added products and recovered products by the PPP;* *Emission factors from the ME or the IPCC;* *Records of distances travelled, and fuel (or*	Annually in PIR, and updated at MTR and TE (data are collected on a daily, weekly and monthly basis)	*Project Coordinator (under the oversight of the PM)*	*MRV mechanism developed under Activity 3.1.1*	*Same as above* *<u>Additional assumption</u>:* *The time schedule for GHG accounting is as given in Annex J.*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
				electricity) consumed to collect and dispose of waste at transformation facilities; *Quantity of poultry fertilizers that are transported to different markets in the south of Algeria*				
Project Outcome 1 **Progressive upstream sorting by households of fermentable (organic fraction) and dry waste (inorganic fraction) with separate collection, and communal sorting planned and established in Constantine and Sétif municipalities, so as to reduce the volume of landfilled waste**	***Indicator 4: Number of households sensitized on integrated management of household waste***	*MT – 1,300* *EoP – 5,600*	*These are the number of households that the project will reach directly through its on-the-ground outreach and sensitization activities under Outputs 1.1 and 1.5*	*Records of the Department of Environment of the Wilaya;* Records kept by the PMU;	Quarterly (In PMU reports for the PSC)	Project Coordinator	Project surveys and field visits carried out for capturing lessons learned, MTR and TE	Risks: same as above; prevailing socio-cultural norms prevent the participation of households in an alternative means of managing household waste Assumptions: The Department of Environment of the Wilayas are actively involved in outreach and sensitization activities; the communication strategy developed by the project under Output 1.1 is adequate to galvanize the support of households in integrated solid waste management;
	Indicator 5: Number of municipal Master Plans for the Wilayas of Constantine et	*MT – 2* *EoP - 2*	According to the NPMHSW, each Wilaya needs to have a Masterplan for waste	*Project records (PMU)*	Quarterly reports to the PSC	Project Coordinator	Approved Masterplans	*Risks:* *Low level buy-in from the Wilayas* *Assumptions:*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	de Sétif that propose innovative solutions, backed by sound technical and socio-economic studies, for the integrated solid waste management		management. Either it does not exist or it does not cover the circular economy model. The project will support the Wilayas of Constantine and Setif to develop Masterplans that are aligned with the project objectives.					*Adequate levels of coordination between all project stakeholders allows integrated waste management scenarios acceptable to all; a whole view of the solid waste value chain is considered*
	Indicator 6: Quantity of poultry waste (tonne) secured by project through long-term contractual agreements	*MT – 600* *EoP - 600*	*The quantity of poultry waste that will be transformed into fertilizers in Setif. The inputs will be bought through contractual agreements with licensed operators.*	*Purchase records of the PPP*	Monthly (and aggregated for quarterly report to the PSC)	Project Coordinator	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*<u>Risks</u>:* *The PPP does not grant access to its purchase records to verify quantity of poultry waste purchased* *<u>Assumption</u>:* *Project is able to secure long-term contracts between licensed collector-transporter of poultry waste and the PPP*
	Indicator 7: Total investments	*MT – 4.5* *EoP – 4.5*	*The CAPEX is the metric used to demonstrate*	*PPP investment plans and financial records*	Annually	Project Coordinator	Financial records of PPP	*<u>Risks</u>:*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
	(CAPEX, US$ million)) in the centralized waste sorting center in Constantine		*that the sorting facility has been built, as well as accounting for the co-financing by the PPP.*		(captured in quarterly reports to the PSC)		submitted to authorities	*The ESMP and RAP developed by project is not implemented by the PPP creating delays in project implementation; the PPP does not materialize as indicated in Annex I;* *<u>Assumptions</u>:* *Technology transfer is successful and technical capacity building on operation and maintenance of facility is adequate; the solid waste transformation facilities are equipped and operational*
Project Outcome 2 **Managing value creation resulting from the conversion of the organic fraction of household solid waste and poultry waste into fertilizer and renewable energy, and the management of the recycling of the inorganic fraction of solid waste is**	***Indicator 8 : Quantity of transformed products for each Wilaya in the form of fertilizers (tonnes/yr), recycled plastic (tonnes/yr) and electricity generated (MWh/yr)***	*MT -* *Fertilizers: 26,400 (Setif) and 16,884 (Constantine) tonnes/yr* *Plastic: 14,377 tonnes/yr* *Electricity: 0 MWh/yr* *EoP –* *Fertilizers: 26,400 (Setif) and 25,326 (Constantine) tonnes/yr*	*These indicators measure the quantities of the three main value added products of the project and which also result in GHG emission reductions.*	Records of the solid waste transformation plants in Setif and Constantine (PPP)	Monthly (reported to PSC in quarterly reports)	Project Coordinator	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*<u>Risks</u>:* *The ESMP and RAP developed by project is not implemented by the PPP creating delays in project implementation; the PPP does not materialize as indicated in Annex I; The PPP does not grant access to its records* *<u>Assumptions</u>:* *Strong coordination and communication between all project partners; Technology transfer is successful and technical capacity building on operation and maintenance of facility is adequate; the solid waste transformation facilities are equipped and operational; market outlets*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
planned and operational		*Plastic: 21,565 tonnes/yr* *Electricity: 14,980 MWh/yr*						*for value added products are secured*
	Indicator 9: Number of persons trained in the operation and maintenance of waste transformation facilities	*MT – 30 (10 women)* *EoP – 55 (25 women)*	*The project is a first-of-its-kind in Algeria and the technologies will be novel. Hence, the project will provide training to SOPTE and AND staff on the operation and maintenance of waste transformation plants.*	*Project records*	*Quarterly*	*Project Coordinator*	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*Risks: same as for Indicator 8* *Assumptions: same as for Indicator 8 + Canadian partners are fully involved in transfer of knowledge and technical expertise alongside technology transfer*
Project Outcome 3 **Replicability of the municipal waste management model**	***Indicator 10: Number of Wilayas with replication and investment plans for scaling up project results***	*MT – 2* *EoP - 48*	The project proposes to replicate the model for integrated municipal solid waste management in all 48 Wilayas in Algeria. A replication plan, which will effectively be a	Project records maintained by the PMU	Annually	Project Coordinator	Validated Replication Plan	Risks: Social risks related to loss of jobs and revenues in the baseline situations are not adequately addressed leading to social discontents and upheaval; environmental risks posed by new waste transformation technologies not adequately addressed leading to new environmental impacts; Wilayas favor different technologies making coordination

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
			Masterplan, will be developed for each Wilaya. The replication plan will detail the most appropriate technologies for integrated waste management in each Wilaya as well as the investment plan.					between them more difficult from the perspectives of lessons learned Assumptions: Strong adhesion of all Wilayas to an integrated solid waste management approach; adequate stakeholder coordination at all levels to support a scaling up of the circular economy
	Indicator 11: Number of persons with professional technical training on the integrated solid waste management approaches and technologies	*MT – 150 (15% women)* *EoP – 350 (40% women)*	*For the sustainability of the project, and related to scaling up efforts, the project will support technical capacity building in partnership with tertiary institutions.*	*Enrollment records of tertiary institutions*	*Semester / Annual* *(depending on course duration)*	*Project Coordinator*	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*Risks:* *Courses offered have a theoretical orientation and does not allow participants to acquire technical and engineering skills; prevailing social norms prevent women from entering the engineering fields, especially in the waste sector* *Assumptions:* *Increasing willingness of women to work in technical areas, especially within the solid waste sector; the project is successful thereby providing market prospects*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								for job creation in the circular economy
	Indicator 12: Number of upgraded factory for manufacturing mechanical and spare parts	*MT – 0* *EoP - 1*	*Using co-financing, SOPTE/Divindus will invest in upgrading an existing factory to produce mechanical parts.*	*Investment records of Divindus*	*Annually*	*Project Coordinator*	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*<u>Risks</u>:* *The PPP is not successful for a host of risks that are mentioned above, such as failures in technology transfer, inadequate management of social and environmental risks, lack of market outlets or product competitiveness, among others* *<u>Assumptions</u>:* *Level go SOPTE co-financing is sufficient to make required investments; cost of fabrication is competitive*
Project Outcome 4 **Lessons learned are captured and disseminated, and project monitoring and evaluation**	***Indicator 13: Number of ETF, including MRV for solid waste management***	*MT – 0* *EoP - 1*	*Using GEF grant funding, the project will establish a ETF for enhanced transparency in accounting for GHG emission reductions*	Project records maintained by the PMU	*Annually*	*Project Coordinator*	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*<u>Risks</u>: The PPP is not in place as expected, implying that there are no investments in waste transformation infrastructure to give emissions reductions. Also, the ESMF may not be implemented leading to same outcome.* *<u>Assumptions</u>:* *There is continued political support for climate change mitigation under the Paris*

Monitoring	Indicators	Targets	Description of indicators and targets	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Risks/Assumptions
								Agreement, especially through the implementation of its Article 13.
	Indicator 14: Number of frameworks to measure the impacts of project on SDGs	*MT – 0* *EoP - 1*	*A framework will be developed to quantify the impacts of project investments and TA on the achievement of the SDGs*	Project records maintained by the PMU	*Annually*	*Project Coordinator*	*Annual surveys carried out by project to capture lessons learned, MTR and TE*	*<u>Risk</u>:* *Same as for Indicator 13* *<u>Assumption</u>:* *High level of political commitment regarding reporting on national and regional achievements on SDGs.*
	Indicator 15: Number of knowledge products (technical documents, scientific publications, videos, webinars, etc.) on best practices and lessons learned made available to key stakeholders for replication in other Wilayas	*MT – 0* *EoP – at least 5*	*Knowledge products will be developed based on lessons learned reports and independent evaluations in the form of policy briefs, replication plan, lessons learned reports and publications etc ..*	Project records maintained by the PMU; knowledge products	*Annually*	*Project Coordinator*	*Publication and dissemination of knowledge products*	*<u>Risk</u>:* *The PPP is not in place as expected, implying that there are no investments in waste transformation infrastructure to give tangible results. Also, the ESMF may not be implemented leading to same outcome.* *<u>Assumption</u>:* *Successful implementation of the project as designed leads to tangible results that are captured and disseminated broadly.*

Annex C: Overview of Technical Consultancies

Consultant	Time Input	Tasks, Inputs and Outputs
For Project Management / Monitoring & Evaluation		
Local / National contracting		
Project Manager (PM) *Rate: $2,676/month*	*43 weeks / over 5 years*	*The Project Manager (PM) will have technical competencies in the area of integrated solid waste management and provide technical support for the overall management of the project, including the mobilization of all project inputs, supervision over project staff, consultants and sub-contractors. See the full TOR (Annex D) above for details.*
Project Coordinator (PC) *Rate: $2,676/month*	*43 weeks / over 5 years*	*The project is implemented at multiple political and geographical levels, including national and municipal, and Setif and Constantine with several key national institutions based in Algiers. A dedicated satff is needed to provide technical support and to coordinate across these multiple political and geographical areas in order to ensure that project activities are implemented seamlessly and productively. The PC will support the PM in the overall management of the project, and, will in paricular be responsible for coordinating all stakeholders in implementaing project activities. The PC will directly support the implementation and M&E of the gender Action Plan, and Stakeholder Engagement Plan, and all project risks (including environmental and social safeguards). See Annex D for details.*
Administrative Assistant (AA) *Rate: $2,070/month*	*43 weeks / over 5 years*	*The AA will manage all aspects related to the good functioning of the PMU in relation to all secretarial activities. The AA will provide administrative backstopping to the project team, and also manage project finances. See the full TOR for details.*
For Technical Assistance		
Outcome 1		
Local / National contracting		
Sociological and Communications Expert *Rate: $400/day*	*88 days / Year 1-5*	*This expert will be responsible for implementing all activities under Output 1.1. and also Activity 1.5.2. To these ends, the expert will accomplish the following:* • *Carry out detailed survery of households' patterns of waste management, including identifying gender-differentiated communications startegies and incentive mechanisms to promote household and community participation in integrated waste management* • *Develop communication startegy and materials to sensitize household and the public in target areas* • *Develop incentives to enhance household and public participation in integrated solid waste management* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) report of household and public surveys; (2) communication startegy and communication materials; (3) report on incentive mechanisms*
Solid Waste Management specialist	*40 days / Year 2-3*	*This is the same local expert that will be involved in developing Replication Plan under Outcome 3. The local specialist will support the International Integrated Solid Waste Management (ISWM) Expert to:* • *Develop ISWM Masterplans for Constantine and Setif*

Consultant	Time Input	Tasks, Inputs and Outputs
Rate: $400/day		*Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) ISWM Masteplans for 2 Wilayas (including investment plans and socio-economic and environmental beenfits)*
National Logistics Expert *Rate: $400/day*	*111 days / Year 1-3*	*The national consultant will support the optimization of municipal waste collection under Outputs 1.2 and 1.5, as well as supporting the process of acquiring two electric waste collection trucks (Output 1.6). The following services will be provided:* • *Carry out technical study to design waste collection in Constantine (Act. 1.2.1 and 1.5.2)* • *Operationalise the optimized logistics scheme for waste collection* • *Design a transparent tender and procurement process for acquiring 2 electric trucks with well defined technical specifications (Act. 1.6.1 and 1.6.2)* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) report on the optimized logistics scheme to collection MSW in Constantine; (2) follow up to establish and operationalise the optimized logistics scheme; and (3) technical specifications and procurement of 2 electric waste collection trucks*
Environmental and Social Impact Assessments Expert *Rate: $400/day*	*187 days / Year 1-5*	*The national consultant will carry out all ESIAs for the solid waste recovery facilities in Constantine and Setif under Outputs 1.4 and 1.3, respectively as follows:* • *Carry out ESIA and develop ESMP for centralised MSW sorting facility in Constantine (Act. 1.4.3)* • *Carry out ESIA and develop ESMP for poultry waste transformation plant in Setif (Act. 1.3.2)* • *Follow up the implementation of the ESMP at both project sites* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 1* *Outputs: (1) ESIA and ESMP for centralised waste sorting facility; (2) ESIA and ESMP for poultry waste transformation plant; (3) annual reports on the implementation of ESMPs at both sites*
National Contractual Services Company with Industrial Site Planning expertise *Rate: $ 1600/day*	*46 days / Year 1-2*	*The services will required for developing the industrial site plan and technical specifications for the waste sorting facility in Constantine. These services will be provided in conjunction with similar services for setting up the solid/poultry waste transformation facilities under Outcome 2. Concerning Output 1.4, the following will be required:* • *Site development plan for centralized waste sorting facility (Act. 1.4.1)* • *Technical specifications for the waste sorting centre (Act. 1.4.2)* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) Site development plan for centralised waste sorting facility; and (2) technical specifications for waste sorting facility*
Integrated Solid Waste Management (ISWM) training specialist *Rate: $400/day*	*45 days / Year 1-3*	*The training specialist (also used for Act. 3.1.3) will support the international ISWM training expert in technical capacity building of the PPP staff to operate and maintain the waste sorting facility. The following will be supported:* • *Identify training needs* • *Support with on-the-job training* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) report on training gap analysis; (2) training provided for 8 persons (at least 40% are women)*
International / Regional and global contracting		
International Integrated Solid	*51 days / Year 2-3*	*This is the same international expert that will be involved in developing Replication Plan under Outcome 3. The international expert will take the lead to:*

Consultant	Time Input	Tasks, Inputs and Outputs
Waste Management Expert *Rate: $ 800/day*		• *Develop ISWM Masterplans for the Wilayas of Constantine and Setif* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) ISWM Masteplans for 2 Wilayas (including investment plans and socio-economic and environmental beenfits)*
Integrated Solid Waste Technology Management (ISWM) specialist *Rate: $800/day*	*30 days / Year 1-3*	*The international consultant will be an expert on waste recovery and transformation technologies and will lead the process of technical capacity building of the PPP staff to operate and maintain the waste sorting facility.* • *Carry out the identification of staff training needs* • *Lead with on-the-job training* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) report on training gap analysis; (2) training provided for 8 persons (at least 40% are women)*
International Waste Logistics Expert	*16 days / Year 2*	*The international consultant will lead the study on optimization of municipal waste collection under Outputs 1.2 and 1.5.* • *Carry out technical study to design waste collection in Constantine (Act. 1.2.1 and 1.5.2)* *Inputs: GEF financing resources + support of TWG for Component 1* *Outputs: (1) report on the optimized logistics scheme to collection MSW in Constantine*
Outcome 2		
Local / National contracting		
National Contractual Services Company with Industrial Site Planning expertise *Rate: $ 1600/day*	*58 days / Year 1-2*	*The services will required for developing the industrial site plan and technical specifications for the waste transformation facility in Constantine. These services will be provided in conjunction with similar services under Output 1.4. The following will be required:* • *Site development plan for centralized waste sorting facility (Act. 2.1.1)* • *Technical specifications for the waste sorting centre (Act. 2.1.2)* *Inputs: GEF financing resources + support of TWG for Component 1 & 2* *Outputs: (1) Site development plan for centralised waste transformation facility; and (2) technical specifications for waste transformation facility*
Environmental and Social Impact Assessments Expert *Rate: $400/day*	*72 days / Year 1-5*	*The national consultant will carry out all ESIAs for the solid waste transformation facility in Constantine under Output 2.1 as follows:* • *Carry out ESIA and develop ESMP for the waste transformation facility in Constantine (Act. 2.1.3)* • *Follow up the implementation of the ESMP* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 1 & 2* *Outputs: (1) ESIA and ESMP for waste transformation facility; (2) annual reports on the implementation of ESMP*
National Standards Expert	*35 days / Year 1-2*	*The national consultant will support IANOR in the process of developing national standards for organic-based fertilizers (Act. 2.3.1) through the following services:* • *Carry out desk research on international standards and regulations related to technical specifications of fertilizers derived from the organic fraction of household waste and from poultry waste* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) draft technical specifications of standards; and (2) draft regulatory framework for the use of organic-based fertilizers*

Consultant	Time Input	Tasks, Inputs and Outputs
Solid Waste Management specialist *Rate: $400/day*	*95 days / Year 2-5*	*This is the same local expert that will be involved in developing masteplans under Outcome 1 and Replication Plan under Outcome 3. The local specialist will support the International Integrated Solid Waste Management (ISWM) Expert to:* • *Develop a methodology for carrying out census of informal operators in the solid waste value chain* • *Develop incentives to include them in the integrated solid waste value chain* • *Support the AND to update the register of operators over the 5-year duration of the project* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) validated methodology to identify informal operators; (2) report on incentive mechanisms; and (3) updating register of operators together with AND*
Carbon Accounting Expert *Rate: $400/day*	*30 days / Year 3*	*The national expert will support the international consultant to set up a voluntary carbon market scheme in Algeria. This is the same expert who will developed the MRC mechanism under Output 3.1.* • *Supporting the International Carbon Market Expert to design and operationalize a voluntary carbon market under Act. 2.5.1* • *Provide training to staff of the National Climate Change Agency and AND on the market mechanism* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) voluntary carbon market designed and operational, supported with Operational Guidelines; and (2) selected staff of the National CC Agncy and AND trained*
Laboratory Expert	*140 days / Year 1,2,4,5*	*A laboratory expert will be required to implement the activities under Outputs 2.2 and 2.7 related to a laboratory testing facility equipped and operational with adequate human capacity. The following services will be provided:* • *Identify equipment needs of existing laboratory to achieve project objectives* • *Carry out training needs gaps analysis for operating and maintainnig laboratory equipment* • *Support international consultant to carry human capacity buidling through on-the-job training* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) report on equipment needs; (2) report on training gap analysis; and (3) training provided for 6 persons (at least 40% are women)*
Integrated Solid Waste Management (ISWM) training specialist *Rate: $400/day*	*60 days / Year 1-2*	*The training specialist (also used for Act. 3.1.3, and Act. 1.7.2) will support the international ISWM training expert in technical capacity building of the PPP staff to operate and maintain the poultry/solid waste facilities in Setif and Constantine. The following will be supported for Act. 2.6.2 and 2.8.2:* • *Identify training needs* • *Support with on-the-job training* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) report on training gap analysis; (2) training provided for 26 persons (at least 40% are women)*
International / Regional and global contracting		
International Integrated Solid Waste Management Expert	*30 days / Year 2*	*This is the same international expert that will be involved in developing the Masterplans under Outcome 1 and Replication Plan under Outcome 3. The international expert will take the lead to:* • *Develop a methodology to indetify and register informal operatoes under Act. 2.2.1*

Consultant	Time Input	Tasks, Inputs and Outputs
Rate: $ 800/day		• *Develop incentive mechanisms to promote participation of the registered operators in the integrated solid waste value chain (Act. 2.4.2)* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: Outputs: (1) validated methodology to identify informal operators; (2) report on incentive mechanisms*
International Carbon Market Expert *Rate: $800/day*	*25 days / Year 3*	*The international expert will set up a voluntary carbon market scheme in Algeria under Act. 2.5.1. The services will be:* • *Designing and operationalizing a voluntary carbon market under Act. 2.5.1* • *Carry out training of staff from the National Climate Change Agency and AND on the market mechanism* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) voluntary carbon market designed and operational, supported with Operational Guidelines; and (2) selected staff of the National CC Agncy and AND trained*
Integrated Solid Waste Technology Management (ISWM) specialist *Rate: $800/day*	*54 days / Year 1-2*	*The international consultant will be an expert on waste recovery and transformation technologies and will lead the process of technical capacity building of the PPP staff to operate and maintain the waste sorting facility under Act 2.6.2 and Act. 2.8.2. This is analogous to services for Act. 1.7.2. The servcies will be:* • *Carry out the identification of staff training needs* • *Lead with on-the-job training* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) report on training gap analysis; (2) training provided for 26 persons (at least 40% are women)*
International Laboratory Expert	*28 days / Year 1,2,5*	*The international expert will be responsible for carrying out on-the-job training under Act. 2.7.2 with support from the national counterpart.* *Inputs: GEF financing resources + support of TWG for Component 2* *Outputs: (1) training provided for 6 persons (at least 40% are women)*
Outcome 3		
Local / National contracting		
Integrated Solid Waste Management (ISWM) training specialist *Rate: $400/day*	*77 days / Year 1-3*	• *Establish gap in training needs on ISWM in project sites* • *Support university to update existing course curriculum based on training needs gap analysis, including introduction of MRV systems and SDG Impact Framework* • *Develop training materials based on training gap analysis* *Inputs: GEF financing resources + support of TWG for Component 3* *Outputs: (1) report on training gap analysis; (2) upgrade existing training course; (3) complementary training materials developed*
Solid Waste Management specialist *Rate: $400/day*	*44 days / Year 5*	*This is the same local expert that will be involved in developing masterplans under Outcome 1. The local specialist will support the International Integrated Solid Waste Management Expert to:* • *Develop Replication Plan covering all 48 Wilayas in Algeria* • *Develop Wilaya-specific investment plans to accomapny the Replication Plan* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 3* *Outputs: (1) Replication Plan; (2) Wilaya-specific investment plans*

Consultant	Time Input	Tasks, Inputs and Outputs
Industrial Manufacturing Expert *Rate: $400/day*	*60 days / Year 1-2*	• *Carry out feasibility (technical, economic/financial, timeline) study conducted to identify changes that will be required to the existing plant in the Divindus group for fabricating spare parts. The Canadian partners will support this process.* *Inputs: GEF financing resources + support of TWG for Component 3* *Outputs: (1) feasibility study report*
International / Regional and global contracting		
International Integrated Solid Waste Management Expert *Rate: $ 800/day*	*74 days / Year 5*	*This is the same international expert that will be involved in developing masterplans under Outcome 1. The international expert will take the lead to:* • *Develop Replication Plan covering all 48 Wilayas in Algeria* • *Develop Wilaya-specific investment plans to accompany the Replication Plan* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 3* *Outputs: (1) Replication Plan; (2) Wilaya-specific investment plans*
Outcome 4		
Local / National contracting		
SDG Specialist *Rate: $400/day*	*45 days / Year 1-5*	• *Supporting the International SDG Expert to develop a SDG Impact Framework for measuring the impacts of project investments on the SDGs* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 4* *Outputs: (1) SDG Impact Framework in place; (2) annual reports on the SDG impacts of project investments*
Carbon Accounting Expert *Rate: $400/day*	*21 days / Year 1-2*	• *Supporting the International Carbon Market Expert to develop a MRV system for tracking GHG emission reductions from integrated solid waste management* *Inputs: GEF financing resources + support of TWG for Component 4* *Outputs: (1) MRV system in place;*
Lessons learned expert *Rate: $400/day*	*99 days / Year 1-5*	• *Carrying out lessons learned investigations for whole project on an annual basis* • *Provide inputs in the process of formulating Replication (and investment) Plan for project sustainablity* *Inputs: GEF financing resources + UNDP financing resources + support of TWG for Component 3* *Outputs: (1) annual lessons learned reports; (2) Replication Plan*
International / Regional and global contracting		
SDG Impact Framework Expert *Rate: $ 800/day*	*13 days / Year 1-2*	*The international expert will develop and operationalise the SDG Impact Framework that will be used to monitor the impacts of project investments on the SDGs* *Inputs: GEF financing resources + support of TWG for Component 4* *Outputs: (1) SDG Impact Framework*
International Carbon Market Expert *Rate: $ 800/day*	*7 days / Year 1-2*	*The international expert will be the same as the person who will estabish the voluntary carbon amrket system under Output 2.5. His/her task will be to establish the MRV system for quantifying and verifying GHG emission reductions emanating from the project.* *Inputs: GEF financing resources + support of TWG 2* *Outputs: MRV system in place;*

Annex D: Terms of References

Terms of Reference of Techncial Services to be provided by UNDP:

Terms of Reference for Key Project Staff

Project Manager

Background

The Project Manager (PM), will be locally recruited following UNDP procedure, with input to the selection process from the Project partners. The position will be appointed by the project implementing agencies and funded entirely from the Project. The PM will be responsible for the overall management of the Project, including the mobilisation of all project inputs, supervision over project staff, consultants and sub-contractors. The PM will report to the PD in close consultation with the assigned UNDP Programme Manager for all of the Project's substantive and administrative issues. From the strategic point of view of the Project, the PM will report on a periodic basis to the Project Board, based on the PD's instruction. Generally, the PM will support the PD who will be responsible for meeting government obligations under the Project, under the NIM execution modality. The PM will perform a liaison role with the government, UNDP and other UN agencies, CSOs and project partners, and maintain close collaboration with other institutions providing co-financing. The PM will also have the overall responsibility of overseeing the implementation of the Social and Environmental Safeguards. Risks related to operations related to waste transformation will be delegated to the Project Coordinator, who will be based in Constantine.

Duties and Responsibilities

- Manage the overall conduct of the project.
- Plan the activities of the project and monitor progress against the approved workplan.
- Execute activities by managing personnel, goods and services, training and low-value grants, including drafting terms of reference and work specifications, and overseeing all contractors' work.
- Monitor events as determined in the project monitoring plan, and update the plan as required.
- Provide support for completion of assessments required by UNDP, spot checks and audits.
- Manage requests for the provision of UNDP financial resources through funding advances, direct payments or reimbursement using the FACE form.
- Monitor financial resources and accounting to ensure the accuracy and reliability of financial reports.
- Monitor progress, watch for plan deviations and make course corrections when needed within project board-agreed tolerances to achieve results.
- Ensure that changes are controlled and problems addressed.
- Perform regular progress reporting to the project board as agreed with the board, including measures to address challenges and opportunities.
- Prepare and submit financial reports to UNDP on a quarterly basis.
- Manage and monitor the project risks – including social and environmental risks - initially identified and submit new risks to the Project Board for consideration and decision on possible actions if required; update the status of these risks by maintaining the project risks log;
- Capture lessons learned during project implementation.
- Prepare revisions to the multi-year workplan, as needed, as well as annual and quarterly plans if required.
- Prepare the inception report no later than one month after the inception workshop.
- Ensure that the indicators included in the project results framework are monitored annually in advance of the GEF PIR submission deadline so that progress can be reported in the GEF PIR.
- Prepare the GEF PIR;
- Assess major and minor amendments to the project within the parameters set by UNDP-GEF;
- Monitor implementation plans including the gender action plan, stakeholder engagement plan, and the environmental and social management framework and plans;
- Monitor and track progress against the GEF Core indicators.
- Support the Mid-term review and Terminal Evaluation process.

Required skills and expertise

- A university degree (MSc or PhD) in a subject related to natural resource management or environmental sciences, especially in integrated solid waste management.
- At least 5 years of demonstrable project/programme management experience.
- At least 5 years of experience working with ministries, national or provincial institutions that are concerned with natural resource and/or environmental management.

Competencies

- Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects.
- Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies.
- Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project.
- Ability to coordinate and supervise multiple Project Implementation Units in their implementation of technical activities in partnership with a variety of subnational stakeholder groups, including community and government.
- Strong drafting, presentation and reporting skills.
- Strong communication skills, especially in timely and accurate responses to emails.
- Strong computer skills, in particular mastery of all applications of the MS Office package and internet search.
- Strong knowledge about the political and socio-economic context related to the Indonesian protected area system, biodiversity conservation and law enforcement at national and subnational levels.
- Excellent command of French and Arabic.

Project Coordinator (Technical)

Given that the project will be implemented at different pollitical (national and municipal) and geographical (Algiers, Constantine and Setif), the Project Coordinator will be responsible for providing technical support in project implementation, as well as carrying out coordination of all stakeholders for the efficient and effective use of resources to implement project activities in Constantine and Setif. So, the PC will provide technical support to the PM, but also have the responsibility to manage stakeholder engagement and ensure a gender-responsive project delivery. The Project Coordinator will have the following specific responsibilities:

- Coordinate all activities in project sites in Constantine and Setif by providing technical support
- ✓ Draft terms of reference for the recruitment of services providers (individuals and companies)
- ✓ Monitor the quality of the deliverables of consultants from technical perspective
- ✓ Provide technical support to the PSC when required
- ✓ Supporting SOPTE and AND in choice of waste transformation technologies to be in compliance with the ESMF and ESMP
- Provide direct assistance to the PM in relation to all project M&E activities, including among others the following:
- ✓ Monitor project progress and participate in the production of progress reports ensuring that they meet the necessary reporting requirements and standards;
- ✓ Ensure project's M&E meets the requirements of the Government, the UNDP Country Office, and UNDP-GEF; develop project-specific M&E tools as necessary;
- ✓ Oversee and ensure the implementation of the project's M&E plan, including periodic appraisal of the Project's Theory of Change and Results Framework with reference to actual and potential project progress and results;
- ✓ Oversee/develop/coordinate the implementation of the stakeholder engagement plan;
- ✓ Oversee and guide the design of surveys/ assessments commissioned for monitoring and evaluating project results;
- ✓ Facilitate mid-term and terminal evaluations of the project; including management responses;
- ✓ Facilitate annual reviews of the project and produce analytical reports from these annual reviews, including learning and other knowledge management products;
- ✓ Support project site M&E and learning missions;
- ✓ Visit project sites as and when required to appraise project progress on the ground and validate written progress reports.
- Support the PM with managing Social and Environmental Safeguards, including:
  - ✓ Monitor progress in development/implementation of the project ESMP/ESMF ensuring that UNDPs SES policy is fully met and the reporting requirements are fulfilled;
  - ✓ Oversee/develop/coordinate implementation of all safeguard related plans;

- ✓ Ensure social and environmental grievances are managed effectively and transparently;
- ✓ Review the SESP annually, and update and revise corresponding risk log; mitigation/management plans as necessary;
- ✓ Ensure full disclosure with concerned stakeholders;
- ✓ Ensure environmental and social risks are identified, avoided, mitigated and managed throughout project implementation;

- Monitor progress in implementation of the project Gender Action Plan ensuring that targets are fully met and the reporting requirements are fulfilled;
- Oversee/develop/coordinate implementation of all gender-related work;
- Review the Gender Action Plan annually, and update and revise corresponding management plans as necessary;
- Ensure reporting, monitoring and evaluation fully address the gender issues of the project;
- Review and update the Stakeholder Engagement Plan;
- Coordinate the implementation of knowledge management outputs of the project;
- Coordinate and oversee the implementation of public awareness activities across all project components;
- Facilitate the design and maintenance of the project website/webpages and ensure it is up-to-date and dynamic;
- Facilitate learning and sharing of knowledge and experiences relevant to the project;

The Project Coordinator will be recruited based on the following qualifications

- A Master's degree, preferably in the field of community development or natural resource / environmental management, especially in solid waste management;
- At least five years of relevant work experience preferably in a project management setting involving multi-lateral/ international funding agency. Previous experience with UN project will be a definite asset;
- Significant experience in collating, analyzing and writing up results for reporting purposes;
- Very good knowledge of results-based management and project cycle management, particularly with regards to M&E approach and methods. Formal training in RBM/ PCM will be a definite asset;
- Previous experience in developing and implementing environmental and social safeguard strategies for organizations or projects
- Knowledge and working experience of the application of gender mainstreaming in international projects;
- Very good inter-personal skills;
- Proficiency in computer application and information technology.
- Excellent language skills in French and Arabic (writing, speaking and reading) and intermediate level in English.

Project Administrative Assistant

Under the guidance and supervision of the Project Manager, the Administrative Assistant will carry out the following tasks:

- Assist the Project Manager and Project Coordinator in day-to-day management and oversight of project activities;
- Assist the Project Coordinator in matters related to M&E and knowledge resources management;
- Assist in the preparation of progress reports;
- Ensure all project documentation (progress reports, consulting and other technical reports, minutes of meetings, etc.) are properly maintained in hard and electronic copies in an efficient and readily accessible filing system, for when required by PB, TAC, UNDP, project consultants and other PMU staff;
- Provide PMU-related administrative and logistical assistance.
- Keep records of project funds and expenditures, and ensure all project-related financial documentation are well maintained and readily available when required by the Project Manager;
- Review project expenditures and ensure that project funds are used in compliance with the Project Document and GoI financial rules and procedures;
- Validate and certify FACE forms before submission to UNDP;
- Provide necessary financial information as and when required for project management decisions;
- Provide necessary financial information during project audit(s);
- Review annual budgets and project expenditure reports, and notify the Project Manager if there are any discrepancies or issues;
- Consolidate financial progress reports submitted by the responsible parties for implementation of project activities;
- Liaise and follow up with the responsible parties for implementation of project activities in matters related to project funds and financial progress reports.

The Project Administrative Assistant will be recruited based on the following qualifications:

- A Bachelor's degree or an equivalent qualification related to financial management or accounting;
- At least three years of work experience in a similar position, and with familiarity with projects related to rural energy access;
- Previous experience with UN project will be a definite asset;
- Very good inter-personal skills;
- Proficiency in the use of computer software applications especially MS Word and MS Excel.
- Excellent language skills in French and Arabic (writing, speaking and reading).

Terms of Reference for the Technical Working Groups (TWG)

The TWGs will provide technical advice and inputs relating to project implementation and will be chaired by institutions having the mandate in the specific area of work with support from the PM. The members of the TWG will consist of representatives from Government Ministry, UNDP, other relevant government agencies, research and educational organizations, NGOs/CSOs, private sector companies and other relevant stakeholders to be agreed by the Project Board. Technical experts may be invited in to discuss specific issues. Indicative Terms of Reference are as follows. These will be reviewed by the Project Board during project inception and may be extended as necessary.

- Review planned activities and ensure that they are technically sound and that, wherever possible, there is integration and synergy between the various project components during planning and implementation;
- Promote technical coordination between institutions, where such coordination is necessary and where opportunities for synergy and sharing of lessons exist;
- Provide technical advice and guidance on specific issues concerning illegal and unsustainable wildlife trade;
- Share information on project progress and lessons learned with related stakeholders at the national level;
- The TWG or a subset of its members may be requested to undertake specific project-related tasks, such as preparing or reviewing analytical reports, strategies and action plans, etc.;
- Other tasks as indicated by the Project Board

Annex E: Social and Environmental Screening Procedure

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the Social and Environmental Screening Procedure and Toolkit for guidance on how to answer the 6 questions.

Project Information

Project Information	
1. Project Title	AIM-WELL: Algeria Integrated Management of Waste Energy at the Local Level
2. Project Number	6163
3. Location (Global/Region/Country)	Algeria

Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?
Briefly describe in the space below how the Project mainstreams the human-rights based approach
This project mainstreams the human rights-based approach through interventions that address poverty, social equity and equality. It works to uphold human rights and improve the living conditions and general well-being of some 750,000 people currently living in the 2 municipalities covered by the project: Constantine and Setif. The project contributes to improve waste management system and by doing such, provide better living environment to beneficiaries. The project will adopt a participative approach, to guarantee maximum coverage of impact: the inclusion of all social groups, with particular attention to the participation and inclusion of women and youth. Being 'high risk', the project is accompanied by an Environmental and Social Management Framework (ESMF) to provide for a rights-based approach rooted in equity and fairness to addressing issues related to losses of jobs in the existing solid waste management chain (Annex H). Besides detailing the environmental impacts of the proposed technological innovation that the UNDP-GEF project proposes, detailed social impacts studies will be carried out (Outcome 1 and 2) in order to develop Environmental and Social Management Plans (ESMP) in Constantine and Setif. The ESMPs will be accompanied by appropriate action plans for the rehabilitation of persons who might lose income and livelihoods due to the project. There are two more instances in which the rights-based approach is addressed in the ESMF. The first relates to adherence to international Standards on occupational health and safety during the construction of solid waste recovery and transformation plants and facilities. The second relates to the appropriate measures being put in place for handling of solid waste, especially at the centralised solid waste sorting facility that will be constructed in Constantine. While the facility will be automated, it is expected that there will still be mechanical handling of some fraction of solid wastes, of which some may be household hazardous waste.
Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment
UNDP prioritizes gender mainstreaming as its main strategy to achieve gender equality and women's empowerment. Gender mainstreaming is the process of assessing any planned action in all areas and levels to determine the implication for women and men. It is a strategy for making women's, as well as men's, concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of projects so that women benefit equally. The Global Gender Gap Index shows that Algeria generally performs weakest in two categories, namely (i) participation and economic opportunity, and (ii) political empowerment (Annex F). Slow progress in closing the gender gap revealing that Algeria must increase its efforts and ambition to close the gender gap. Gender analysis (Annex F) carried out during the PPG phase revealed that women are already involved across the entire solid waste chain thereby providing various entry points for mainstreaming Gender in the project design. For instance, the household surveys (Annex SA3) have shown that sorting

of waste in households rose from 33% to 46% in the recent past.[26] With the implementation of the project, the observed progress and the incentives that will be provided to households, the rate of women involved in selective waste sorting is expected to reach the 80% target. Outcome 2 seeks to put in place an enabling environment with incentive mechanisms for promoting micro and small enterprises to participate in the integrated solid waste value chain. It also endeavours to develop a voluntary carbon market and to strengthening women's technical skills in solid waste transformation technologies. The stated goal of women who are active in the field and master the technology is 25%.

In summary, Gender has been considered through each step of the project. Emphasis will be placed on the inclusion of women in capacity building exercises to ensure they receive adequate training and equal opportunities to benefit from the project. Furthermore, the project will also work with women's associations to help create micro enterprises; these in turn will form part of the supply chain, providing services related to waste management. A Gender Action Plan (Annex F) is integrated in the project design across all three project outcomes.

Briefly describe in the space below how the Project mainstreams environmental sustainability

The project works to mainstream environmental sustainability by combining environmental protection with economic benefit. This is achieved by reducing the amount of waste sent to landfills (and so reducing emissions as well as pollution) using an integrated waste management model which leverages the private sector. As revealed in the Project Results Framework, 750 tonnes of municipal solid waste will be treated per day in Constantine. The waste value creation will result in avoided solid waste dumped in open sites and the production of 25,326 tonne/year of organic-based fertilizers; the generation of 14,980 MWh/year of electricity (2 MWe installed capacity); and 21,565 tonnes/year of recovered plastic, among others. In Setif, raw poultry waste will be transformed into 26,400 tonnes of organic-based fertilizers annually. The development of a replication plan (and accompanied with investment plans) will be developed for all 48 Wilayas for scaling up the circular economy in Algeria.

Importantly, the project will reduce GHG emissions. During its lifetime, the project will help reduce greenhouse gases (GHGs), including methane avoided from landfill resulting from the organic fraction of solid waste that will be transformed; optimized transportation (the collection of household waste and transport in Constantine and poultry waste fertilizers in Sétif) and transportation avoided (the distance between the project site and landfill avoided in Constantine); plastic recycling; and substitution of chemical fertilizers with organic-base fertilizers. It is expected that GHGs will be avoided as from the second year of project implementation. At the end of the 5-year project, the cumulative avoided emissions will be about 357,279 tCO_{2e}. The results are summarized in Table 4 (ProDoc), and the GHG emission reduction calculations, including the methodologies used, are found in Annex J. Modelling over a 15-year economic life gives a total reduction of direct GHG emissions of 4,301,757 tCO_{2e}. Indirect GHG emission reductions are expected to be between 12.91 $MtCO_{2e}$ (bottom-up) and 15.40 $MtCO_{2e}$ (top down).

[26] Cette enquête a été menée dans le cadre du projet cf : PIMS 6163 Enquête ménages Annexe SA3

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? *Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses). If no risks have been identified in Attachment 1 then note "No Risks Identified" and skip to Question 4 and Select "Low Risk". Questions 5 and 6 not required for Low Risk Projects.*	**QUESTION 3: What is the level of significance of the potential social and environmental risks?** *Note: Respond to Questions 4 and 5 below before proceeding to Question 6*			**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**
Risk Description	***Impact and Probability (1-5)***	***Significance (Low, Moderate, High)***	***Comments***	***Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.***
Risk 1. Support to a fundamental transformation of the household waste management supply chain and practices in Constantine brings issues of labour management, occupational health and safety, construction site management, emergency preparedness and response (among others) *SESP Principle 1. Human Rights, Question 1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?* *SESP Principle 1. Human Rights, Question 2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?* *SESP Principle 1. Human Rights, Question 3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?* *SESP Principle 1. Human Rights, Question 4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular*	I = 4 P = 5	**High**	The Project includes the construction and operation of a solid waste sorting and processing units by SOPTE (a parastatal) inside an 8-hectare property fully owned by SOPTE that is fenced, constantly guarded, and is free of any encumbrances. The construction and operation of the units brings issues of labour management, occupational health and safety, construction site management, sexual exploitation and abuse, emergency preparedness and response, environmental and social monitoring of contractors, and the need for a worker grievance mechanism. SOPTE will initially reroute 500 tons of waste daily from the Constantine and El Khroub communes,	An ESMF (Annex H) was prepared to address the social and environmental risks and impacts of the entire Project. The ESMF includes the following measures that are specific to the Constantine solid waste activities of the Project: SOPTE has already commissioned an Environmental Impact Study (EIS) that was prepared by SARL Traitech to meet national requirements for classified facilities (Etablissement Public) as defined in Executive Decree No. 2006-198 of 31 May 2006. The document is dated February 2019, and has been submitted to the Ministry of Environment for approval. The EIS focuses on the engineering and technical issues associated with the units. A detailed review of the EIS is joined in Appendix A of the ESMF, including proposed changes needed to meet the requirements of UNDP's SES. The Project will ensure that SOPTE upgrades its EIS on the basis of the review to a full ESIA and ESMP that: (i) meet UNDP's SES principles and standards, including the EHS Guidelines; (ii) covers the environmental and social risks and impacts of the entire household waste management value chain in Constantine; (iii) are reviewed and cleared by Project, as well as UNDP, before any activity with a physical footprint is initiated in Constantine; (iv) are applied and monitored throughout implementation of the activities concerned. The ESMP will incorporate a set of minimum environmental and social criteria for contractors, largely based on the

marginalized groups, from fully participating in decisions that may affect them? *SES Principle 1. Human Rights, Question 8.Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?* *Standard 3, Community Health, Safety and Working Conditions Question 1. Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?* *Standard 3, Community Health, Safety and Working Conditions Question 2. Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?* *Standard 3, Community Health, Safety and Working Conditions Question 7. Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?* *Standard 3, Community Health, Safety and Working Conditions Question 8. Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?* *Standard 5, Displacement and Resettlement, Question 2. Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?* *Standard 4: Cultural Heritage. Question 1. Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional*			eventually to be upscaled to 100 tonnes/day. The units will produce residual waste that will need to be managed, particularly the extracted liquid waste (in excess of 40%), waste that cannot be reused (up to 30% of dried waste), bottom ashes from incinerated waste (over 25% of incinerated material) and fine particles from the incineration process if they are not filtered or precipitated. The sorting and processing units will also require a source of energy that might not necessarily come from waste, such as gas from the existing network. The use of a landfill, such as the Boughareb CET, is still necessary for the non-reusable waste and the ashes, which might represent 20% of the processed waste by weight. The Project will directly impact the livelihoods of most persons currently involved in solid waste management in Constantine, and might increase existing tensions amongst the stakeholder involved. The rerouting of the waste will amputate the established waste management structure (EPIC) of 80% of the revenue that it theoretically can derive, and will lead to significant retrenchment for the EPIC. SOPTE's planned takeover of collection and transport for all the waste from Constantine and El Khroub, from their current minority	EHS Guidelines of the World Bank Group (Appendix F). These criteria include measures to mitigate road and traffic risks. The ESIA and ESMP will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations. This ESMP will include a Livelihood Action Plan to manage this risk of economic displacement, if determined necessary based on the findings of the ESIA (and in line with SES requirements). SOPTE is exploring various scenarios to address potential EPIC retrenchment. As noted in the ESMF, the Project will in no instance support forced eviction, in line with the SES prohibition. The project's comprehensive Stakeholder Engagement Plan (Annex G) will also serve to manage impacts on stakeholders, and will be updated during implemented as needed (per the ESMF, and subsequent plans). The ESIA and ESMP are fully incorporated in the project design under Output 1.4, construction of a centralized municipal solid waste sorting plant in Constantine, and Output 2.1 concerning the construction of a solid waste transformation plant, including waste-to-energy unit in Constantine. Training and special equipment will be provided for the safe handling of hazardous substances recovered during the waste sorting process (capacity building provided under Outputs 2.6 and 2.8). In addition, the Project includes measures to reduce the consumption of household hazardous wastes in Constantine and Sétif are developed (Outputs 1.1 and 1.5). In addition, activity 1.2.2 will implement appropriate procedures for the collection of household hazardous waste in Constantine.

or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? *Standard 5, Displacement and Resettlement, Question 3. Is there a risk that the Project would lead to forced evictions?* *Standard 7, Pollution Prevention and Resource Efficiency, Question 1. Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?* *Standard 7, Pollution Prevention and Resource Efficiency, Question 2. Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?*			position, might lead to significant retrenchment or loss of jobs of waste truckers and workmen. It also brings in road and traffic risks associated with SOPTE's direct involvement in the collection and transport of solid waste Finally, the Project might deprive existing waste pickers and collectors of their livelihood because the amount of waste dumped illegally will be reduced, thus reducing the availability of waste for picking.	
Risk 2. Support to Poultry Waste Management in Sétif brings a wide range of environmental issues such as odours, nitrate contamination of ground and surface water, flies and mosquitoes; and social issues including potential physical and/or economic displacement, and impacts on cultural heritage. *SESP Principle 1. Human Rights, Question 1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?* *SESP Principle 1. Human Rights, Question 2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?* *SESP Principle 1. Human Rights, Question 3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?* *SESP Principle 1. Human Rights, Question 4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular*	**I = 4** **P = 5**	**High**	The Ksar el Abtal was selected for the poultry waste transformation unit because it is currently the main site used for the informal drying of poultry waste. The new unit would very significantly reduce the negative environmental impacts currently associated with the site, such as odours, nitrate contamination of ground and surface water, flies and mosquitoes. The processing of poultry waste might produce residual waste, most particularly liquid waste, and will require a yet undetermined source of energy to transform the waste. The conversion of the existing poultry waste drying site in Guelal into an industrial unit to produce fertilizer would physically displace the persons currently using the site for drying poultry waste.	*SOPTE has not yet prepared an ESIA or ESMP for its involvement in the processing of poultry waste and the commercialization of fertilizer derived from the poultry waste.* The ESIA and ESMP that SOPTE will produce for the Sétif poultry waste processing unit (see above) will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations. The ESMF provides for the preparation an Environmental and Social Impact Assessment (ESIA) and an Environmental and Social Management Plan (ESMP) for the poultry waste processing unit in Sétif that: (i) meet UNDP's SES principles and standards, including the EHS Guidelines; (ii) cover the entire poultry waste management value chain in Sétif; (iii) are reviewed and cleared by UNDP before any activity with a physical footprint is initiated in Sétif; (iv) are applied and monitored throughout implementation of the activities concerned. The ESMP will incorporate the minimum environmental and social criteria for contractors. Output 1.3 for the setting up of a waste recovery and transformation plant for poultry waste in Sétif; The ESIAs are fully incorporated in the project design under Output 1.3 for the setting up of a waste recovery and transformation plant for poultry waste in Sétif; Output 1.4 for the construction of a centralized municipal solid waste sorting plant in Constantine; and Output 2.1

marginalized groups, from fully participating in decisions that may affect them? *Standard 3, Community Health, Safety and Working Conditions Question 1. Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?* *Standard 3, Community Health, Safety and Working Conditions Question 2. Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?* *Standard 3, Community Health, Safety and Working Conditions Question 7. Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?* *Standard 3, Community Health, Safety and Working Conditions Question 8. Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?* *Standard 4: Cultural Heritage, Question 4. Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)?* *Standard 5, Displacement and Resettlement, Question 1. Would the Project potentially involve temporary or permanent and full or partial physical displacement?* *Standard 5, Displacement and Resettlement, Question 2. Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access*			More broadly, SOPTE's entry into the poultry waste value chain at Setif could at first economically displace approximately 28% of the storage and partial drying activities, as well as the transport to southern Algeria, and sales activities. In due course, the whole supply chain would be transformed and formalized. SOPTE believes that there will be no loss of employment because transporters will be able to obtain poultry waste from neighbouring wilayas, such as Batna or Jijel. This is possible but not substantiated by any study.	concerning the construction of a solid waste transformation plant, including waste-to-energy unit in Constantine. he ESIA and ESMP that SOPTE will produce for the Constantine sorting and processing units (see above) will cover the social impacts and risks of the entire solid waste management value chain in Constantine. The project's comprehensive Stakeholder Engagement Plan (Annex G) will also serve to manage this risk, and will be updated during implemented as needed (per the ESMF, and subsequent plans). The ESIA and ESMP will cover the social impacts and risks of the entire waste management value chain in Sétif. If necessary, the Project (SOPTE) will prepare a Resettlement Action Plan (RAP) if the land acquisition by SOPTE involves the physical displacement of current occupants. A RAP would not be necessary if the land is acquired commercially through a willing buyer/willing seller process, so long as that process does not imply impacts that trigger SES Standard 5 (e.g. if informal settlers on the land are thereby displaced). In that case, documentation of the process would suffice. As noted in the ESMF, the Project will in no instance support forced eviction, in line with the SES prohibition. The Project will also prepare a Livelihood Action Plan to manage the risk of economic displacement, if determined necessary based on the findings of the ESIA (and in line with SES requirements). The Project will in no instance support forced eviction, and if necessary, an alternative site will be considered.

restrictions – even in the absence of physical relocation)? *Standard 5, Displacement and Resettlement, Question 3. Is there a risk that the Project would lead to forced evictions?* *Standard 7, Pollution Prevention and Resource Efficiency, Question 1. Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?* *Standard 7, Pollution Prevention and Resource Efficiency, Question 2. Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?*				
Risks 3. The promotion of a New Solid Waste Management Model could affect the livelihoods of wastepickers in Algeria *SESP Principle 1. Human Rights, Question 1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?* *SESP Principle 1. Human Rights, Question 2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups?* *SESP Principle 1. Human Rights, Question 3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?* *SESP Principle 1. Human Rights, Question 4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?* *Standard 5, Displacement and Resettlement, Question 2. Would the Project possibly result in economic displacement (e.g. loss of assets or access*	**I = 2** **P = 5**	**Moderate**	The two pilots in Constantine and Setif seek to implement a paradigm shift from engineered solid waste to the 3 Rs (reduce, reutilize, recycle), as suggested in the recent National Strategy and Action Plan for the Integrated Management and Recovery of Waste by 2035. The Strategy did not consider the social and environmental implications of the proposed paradigm shift. In particular, such a shift will directly affect tens of thousands of individuals whose livelihoods depend on current waste management practices, particularly since the new players will tend to be better organized and will in large part be private sector actors that will capture most of the added value. Already vulnerable persons could become even more vulnerable.	The Project will help fill the policy gap by supporting the preparation Strategic Environmental and Social Assessment (SESA) that addresses the potential social and environmental effects of the Strategy. As discussed above, this is fully integrated in the project design under Output 3.1 with due reference to the SESP (Annex E). The SESA will consider the social and environmental implications of the solid waste management model proposed by the Project, as implemented through two pilots in Constantine and Setif. More specifically, it must: • Concisely describe the Strategy • Take into account UNDP's SES, as well as the standards of other donors/development partners, and identify potential policy gaps that will need to be addressed. • Identify potential adverse social and environmental impacts associated with the Strategy's implementation, most particularly the loss of formal and informal livelihoods associated with the current management model. • Formulate policy and institutional measures needed to avoid, mitigate or compensate for adverse social and environmental impacts arising from the Strategy's implementation. In particular, the SESA will identify policy measures to avoid capture of the most profitable parts of the waste supply chain by the private sector, while leaving public institutions with the least profitable activities. • Engage decision makers and stakeholders to ensure a common understanding and broad support for implementation

to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?				*The Ministry of Environment will ensure the meaningful participation and consultation of stakeholders throughout the preparation of the SESA.* *The issue of wastepickers livelihoods at potential replication sites will be addressed through the Strategic Environmental and Social Assessment (SESA) (see Risk 5 below). The SESA will form an integral part of Activity 3.1.2 that will develop a replication plan for scaling up the integrated solid waste management model in all Wilayas in Algeria.*
Risk 4. Vulnerability of the project (and its outcomes) to the effects of climate change *Standard 2, Climate Change Mitigation and Adaptation, Question 2. Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?*	**I = 1** **P = 5**	**Low**	Assessing the Project's vulnerability to climate change has two layers of uncertainties. The first layer is that there is uncertainty in the nature and scope of potential changes, as indicated in the baseline. Furthermore, tipping points could be reached that affect GCMs and make potential changes non-linear. The second layer is that it is difficult to predict how the various value chains associated with the Project will evolve or adapt: (i) household waste to energy, (ii) household waste to fertilizer, (iii) household waste to recyclables, (iv) poultry waste to fertilizer, poultry fertilizer to potatoes or vegetables. Thus, the following is highly speculative: • Climate change will not directly affect the production of household waste in Constantine and of poultry waste in Setif. Given changing lifestyles, the per capita production of waste should continue to increase, as will per capita consumption of poultry. Ironically, less rainfall will facilitate the handling and transformation of waste, and	No separate assessment or management measures required for low risks, though as the project's overall categorization is 'High' this risk will be considered during the development of the project's holistic ESIA/ESMPs (per the ESMF).

			reduce the negative impacts of runoff from poultry farms. • The demand for recyclables and energy from household waste should continue to increase, as will the demand for potatoes and vegetables. • Given that farming in Southern Algeria relies on groundwater rather than rainfall, the production of potatoes and vegetables should not decrease because of lower rainfall in the short to medium term. • Thus, the demand for the type of fertilizer that the Project will produce and promote should remain strong in the short (2030) to medium term (2050). • In the long term (beyond 2050), an even dryer climate in Southern Algeria could lead to the depletion of aquifers and thus might reduce the availability of ground water for garden farming. • Nonetheless, the production of food will remain necessary, and thus might shift to areas where water is more readily available (near coastal desalination plants) or to different production models (hydroponic, urban farms), and thus the demand for fertilizer should remain high. *In conclusion, existing data does not suggest that the activities funded and promoted by the Project would be vulnerable to climate change, but the possibility cannot be excluded.*	

Risk 5. Technical Assistance could create outcomes or situations that harm people or the environment. SES, all principles and standards triggered above	**I = 2** **P = 3**	**Moderate**	The nature and substance of technical assistance regarding policy or regulatory issues could create outcomes or situations contrary to UNDP's SES principles and standards, and could diverge from the expectations of certain stakeholders. Consultants that are embedded within an institution to strengthen the institutions capacity can be problematic If they, unbeknownst to the Project or UNDP, work or provide advice on activities unrelated to the Project that do not meet the UNDP's SES principles and standards.	Per the ESMF, the Project Coordinator will systematically review the terms of reference for technical assistance funded by the Project, to ensure that they take into account UNDP's Social and Environmental Standards, including gender issues, before they are approved. The Project will also monitor the outputs of these consultancies and ensure that they are disclosed and consulted on in accordance to the Project's Stakeholder Engagement Plan and UNDP requirements. This implies that the Project must have or employ the necessary technical expertise. The terms of reference for embedded consultants should clearly ring-fence the activities that they can work on under a UNDP/GEF funded contract, by specifying permissible tasks on or including a list of excluded tasks.
Risk 5. Gender discriminations could be reproduced by the project. *SESP Principle 2, Question 2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?*	**I=2** **P=5**	**Moderate**	Although women are well represented in the management of solid waste in Constantine (SOPTE, EPIC, Government), they are not well represented in the construction sector.	*A gender analysis was undertaken and a Gender Action Plan (Annex G) was prepared during the PPG to manage this risk.* *The ESIA and ESMP terms of reference for the waste processing units require that contractors include procedures for the equitable gender selection of labour. These are included in Outputs 1.3, 1.4 and 2.1, which will develop the technical specifications for construction the waste collection, recovery and transformation infrastructure.*

	QUESTION 4: What is the overall Project risk categorization?		
	Select one (see SESP for guidance)		**Comments**
	Low Risk	☐	
	Moderate Risk	☐	
	High Risk	**X**	The environmental and social risks and impacts associated with the transformation of solid waste value chains proposed by SOPTE in Constantine and Setif are overall high. An ESMF was developed to guide Project implementation, including the preparation of ESIAs and ESMPs for the solid waste processing units that

			are part of the Project. SOPTE has committed to the construction and operation of the units according to the ESMPs.
	QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?		
	Check all that apply		**Comments**
	Principle 1: Human Rights	**X**	The Project might affect some wastepickers.
	Principle 2: Gender Equality and Women's Empowerment	**X**	Gender was mainstreamed throughout each of the project's components.
	1. Biodiversity Conservation and Natural Resource Management	☐	Standard 1 is not triggered because the Project will only be within existing industrial footprints and not within any habitats or agricultural landscape, will not consume any water, and will not release any effluents into a natural habitat.
	2. Climate Change Mitigation and Adaptation	**X**	The Project will not increase emissions and will not significantly be affected by expected climate changes
	3. Community Health, Safety and Working Conditions	**X**	The Minimum Environmental and Social Criteria for ESMPs attached to the ToRs for the ESIAs and ESMPs of the proposed solid waste processing units in Constantine and Setif include clauses related to Community Health, Safety, and Working Condition clauses that will apply to all contractors during the construction and operation of the units.
	4. Cultural Heritage	**X**	There is no known cultural heritage in the sites selected for the solid waste processing units in Constantine and Setif. Nonetheless, the ToRs for the ESIA and ESMPs of these sites include a chance find procedure that will apply to all contractors. Cultural heritage in potential future replication sites will be taken into account during the preparation of the Environmental and Social Strategic Assessment that the Project will prepare.
	5. Displacement and Resettlement	**X**	The Project will affect the livelihoods of persons that currently depend on the solid waste value chain. The proposed ESMF includes the preparation of ESIAs and ESMPs that will cover the social impacts and risks of the entire solid waste management value chain in Constantine, and of the poultry waste value chain in Setif. The project will only go forward if it does not lead to the eviction of people currently occupying the poultry waste management site in Setif.
	6. Indigenous Peoples	☐	During the PPG, based on stakeholders' consultation and field visits in Constantine and Setif from June to October 2019, it was determined that no groups satisfying the more commonly accepted definitions of indigenous peoples are located in the project's area or area of influence, and that no such groups could be impacted by the project's activities. This

			will be reassessed and updated as needed during the site-specific assessment to be undertaken during project implementation.
	7. Pollution Prevention and Resource Efficiency	**X**	The processing of solid waste might produce residual waste, most particularly liquid waste and ash. The management of these residual wastes will be addressed in ESIAs and ESMPs that the Project will prepare for both Constantine and Setif.

Final Sign Off

Signature	***Date***	***Description***
QA Assessor		UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.
PAC Chair		UNDP chair of the PAC. In some cases, PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.

SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
Principles 1: Human Rights	**Answer (Yes/No)**
1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	Yes
2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? [27]	Yes
3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	Yes
4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?	Yes
5. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?	No
6. Is there a risk that rights-holders do not have the capacity to claim their rights?	No
7. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?	No
8. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?	Yes
Principle 2: Gender Equality and Women's Empowerment	
1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?	No
2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	Yes
3. Have women's groups/leaders raised gender equality concerns regarding the Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?	No
4. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?	No

[27] Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

	For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being	
Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? *For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes*	No
1.2	Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	Would Project activities pose risks to endangered species?	No
1.5	Would the Project pose a risk of introducing invasive alien species?	No
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	No
1.7	Does the Project involve the production and/or harvesting of fish populations or other aquatic species?	No
1.8	Does the Project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction*	No
1.9	Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)	No
1.10	Would the Project generate potential adverse transboundary or global environmental concerns?	No
1.11	Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered.*	No

	Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.	
Standard 2: Climate Change Mitigation and Adaptation		
2.1	Will the proposed Project result in significant[28] greenhouse gas emissions or may exacerbate climate change?	No
2.2	Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?	Yes
2.3	Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)? *For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding*	No
Standard 3: Community Health, Safety and Working Conditions		
3.1	Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?	Yes
3.2	Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	Yes
3.3	Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?	No
3.4	Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)	No
3.5	Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?	No
3.6	Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?	No
3.7	Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?	Yes
3.8	Does the Project involve support for employment or livelihoods that may fail to comply with national and international labour standards (i.e. principles and standards of ILO fundamental conventions)?	Yes

[28] In regards to CO_2, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

3.9	Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?	No
Standard 4: Cultural Heritage		
4.1	Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	Yes
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
5.1	Would the Project potentially involve temporary or permanent and full or partial physical displacement?	Yes
5.2	Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	Yes
5.3	Is there a risk that the Project would lead to forced evictions?[29]	Yes
5.4	Would the proposed Project possibly affect land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
6.1	Are indigenous peoples present in the Project area (including Project area of influence)?	No
6.2	Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?	No
6.3	Would the proposed Project potentially affect the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the Project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? *If the answer to the screening question 6.3 is "yes" the potential risk impacts are considered potentially severe and/or critical and the Project would be categorized as either Moderate or High Risk.*	No

[29] Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

6.4	Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No
6.5	Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?	No
6.7	Would the Project adversely affect the development priorities of indigenous peoples as defined by them?	No
6.8	Would the Project potentially affect the physical and cultural survival of indigenous peoples?	No
6.9	Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	No
Standard 7: Pollution Prevention and Resource Efficiency		
7.1	Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
7.2	Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?	Yes
7.3	Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol*	No
7.4	Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?	No
7.5	Does the Project include activities that require significant consumption of raw materials, energy, and/or water?	No

Annex F: Gender Analysis and Gender Action Plan (provided separately)

Annex G: Stakeholder Engagement Plan (provided separately)

Annex H: Environmental and Social Management Framework (provided separately)

Annex I: UNDP Risk Register

#	Description	Risk Category	Impact & Probability	Risk Treatment / Management Measure	Risk Owner
1	The COVID-19 Pandemic may slow down project implementation due to restricted mobility of persons and inability to carryout technology transfer because of closed borders	Organizational	Algeria has had to date 54,402 COVID-19 infections. The number of deaths stood at 1,856 persons giving a mortality rate of ~3.4% that is slightly higher that the global average if 2.8%.[30] In North Africa, Algeria has relatively lower number of infections compared to neighbouring countries like Morocco, Libya and Tunisia. Also, Algeria has seen a peak in number of infections on 27 July 2020, and it has since seen a declining number of infections. Albeit, there have been intermittent day-to-day decreases or spikes in number of infections during this decline period. A good sign for the project is that Constantine is a province that has relatively lower number of infections and deaths. As of 18 October 2020, there were 6 deaths for 1,739 infections giving a fatality rate of 0.34% or 10 times lower than national average.[31] The Government of Algeria has been proactive in managing the health and sanitary crisis by establishing curfew in 29 Provinces, including Constantine and Sétif between 11pm and 6am. Also, wearing of face masks is compulsory in public. Also, in-coming foreigners are required to spend two weeks of quarantine, with the first week spent in a state-determined facility. A good sign is that Government has started the gradual ease of restrictive measures to allow economic activities and public transportation in cities.[32]	The effects of the pandemic will be attenuated by the fact that movement within the country is not restricted outside of the nighttime hours of curfew. The following project design provide mitigation actions that reduce the need for physical travel: • The biggest threat relates to the movement of international consultants and partners of the Joint Venture. The project has been designed to make maximum use of local expertise as far as practicable. This is reflected in the budget figures with national consultancy fees higher than international consultancy fees by a factor 1.45. • A project website will be developed under Output 4.4 that will facilitate data and information sharing and enable the use of virtual meetings to carry out stakeholder meetings and consultations. For instance, the Inception Workshop can be planned to take place virtually if needed. • Technology transfer can be impeded because the borders may be closed. However, the project envisages to first carry out detailed environment and social impacts studies (Annex H and Section IV in the ProDoc) prior to technology transfer. These studies will be front loaded, which will give more time for the restoration of normality in Q3 and Q4 of 2021.	Project Coordinator

30 https://www.google.com/search?source=hp&ei=PhmNX9zNI4uua_-3vfgN&q=covid-19+algeria+statistics&oq=COVId-19+algeria&gs_lcp=CgZwc3ktYWIQARgCMgUIABDJAzICCAAyAggAMgIIADIGCAAQFhAeMgYIABAWEB4yBggAEBYQHjIGCAAQFhAeMgYIABAWEB4yBggAEBYQHjoLCAAQsQMQgwEQyQM6BQguELEDOggILhCxAxCDAToFCAAQsQM6CwguELEDEMcBEKMCOg4ILhCxAxCDARDHARCvAToICAAQsQMQgwE6CAgAELEDEMkDUMQKWJk0YLtPaABwAHgAgAH2CogBvTWSAQozLTEzLjIuNy0xmAEAoAEBqgEHZ3dzLXdpeg&sclient=psy-ab – accessed 19 October 2020.

31 http://covid19.cipalgerie.com/en/detailed-statistics-of-covid-19-in-algeria/ - accessed 19 October 2020.

32 https://dz.usembassy.gov/covid-19-information/ - accessed 19 October 2020.

			L = 2 I = 4 Risk level = Moderate	Further it is pointed out that SOPTE has put in place stringent health and sanitary practices that have ensured its continued daily delivery of public services related to waste collection, transport and disposal.	
	Risk of PPP disintegration or undercapitalized sorting and waste transformation that would delay project implementation.	Organizational	After a meeting with the Foreign Ministry 25 November 2019, SOPTE has renewed its support to the project with the testimony of its co-financing letter. The probability of under-capitalization is low. As described in the ProDoc, the JV (or PPP) is directed by a memorandum of understanding between the project partners (SOPTE, AND and Canadian partners). In the event of the disintegration of the JV, the impacts will be moderate. L = 2 I = 4 Risk level = Moderate	This risk may result in project failure. In such a case, MI must take full responsibility for ensuring that the company remains operational. To this end, it will assume financial responsibility for initial costs and unpaid expenses until an alternative private partner is found or the GEF project is completed.	Project Coordinator
2	Lack of technical expertise for the development and implementation of the waste processing plant.	Technical	The project is innovative and the technologies will be new in Algeria. Hence, there is obviously a lack of technical expertise in all project facets (installation, operation and maintenance). However Canadian partners in the JV (or PPP) have all technical and technological skills. L = 2 I = 3 Risk level = Moderate	A series of technical and economic detailed feasibility studies will be conducted and capacity building exercises will be undertaken under Outputs 1.3, 1.4 and 2.1 of the project. The Canadian project partners will contribute their technical expertise to facilities (Outputs 2.6 and 2.8). But it turns out that the operation of these facilities will be made by the locals. It is recommended under Outputs 2.6 and 2.8 to strengthen the human and technical capacities in the operation and maintenance of the management units and the transformation of solid waste.	Project Coordinator
3	The need for an intersectoral technical committee is not satisfied.	Institutional coordination	The implementation of the project in Constantine and Sétif is run on a pilot basis and does not initially require an intersectoral technical committee at national level. L = 2 I = 1	The project steering committee, which will consist of a similar set of players, will be in charge of supporting the role of the intersectoral committee until it is set up for scaling up of integrated solid waste management at the national and regional levels. This institutional coordination aspect will be included in the replication plan to be developed by Activity 3.1.4.	Project Coordinator

			Risk level = Low		
4	The markets for products coming from the sorting and value creation of all types of waste are not secured.	Market risk	The government's strategy (SNGID 2035) already plans to introduce a circular economy arising from the transformation of solid waste. One such value added product is fertilizer produced from the organic fraction of solid waste. In the specific case of poultry waste, it must be emphasized that they are already used as fertilizer in crop production. Field surveys (Annex SA3) have demonstrated that there is already a market for dry solid waste (plastic, glass, cardboard etc ...). L = 2 I = 2 Risk level = Low	The project has the responsibility to buy recycled materials at an agreed price, so that micro-enterprises involved in recycling activities can remain operational. For this reason, companies will be invited to participate in the new value chain under Outputs 1.3 and 2.4 of the project. Regarding the distribution of NPK-enriched fertilizers, MADRP and the Ministry of Commerce will share the similar responsibility under the activities of Output 1.3 that will focus on the development of standards and implement a regulation for fertilizer use, and will finally conclude the homologation process of fertilizer through field trials.	Project Coordinator
5	Sorting and value generation from the organic fraction of waste are not economically viable	Financial	The current situation of municipal waste management is not financially and economically viable (see section II of ProDoc). As provided in SNGID 2035 the development of a circular economy in the integrated solid waste management chain brings a solution that is economically viable. The financial model of the JV has shown that the project is financially viable (paragraph 62 in ProDoc). L = 2 I = 2 Risk level = Low	The financial model developed by SOPTE has revealed a project payback period of 3 years with cost of fertilizers produced by the project being up to 30% less than chemical fertilizers. However, if the production or sale of organic fertilizer or electricity become unsustainable, the Ministry of Energy or the Ministry of Agriculture agree to subsidize either the feed-in tariff for electricity production or the sale of organic fertilizers to farmers, respectively.	Project Coordinator
6	Vulnerability to Climate Change	Climate	The Climate Action Plan shows perceptible changes in the Mediterranean region, with an increasing recurrence of climatic anomalies and extreme events. Moreover, Algeria is warming faster than the global average. Whereas the increase in global temperature in the 20th century was 0.74°C, the increase in the Maghreb has been between 1.5 and 2°C depending on the region. It also has been accompanied by a 10 to 20% decrease in rainfall. Existing data does not suggest that the activities funded and promoted by the Project would be	Field visits during the preparatory phase indicated that the sites that will host the management and recycling of solid waste units are not, as at today, exposed to extreme weather events, especially risk flooding. But with accelerated climate change, this situation may change in the future. The project will finance social and environmental impact studies for all project sites (Activities 1.3.2, 1.4.3 and 2.1.3) and the formulation of social and environmental management plans. These impact studies and	Project Coordinator

			vulnerable to climate change, but the possibility cannot be excluded. • Climate change will not directly affect the production of household waste in Constantine and of poultry waste in Setif. • The demand for recyclables and energy from household waste should continue to increase, as will the demand for potatoes and vegetables. • Given that farming in Southern Algeria relies on groundwater rather than rainfall, the production of potatoes and vegetables should not decrease because of lower rainfall in the short to medium term. • Thus, the demand for the type of fertilizer that the Project will produce and promote should remain strong in the short (2030) to medium term (2050). • In the long term (beyond 2050), an even dryer climate in Southern Algeria could lead to the depletion of aquifers and thus might reduce the availability of ground water for garden farming. • Nonetheless, the production of food will remain necessary, and thus might shift to areas where water is more readily available (near coastal desalination plants) or to different production models (hydroponic, urban farms), and thus the demand for fertilizer should remain high. L = 1 I = 1 Risk level = Low	management plans will study and propose mitigation measures against the impacts of climate change.	
7	People who currently benefit economically from existing landfills are not eligible to take up new roles or be relocated to do so.	Socio-economic	This risk is real if people had access to landfills. As explained in the adjacent column, this is not the case in Constantine. L = 5 I = 2 Risk level = Moderate	Field visits to the site of Boughareb sanitary landfill and the adjacent solid waste disposal site found in Ben Badis area revealed that there was no access to these sites to be able to derive economic benefits from landfills. The sanitary landfill is covered with a layer of compacted soil and there is no way to have access the underlying waste. The adjacent solid waste disposal area is fenced and has boundaries that are controlled by the authorities.	Project Coordinator

				The visit of the transfer centre of Ain S'mara also revealed that there were no ways for people to recover recyclable waste from the site. Its boundaries are fenced and the main access is controlled.	
8	The project may cause economic displacement (p e.g. loss of assets or access to resources due to land acquisition or access restrictions, even in the absence of physical relocation. Given the nature of this project, it is likely that small groups of people (i.e. waste collectors) who currently rely on waste from landfills for subsistence encounter difficulties when waste that ends up in landfills is reduced. However, this may require the relocation of people from the landfill to Constantine or Sétif. This can lead to dissatisfaction resulting in high costs for their relocation.	socioeconomic	This risk was revised to clarify the potential loss of economic activities by operators (mostly informal) in the treatment of channels of current solid waste. As explained above (see above risk) there is no risk of loss of employment or revenues related to access to the landfill and the transfer station. As explained in the context of social and environmental management, there is a high risk elsewhere in the waste management chain. These risks do not relate to the relocation of people but rather to compensation for the shortfall in revenues or loss of jobs. <u>Constantine</u>: There are two dimensions of this socioeconomic risk: (i) there are informal operators upstream of the household waste chain that collect dry material (plastic, cardboard, glass, ferrous) for recycling. Upstream sorting will not have an adverse impact on these collectors if households continue to provide them with recyclable material. The negative impacts will follow if households decide to do otherwise, that is to deliver the recyclable part to the project; and (ii) development of 500 tonnes / day and 750 tonnes / day of solid waste implies that the EPIC managing the sanitary landfill will not have enough waste for its operational needs. The pressure for job and income loss is hence high, and will increase with the introduction to the potential expansion of the project. <u>Sétif:</u> The project will draw 28% of poultry manure stocks on the site of Ksar El Abtal. So potentially, operators that carry the poultry waste from this site to the south of the country will suffer 28% income loss, even if job losses are more limited (see Annex SA4). L = 5	There is a waste sorting centre adjacent to the transfer station (Constantine) where large sorting containers are installed. Some containers are compactor-like. The waste sorting centre also has a baler for cardboard and plastic. The bales of recovered materials, mainly from large waste producers, such as commercial and trade operators are sold to recyclers and this will always be the case with the UNDP-GEF project. Under the activities of Output 2.4, informal groups will be encouraged to participate in recycling activities through the project, and with it to prevent the possible loss of jobs. A framework for social and environmental management was developed for the project, with effectively to manage the risks. Relying on this framework, the project will finance social and environmental impact studies for all project sites (Activities 1.3.2, 1.4.3 and 2.1.3) and the formulation of social and environmental management plans. Social management plans will aim to find ways to mitigate the risk of loss of jobs and income.	Project Coordinator

			I = 4 Risk level = High		
9	The project can result in increased risks for the health of persons handling hazardous waste and organic waste. It is likely that workers handling poultry manure are affected. The poultry manure is a vector of diseases and other ailments. In addition, the project may lead to the production of hazardous and non-hazardous waste; the project consumes significant resources (energy). The waste separation and processing plant will consume a significant amount of energy. There will be a risk of large volumes of household hazardous waste that must be handled and disposed. In addition, there is a risk of pollution by heavy metals resulting from the use of fertilizers to be produced from waste for electricity production. It may be difficult to sort and remove any heavy metals such as lead and mercury from solid	Health and safety	The description of this risk has been updated at PPG to include a very important element concerning the treatment of waste water and its discharge by waste transformation plants. Another element is the air emissions from electricity production. The social and environmental management framework has shown that environmental impact assessment was made for the solid waste recovery and transformation plant in Constantine, and that the study has shortcomings (Annex H). Above all, it is not in line with UNDP (or the World Bank) social and environmental safeguards standard. Impact studies had not yet been made for activities in Sétif. L = 5 I = 3 Risk level = Substantial	These risks are covered under the ESMF of the project. This framework makes provision to carry out ESIAs in line with UNDP standards (World Bank) social and environmental safeguards. Subsequently, ESMPs will be formulated for the implementation by the project. Building on the ESMF, the UNDP-GEF project will finance social and environmental impact studies for all project sites (Activities 1.3.2, 1.4.3 and 2.1.3) and the formulation of social and environmental management plans in the first year of the project. The ESMPs will aim to find ways to mitigate the risks of jobs and income losses. Activities related to the handling of poultry waste and hazardous waste such as heavy metals include mitigation measures to ensure that if such events did occur then these are addressed in effective and efficient ways, and that affected people get the appropriate medical care and treatment. Training and special equipment will be provided for the safe handling of hazardous substances recovered during the waste sorting process (capacity building provided under Outputs 2.6 and 2.8). In addition, the PPG stage will require that activities to reduce the consumption of household hazardous wastes in Constantine and Sétif are developed (Outputs 1.1 and 1.5). In addition, activity 1.2.2 will implement appropriate procedures for the collection of household hazardous waste in Constantine.	Project Coordinator

	waste. These metals can be found in the waste from the power station, which could contaminate the fertilizer and agricultural land. Further, the construction and operation of household waste sorting and processing units in Constantine, and of a poultry waste processing unit in Sétif, brings issues of labor management, occupational health and safety, construction site management, sexual exploitation and abuse, emergency preparedness and response, environmental and social monitoring of contractors, and the need for a worker grievance mechanism. Furthermore, road and traffic risks are associated with SOPTE's direct involvement in the collection and transport of solid waste, as well as its involvement in the marketing of fertilizer produced from poultry waste.				
10	The transformation of solid wastes will general	Environmental	Constantine	Constantine	Project Coordinator

	effluents and require electricity for operation. In the case where solid waste will be combusted, waste transformation will generate solid wastes in the form of bottom ashes. Further, there will be stack emissions that can pollute the air.		The household waste processing unit in Constantine will generate residual waste, most particularly extracted liquid waste (in excess of 40% of initial weight), waste that cannot be reused (up to 30% of dried waste), bottom ashes from incinerated waste (over 25% of incinerated material) and fine particles from the incineration process if they are not filtered or precipitated. The volume of liquid extracted from the waste before processing will be very significant and could strain the capacity of the dedicated sewerage system. The sorting and processing units will also require a source of energy that might not necessarily come from waste, such as gas from the existing network. In addition, the use of a landfill, such as the Boughareb CET, is still necessary for the non-reusable waste and the ashes, which might represent 20% of the processed waste by weight. <u>Sétif</u> The processing of poultry waste might produce residual waste, most particularly liquid waste, and will require a yet undetermined source of energy. L = 5 I = 3 Risk level = Substantial	The ESIA and ESMP that SOPTE will produce for the Constantine sorting and processing units (see above) will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations. Energy consumption can eventually be offset by energy production from the 2MWe steam powered turbine. It is expected that the project will be generating 14,980 MWh (2 MWe installed capacity) of electricity annually at the end of the 5th year. Training and special equipment will be provided for the safe handling of hazardous substances recovered during the waste sorting process (capacity building provided under Outputs 2.6 and 2.8). In addition, the PPG stage will require that activities to reduce the consumption of household hazardous wastes in Constantine and Sétif are developed (Outputs 1.1 and 1.5). In addition, activity 1.2.2 will implement appropriate procedures for the collection of household hazardous waste in Constantine. <u>Sétif</u> The ESIA and ESMP that SOPTE will produce for the Sétif poultry waste processing unit (see above) will assess all potential sources of pollution, and define proportional but sufficient mitigation measures to meet international standards and national laws and regulations.	
11	Construction and operation of solid waste processing units.	Technical	The Project includes the construction and operation of household waste sorting and processing units in Constantine, and of a poultry waste processing unit in Sétif. L = 5 I = 4 Risk level = High	As the project is categorized as 'High' risk, an ESMF (Annex H) was prepared, covering all risks identified in the SESP. As per the ESMF, an ESIA will be conducted and ESMP prepared during project implementation for the waste processing units in Constantine and Sétif. The ESIAs are fully incorporated in the project design under Output 1.3 for the setting up of a waste recovery and transformation plant for	Project Coordinator

				poultry waste in Sétif; Output 1.4 for the construction of a centralized municipal solid waste sorting plant in Constantine; and Output 2.1 concerning the construction of a solid waste transformation plant, including waste-to-energy unit in Constantine.	
12	Project could perpetuate the current low representation of women in the construction sector.	Social / cultural	Although women are well represented in the management of solid waste in Constantine (SOPTE, EPIC, Government), they are not well represented in the construction sector. L = 5 I = 2 Risk level = Moderate	The ESIA and ESMP terms of reference for the waste processing units require that contractors include procedures for the equitable gender selection of labor. These are included in Outputs 1.3, 1.4 and 2.1, which will develop the technical specifications for construction the waste collection, recovery and transformation infrastructure, as well as Output 3.2 that will support the production of mechanical parts.	Project Coordinator
13	The conversion of the current informal poultry waste management site in Setif, into a unit to transform poultry waste into fertilizer would require that current occupants leave the site.	Social	The Ksar el Abtal was selected for the poultry waste transformation unit because it is currently the main site used for the informal drying of poultry waste. The new unit would very significantly reduce the negative environmental impacts currently associated with the site, such as odors, nitrate contamination of ground and surface water, flies and mosquitoes. L = 5 I = 5 Risk level = High	A Resettlement Action Plan (RAP) might be necessary if the land acquisition by SOPTE involves involuntary resettlement. A RAP would not be necessary if the land is acquired commercially through a willing buyer/willing seller process. In that case, documentation of the process would suffice. The Project will in no instance support eviction, and if necessary, an alternative site will be considered as per the Output 1.3.	Project Coordinator

Annex J: GHG Emission Reduction calculations

The project produces greenhouse gas (GHG) emission reductions in several ways as shown in Figure 2 in the ProDoc. The PIF identified 5 main ways in which GHG emission reductions accrue. These are: (1) avoided methane from the diversion of the organic fraction of municipal solid waste (MSW) from landfill; (2) reduced transportation fuel due to optimized collection of waste and reduced waste transportation distances; (3) substitution of chemical fertilizers using fertilizer produced using the organic fraction of MSW; (4) recycling of plastic; and (5) electricity production from a fraction of organic waste. The following sections discuss the direct emission reductions resulting from these five levers. This annex also provides calculations for the consequential (indirect) GHG emission reductions.

Before dealing with GHG emission calculations, it is important to first establish the value added pathways for an integrated MSW management in Constantine and Sétif. The two cities exhibit different characteristics, and GHG emission reductions are not similar. The case of Sétif is simpler and is discussed first.

Sétif: The underlying activity is the conversion of 600 tonne of poultry waste into 100 tonne of fertilizer on a daily basis. The reduced volume of fertilizer, coupled with the use of larger capacity trucks for transporting the fertilizer to final destinations will result in reduced distances travelled, and hence reductions in transportation fuel. Using a conservative approach to GHG accounting, the daily use of the 100 tonne of fertilizer to substitute for chemical fertilizers is assumed not to produce any incremental GHG emission reductions over the 600 tonnes of poultry waste that are already used for agricultural purposes.

Constantine: MSW management in Constantine will yield GHG emission reductions from the 5 pathways mentioned above. In order to carry out the GHG emission reduction calculations, it is important to know the waste value added processes that are shown in Table 1. The project will proceed in two phases, with the second phase starting in 2023. The first and second phases will process 500 tonne and 750 tonne MSW daily, respectively.

Table 1. Transformation of MSW in Constantine.

Type of waste	% composition	First phase		Second phase (2023)	
Organic	63.4	85% transformed into fertilizer	15% landfilled	85% transformed into fertilizer	15% electricity production
Paper/carton	6.9	62% diverted to market[33]	38% landfilled	62% diverted to market	38% electricity production
Plastic	12.8	72% recycled into raw materials	28% landfilled	72% recycled into raw materials	28% electricity production
Glass	0.5	20% diverted to market	80% landfilled	20% diverted to market	80% landfilled
Metal	1.4	61% diverted to market	39% landfilled	61% diverted to market	39% landfilled
Textiles	5	8% diverted to market	92% landfilled	8% diverted to market	92% electricity production
Hazardous	1.1	17% diverted to market	83% landfilled	17% diverted to market	83% landfilled
Other inert	0.7	30% diverted to market	70% landfilled	30% diverted to market	70% landfilled
Nappies	8	5% diverted to market	95% landfilled	5% diverted to market	95% electricity production
Other	0.2	29% diverted to market	61% landfilled	29% diverted to market	61% landfilled
Total	**100**				

Source: SOPTE

DIRECT GHG EMISSION REDUCTIONS

[33] "Diverted to market" means that the waste is recovered and sold to market operators without any transformation.

1. Avoided methane from landfill

The IPCC methodology has been adopted for the calculation of avoided methane from landfill when the organic fractions of MSW are used either to produce fertilizers or diverted to market (Table 1). The First Order Decay (FOD) method (Tier 2) has been used as given in Eq(1).

$$CH_4\ generated\ in\ year\ t\ \left(\frac{Gg}{yr}\right) = \sum_x^t \left[(A \times k \times MSW_T(x) \times MSW_F(x) \times L_0(x)) \times\ e^{-k(t-x)}\right] \quad \text{Eq(1)}$$

Where, t = year of accounting
x = input data year
$A = (1 - e^{-k})/k$; normalisation factor
k = methane generation rate constant (1/yr)
$MSW_T(x)$ = Total municipal solid waste (MSW) generated in year x (Gg/yr or 10^3 tonne/yr)
$MSW_F(x)$ = Fraction of MSW disposed at solid waste disposal site (SWDS) in year x
$L_0(x)$ = Methane generation potential [MCF(x) x DOC(x) x DOC_F x F x 16/12 (Gg CH4 / Gg(waste)]
MCF(x) = methane correction factor
DOC(x) = Degradable organic carbon (DOC) in year x (fraction) (Gg C / Gg(waste)
DOC_F = Fraction of DOC dissimilated
F = Fraction by volume of CH_4 in landfill gas
16/12 = Conversion from C to CH_4

In the case of Constantine, the total amount of MSW is initially 500 tonne/day (t/day), increasing to 750 t/day in 2023 when the capacity of the centralised MSW sorting facility is increased. The parameters used in Eq(1) are shown in Tables 2 and 3.

Table 2. Parameters used to calculate methane generation potential.

DOC_F	0.75
Methane correction factor, MCF	0.8[34]
F	50%

Source: IPCC 2006

Table 3. Values of DOC and k for different types of solid waste.

	Food	Garden	Paper	Textiles	Nappies
DOC	0.19	0.588	0.13	0.04	0.002
k (1/yr)	0.4	0.17	0.07	0.07	0.05

Source: IPCC 2006

The baseline scenario was developed using population and total solid waste generation provided by SOPTE and corroborated with data given in the SNGID 2035[35] for Constantine. The data are shown in Table 4 to 2035 for alignment with the SNGID 2035. Interpolation was used to generate an annual time series running from 2008 to 2035.

Table 4. Population and per capita solid waste generation in Constantine: 2008 – 2035.

	2008	2019	2035
Population	938,500	1,105,500	1,430,000
Total MSW (t)	365,000	445,300	564,750

Source: SOPTE & SNGID 2035

Using the data given in Tables 1 to 4 in Eq(1) gives the incremental emission reductions (tCO_{2e}) shown in Table 5. A global warming potential (GWP) of 25 was applied to convert CH_4 to CO_{2e}.

Table 5. Emission reductions accruing from avoided methane at landfill: 2020 – 2035.

[34] The MCF is chosen because the landfill is not managed as sanitary landfills and the depth of waste is typically more than 5 m.
[35] MEER (2019) Stratégie Nationale de Gestion Intégrée des Déchets 2035.

Year	2020	2021	2022	2023	2024	2025	2030	2035
tCO2e/yr	0	442	40,515	67,484	145,817	216,492	344,926	366,502

Source: Project calculations

2. Reduced transportation emissions

Emission reductions accruing from reduced transportation occurs in both Sétif and Constantine.

Sétif

The reduced need for transportation arises from two factors, namely (1) the lower quantities of fertilizer generated from converting 600 t/day of poultry waste to 100 t/day of fertilizers; and (2) the use of larger trucks (20 t rather than 10 t capacity), effectively reducing number of trips by a further factor 2. The reductions in diesel consumed has been calculated for different destinations (South of the country) based on data of the average share of poultry waste that is sold in the different locations and distance of these destinations (Annex SA4). The fuel savings are shown in Table 6 using the assumption that a 10 t and 20 t truck consume 0.5 L(diesel)/km and 0.7 L(diesel)/km, respectively.

Table 6. Fuel savings from reduced fertilizer transportation needs (L/day).

Fuel saved (L/day)	Eloued	Biskra	Ouergla	Ghardaia	Meniaa
Reduction of fertilizer from 600 t/day to 100 t/day	7,700	1,115	906	456	9
Doubling the truck capacity	1,088	156	127	64	31

Source: SOPTE

The annual fuel savings is 3,094,608 L(diesel) based on 22 days of poultry waste transportation per month. Using a density of diesel = 0.85 kg/L[36] and an emission factor = 3.20853 $kgCO_2/kg(fuel)$[37], the annual emission reduction is calculated to be 8,440 tCO_2/year.

Constantine

In Constantine, and for sectors on which SOPTE operates, there are three ways in which fuel savings will accrue from the implementation of the project: (1) optimised collection of solid waste that is planned under output 1.2; (2) waste transportation distance gained because the project site will be 32.5 km closer than the solid waste disposal site (SWDS) – i.e. 65 km gained for a return trip. In this case, it is estimated that fuel savings will be 18 L(diesel) per round trip averaged over all truck types; and (3) reduced number of trips for waste transported from the transfer station to the project site through the use of trucks with capacity 40 m^3 as opposed to 10 m^3 in the baseline. This option yields a savings of 370 L(diesel) per round trip, and a total of 6,290 L(diesel) per day for 18 round trips per day – i.e. 2,289,560 L(diesel)/year.

The data used to estimate GHG emission reductions from optimised waste collection and waste transportation distance avoided are given in Table 7 by type of truck that will be assigned by SOPTE. Each truck does one round trip per day, and waste collection is done 7 days per week over the entire year. Total savings from optimised waste collection and distance avoided is expected to be around 393,462 L(diesel)/year.

The combination of the 3 sources of fuel savings on the sectors operated by SOPTE gives an annual GHG emission reduction of 19,681 tCO_{2e}/yr.

Table 7. Estimation of fuel savings from optimised waste collection in Constantine.

Truck	Capacity	Number of trucks	Fuel consumption (L(diesel)/km)	Fuel savings through optimised transportation (L/round trip)	Total fuel savings (L/year)
ISUZU NPR	8	3	0.238	0	19,656
DAEWOO	13	6	0.252	19.11	81,048
ISUZU FVR	15	10	0.271	24.44	154,482
FORD	17	4	0.294	28.11	67,136

[36] Speight J.G. (2011) Production, properties and environmental impact of hydrocarbon fuel conversion, Advances in Clean Hydrocarbon Fuel Processing, 54-82; https://doi.org/10.1533/9780857093783.1.54.

[37] Emission factor = 74,100 kgCO2/TJ and NCV = 43.3 TJ/Gg(diesel).

ISUZU FVZ	20	4	0.321	30.86	71,140

Source: SOPTE (data); calculations (project)

El Khroub

The project will also receive MSW from 2 sectors in El Khroub that are not serviced by SOPTE. In this case, the expected gains in fuel savings will accrue from the avoided distance of 32.5 km between the project site and the SWDS. Data provided by SOPTE shows that the fuel savings will amount to 630 L(diesel)/day or 229,320 L(diesel)/yr. The corresponding GHG emission reduction is 625 tCO_{2e}/yr.

Electric vehicles

The UNDP-GEF project intends to pilot two electric waste collection trucks, and these are expected to be done on sectors serviced by SOPTE as given in Table 8. For each sector there is one round trip per day that is carried out for 7 days per week. In the baseline, and using a conservative approach, these sectors would be serviced using a $20m^3$ truck with an average diesel consumption of 0.32 L/km. The baseline GHG emissions are estimated at 45 tCO_{2e}/yr. For the electric vehicle, an electrical consumption of 1 kWh/km is assumed. The grid emission factor is taken to be 0.551 tCO_2/MWh.[38] The project emission is calculated as 28.4 tCO_{2e}/yr. Hence, the GHG emission reductions are 16.6 tCO_{2e}/yr. The methodology follows AMS-III.C – Small-scale methodology – Emission reductions by electric and hybrid vehicles (version 15).

Table 8. Characteristics of sectors to be serviced by electric waste collection trucks.

Sector	Collection circuit length (km)	Transport distance to transfer station (km)	Total distance (km/yr)
Cité Tlemcen +1100	3.65	28.43	11,677.1
Frères Ferrad + Sonatiba	6.81	28	12,670.8
Daksi 01 supérieur (coté wilaya)	3.68	21.9	9,311.1
Daksi 02 inférieur	2.31	23.01	9,216.5
Daksi 03 (coté marché 740 locaux)	2.8	21.12	8,706.9

Source: SOPTE (data); calculations (project)

3. Substitution of chemical fertilizers

The project will result in avoided N_2O emissions through the substitution of N-based chemical fertilizers with fertilizers produced from the organic fractions of organic waste. Using the principle of conservativeness in GHG accounting, it is assumed that value added to poultry waste does not produce any incremental GHG emission reduction compared to the baseline where the raw poultry waste is already used as a fertilizer. Hence, only the GHG emission reductions from the use of fertilizers produced using the organic fraction of MSW is account for. If the poultry waste fertilizers were accounted for, the GHG emission reductions would be higher by 950 tCO2e/yr.

Table 9 shows the quantity of organic fertilizer that will be produced using data given in Table 1. A conversion factor of 0.2 is used for mass conversion of organic waste into fertilizer. Emission reductions are estimated using an emission reduction factor of 36 $kgCO_{2e}$ /t(organic fertilizer).[39]

Table 9. GHG emission reductions from fertilizers produced from the organic fraction of MSW.

	2020	2021	2022	2023	2024
Quantity of organic waste (t/yr)	98,935	98,935	98,935	98,935	148,403
Quantity of MSW transformed (t/yr)	0	84,421	84,421	84,421	126,632
Fertilizer produced (t/yr)	0	16,884	16,884	16,884	25,326
GHG emission reductions (tCO_{2e}/yr)	0	608	608	608	912

Source: project calculations

4. Energy saved by recycling plastic

[38] European Investment Bank, EIB (2018) EIB Project Carbon Footprint Methodologies: Methodologies for the Assessment of Project GHG Emissions and Emission Variations.

[39] Data obtained from the UNDP-GEF project entitled COMPOST (PIMS 5541).

As shown in Table 1, plastic is the only dry matter that will be recycled in the project. A fraction of other dry matter such as paper and glass will be diverted from the SWDS but without any transformation. These will be sold on to commercial operators. As such, these dry materials will not generate any additional GHG emission reduction from value addition.

According to AMS-III.AJ – Small-scale methodology – Recovery and recycling of materials from solid wastes (version 7), GHG emission reductions can be claimed for energy avoided from the preparation of raw inputs for transformation into final products. In the case of the project, plastic wastes will be transformed into plastic pellets that will displace virgin pellets in the baseline. Baseline energy factors for producing virgin pellets were sought from plastic companies operating in Sétif.[40] The energy intensities for producing plastic straw and pellets were 123.3 kWh/t(plastic) and 250 kWh/t(plastic) giving a total of 373.3 kWh/t(plastic). Using a grid emission factor of 0.551 tCO2/MWh and the data given in Table 1, annual GHG emission reductions are given in Table 10.

Table 10. Emission reductions accruing from the transformation of plastic.

	2020	2021	2022	2023	2024
Quantity of plastic waste (t/yr)	0	19,968	19,968	19,968	29,952
Quantity of plastic transformed (t/yr)	0	14,377	14,377	14,377	21,565
Electricity consumed in baseline to produce pellets (MWh/yr)	0	5,367.4	5,367.4	5,367.4	8,051.1
GHG emission reductions (tCO_{2e}/yr)	0	2,957	2,957	2,957	4,436

Source: project calculations

5. Electricity generation from MSW

The project will produce electricity from various fractions of MSW through thermal general as shown in Table 1. This will take place in the 2nd phase of the project – i.e. thermal plant is commissioned in 2023 with GHG emission reductions accruing in 2024. GHG emission reductions were estimated using the rated power capacity of electrical generation (2MW); load factor (90%); and availability factor (95%). Using a grid emission factor = 0.551 tCO_2/MWh, the annual GHG emission reduction arising from electricity generation from MSW is 8,254 tCO_2/yr.

6. Annual and cumulative direct GHG emission reductions

Based on the above calculations, the direct GHG emission reductions accruing from the project are summarized in Table 11. The cumulative GHG emission reduction over the 5-year project lifetime is 357,279 tCO_{2e}. Modeling over the 15 year duration gives direct lifetime GHG emission reductions equal to 4,301,757 tCO_{2e}.

Table 11. Direct GHG emission reductions during the 5-year project lifetime.

Source of GHG emission reductions	*GHG emission reductions (tCO_{2e}/yr)*					
	Yr1	Yr2	Yr3	Yr4	Yr5	**Total**
Reduced transportation distance	0	19,681	19,681	19,681	19,681	**78,725**
Avoided methane at landill	0	442	40,515	67,484	145,817	**254,258**
Substitution of chemical fertilizers	0	608	608	608	912	**2,735**
Recycling (plastic)	0	2,957	2,957	2,957	4,436	**13,307**
Electricity generation	0	0	0	0	8,254	**8,254**
Total	**0**	**23,688**	**63,761**	**90,730**	**179,100**	**357,279**

INDIRECT GHG EMISSION REDUCTIONS

Indirect emission reductions from avoided methane from landfill due to composting were estimated using the bottom-up and top-down approaches.

<u>Bottom-up</u>

[40] Marouane Industrie Sétif and Entreprise El- Mazen de Sétif – data collected by Mr Rabah Kerbachi, National Coordinator, PPG team.

The bottom-up indirect emissions arising from composting has been calculated by applying a replication factor of 3 to the direct effects of the GEF investments in the project. This approach gives an estimated indirect emission reduction of approximately 12.91 $MtCO_{2e}$ (over 15 years). This assumes that the waste transformation processes that are replicated are exactly the same as in the UNDP-GEF project.

Top-down

The top-down indirect emissions has been estimated from the market potential of scaling up the project activities. This can be done by replicating the experience of the project in other 48 wilayas in Algeria. Alternatively, this situation can be equated to the projections made in the SNGID 2035. The SNGID 2035 has developed four GHG emission scenarios, of which scenario 2 appears to be more achievable given the prevailing barriers in MSW in Algeria. Scenario 2 assumes the following: (1) 100% collection of MSW; (2) increase composting and recycling to 15% each; and (3) landfill remaining MSW with the capture of methane for electricity production and adequate treatment of effluents. Table 12 summarizes the cumulative GHG emission reductions between 2017 and 2035. In order to match more closely the scenario 2 emissions to the sources of GHG emission accruing from the UNDP-GEF, only avoided methane from composting and plastic recycling are taken into account. This gives a cumulative top-down GHG emission reduction of 19.24 $MtCO_{2e}$. Given the prevailing barriers in the sector, it is assumed that these emission reductions will take place once the UNDP-GEF project has been piloted. Using a GEF causality factor of 0.8, the top-down emission reduction is estimated at 15.40 $MtCO_{2e}$.

Table 12. Cumulative GHG emission reductions from scenario 2 in SNGID 2035: 2017-2035 ($MtCO_{2e}$).

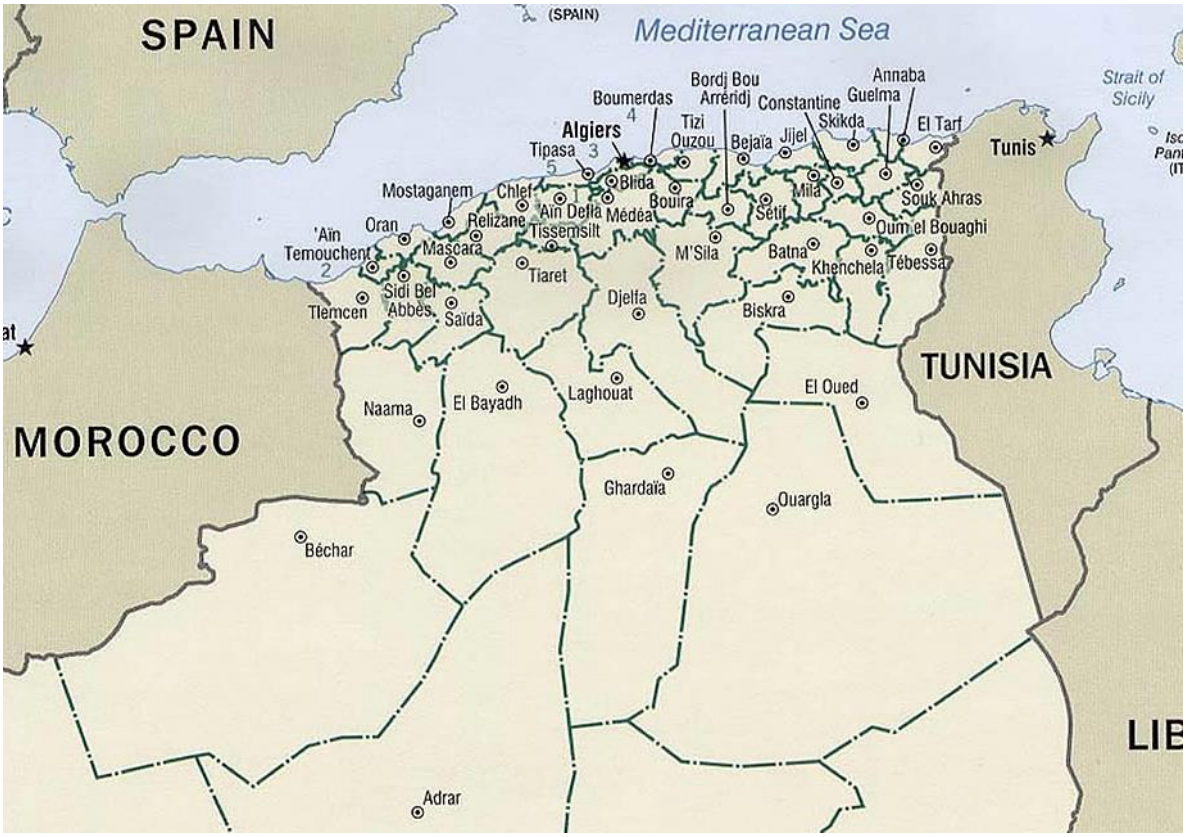
Landfill gas capture and electricity production	Avoided methane from composting	Plastic recycling	Paper recycling	Glass recycling	Metal recycling
35.58	11.03	8.21	0.05	0.03	0.10

Source: SNGID 2035 (Mission 1 – Baseline assessment synthesis report)

Annex K: Project map and Geospatial Coordinates of project sites

The project targets 2 Wilayas (municipalities) in Algeria: Constantine and Sétif.

Constantine : N 36°21’54” E 6°36’53”
Sétif : N 36°11’28” E 5°24’49”



Annex L: GEF Core indicators

Core Indicator 6	**Greenhouse gas emission mitigated**					***(Tons)***
			Tons (6.1+6.2)			
			Entered		Entered	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)		1.88 million	4,301,757		
	Expected CO2e (indirect)		1.13 million	12,905,271		
Indicator 6.1	Carbon sequestered, or emissions avoided in the AFOLU sector					
			Tons			
			Entered		Entered	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)					
	Expected CO2e (indirect)					
	Anticipated Year					
Indicator 6.2	Emissions avoided					
			Hectares			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
	Expected CO2e (direct)		1.88 million	4,301,757		
	Expected CO2e (indirect)		1.13 million	12,905,271		
	Anticipated Year			*2035*		
Indicator 6.3	Energy saved					
			MJ			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
Indicator 6.4	Increase in installed renewable energy capacity per technology					
		Technology	Capacity (MW)			
			Expected		Achieved	
			PIF stage	Endorsement	MTR	TE
		Biomass	*2 MW*	*2 MW*		
		(select)				
Core Indicator 11	**Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment**					***(Number)***
			Expected		Number Achieved	
			PIF	Endorsement	MTR	TE
		Female	250,000	371,250		
		Male	250,000	378,750		
		Total	*500,000*	*750,000*		

Annex M: GEF 7 Taxonomy

Level 1	Level 2	Level 3	Level 4
☒**Influencing models**			
	☒**Transform policy and regulatory environments**		
	☒**Strengthen institutional capacity and decision-making**		
	☒**Convene multi-stakeholder alliances**		
	☒**Demonstrate innovative approaches**		
	☐**Deploy innovative financial instruments**		
☒**Stakeholders**			
	☐**Indigenous Peoples**		
	☒**Private Sector**		
		☐Capital providers	
		☐Financial intermediaries and market facilitators	
		☒Large corporations	
		☒SMEs	
		☐Individuals/Entrepreneurs	
		☐Non-Grant Pilot	
		☐Project Reflow	
	☒**Beneficiaries**		
	☒**Local Communities**		
	☒**Civil Society**		
		☐Community Based Organization	
		☒Non-Governmental Organization	
		☒Academia	
		☐Trade Unions and Workers Unions	
	☒**Type of Engagement**		
		☒Information Dissemination	
		☒Partnership	
		☒Consultation	
		☒Participation	
	☒**Communications**		
		☒Awareness Raising	
		☒Education	
		☒Public Campaigns	
		☒Behavior Change	
☒**Capacity, Knowledge and Research**			
	☒**Enabling Activities**		
	☒**Capacity Development**		
	☒**Knowledge Generation and Exchange**		
	☐**Targeted Research**		
	☐**Learning**		
		☐Theory of Change	
		☐Adaptive Management	
		☐Indicators to Measure Change	
	☐**Innovation**		
	☒**Knowledge and Learning**		
		☒Knowledge Management	
		☐Innovation	
		☒Capacity Development	
		☒Learning	
	☐**Stakeholder Engagement Plan**		
☒**Gender Equality**			
	☒**Gender Mainstreaming**		
		☒Beneficiaries	

		☐Women groups	
		☐Sex-disaggregated indicators	
		☐Gender-sensitive indicators	
	☒**Gender results areas**		
		☐Access and control over natural resources	
		☒Participation and leadership	
		☐Access to benefits and services	
		☒Capacity development	
		☒Awareness raising	
		☒Knowledge generation	
☒**Focal Areas/Theme**			
	☐**Integrated Programs**		
		☐Commodity Supply Chains ([41]Good Growth Partnership)	
			☐Sustainable Commodities Production
			☐Deforestation-free Sourcing
			☐Financial Screening Tools
			☐High Conservation Value Forests
			☐High Carbon Stocks Forests
			☐Soybean Supply Chain
			☐Oil Palm Supply Chain
			☐Beef Supply Chain
			☐Smallholder Farmers
			☐Adaptive Management
		☐Food Security in Sub-Sahara Africa	
			☐Resilience (climate and shocks)
			☐Sustainable Production Systems
			☐Agroecosystems
			☐Land and Soil Health
			☐Diversified Farming
			☐Integrated Land and Water Management
			☐Smallholder Farming
			☐Small and Medium Enterprises
			☐Crop Genetic Diversity
			☐Food Value Chains
			☐Gender Dimensions
			☐Multi-stakeholder Platforms
		☐Food Systems, Land Use and Restoration	
			☐Sustainable Food Systems
			☐Landscape Restoration
			☐Sustainable Commodity Production
			☐Comprehensive Land Use Planning
			☐Integrated Landscapes
			☐Food Value Chains
			☐Deforestation-free Sourcing
			☐Smallholder Farmers
		☐Sustainable Cities	
			☐Integrated urban planning
			☐Urban sustainability framework
			☐Transport and Mobility
			☐Buildings
			☐Municipal waste management
			☐Green space
			☐Urban Biodiversity
			☐Urban Food Systems
			☐Energy efficiency
			☐Municipal Financing
			☐Global Platform for Sustainable Cities
			☐Urban Resilience
	☐**Biodiversity**		

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		☐Protected Areas and Landscapes	
			☐Terrestrial Protected Areas
			☐Coastal and Marine Protected Areas
			☐Productive Landscapes
			☐Productive Seascapes
			☐Community Based Natural Resource Management
		☐Mainstreaming	
			☐Extractive Industries (oil, gas, mining)
			☐Forestry (Including HCVF and REDD+)
			☐Tourism
			☐Agriculture & agrobiodiversity
			☐Fisheries
			☐Infrastructure
			☐Certification (National Standards)
			☐Certification (International Standards)
		☐Species	
			☐Illegal Wildlife Trade
			☐Threatened Species
			☐Wildlife for Sustainable Development
			☐Crop Wild Relatives
			☐Plant Genetic Resources
			☐Animal Genetic Resources
			☐Livestock Wild Relatives
			☐Invasive Alien Species (IAS)
		☐Biomes	
			☐Mangroves
			☐Coral Reefs
			☐Sea Grasses
			☐Wetlands
			☐Rivers
			☐Lakes
			☐Tropical Rain Forests
			☐Tropical Dry Forests
			☐Temperate Forests
			☐Grasslands
			☐Paramo
			☐Desert
		☐Financial and Accounting	
			☐Payment for Ecosystem Services
			☐Natural Capital Assessment and Accounting
			☐Conservation Trust Funds
			☐Conservation Finance
		☐Supplementary Protocol to the CBD	
			☐Biosafety
			☐Access to Genetic Resources Benefit Sharing
	☐**Forests**		
		☐Forest and Landscape Restoration	
			☐REDD/REDD+
		☐Forest	
			☐Amazon
			☐Congo
			☐Drylands
	☐**Land Degradation**		
		☐Sustainable Land Management	
			☐Restoration and Rehabilitation of Degraded Lands
			☐Ecosystem Approach
			☐Integrated and Cross-sectoral approach
			☐Community-Based NRM
			☐Sustainable Livelihoods
			☐Income Generating Activities

			☐Sustainable Agriculture
			☐Sustainable Pasture Management
			☐Sustainable Forest/Woodland Management
			☐Improved Soil and Water Management Techniques
			☐Sustainable Fire Management
			☐Drought Mitigation/Early Warning
		☐Land Degradation Neutrality	
			☐Land Productivity
			☐Land Cover and Land cover change
			☐Carbon stocks above or below ground
		☐Food Security	
	☐**International Waters**		
		☐Ship	
		☐Coastal	
		☐Freshwater	
			☐Aquifer
			☐River Basin
			☐Lake Basin
		☐Learning	
		☐Fisheries	
		☐Persistent toxic substances	
		☐SIDS : Small Island Dev States	
		☐Targeted Research	
		☐Pollution	
			☐Persistent toxic substances
			☐Plastics
			☐Nutrient pollution from all sectors except wastewater
			☐Nutrient pollution from Wastewater
		☐Transboundary Diagnostic Analysis and Strategic Action Plan preparation	
		☐Strategic Action Plan Implementation	
		☐Areas Beyond National Jurisdiction	
		☐Large Marine Ecosystems	
		☐Private Sector	
		☐Aquaculture	
		☐Marine Protected Area	
		☐Biomes	
			☐Mangrove
			☐Coral Reefs
			☐Seagrasses
			☐Polar Ecosystems
			☐Constructed Wetlands
	☐**Chemicals and Waste**		
		☐Mercury	
		☐Artisanal and Scale Gold Mining	
		☐Coal Fired Power Plants	
		☐Coal Fired Industrial Boilers	
		☐Cement	
		☐Non-Ferrous Metals Production	
		☐Ozone	
		☐Persistent Organic Pollutants	
		☐Unintentional Persistent Organic Pollutants	
		☐Sound Management of chemicals and Waste	
		☐Waste Management	
			☐Hazardous Waste Management
			☐Industrial Waste
			☐e-Waste
		☐Emissions	
		☐Disposal	
		☐New Persistent Organic Pollutants	
		☐Polychlorinated Biphenyls	

		☐Plastics	
		☐Eco-Efficiency	
		☐Pesticides	
		☐DDT - Vector Management	
		☐DDT - Other	
		☐Industrial Emissions	
		☐Open Burning	
		☐Best Available Technology / Best Environmental Practices	
		☐Green Chemistry	
	☒**Climate Change**		
		☐**Climate Change Adaptation**	
			☐Climate Finance
			☐Least Developed Countries
			☐Small Island Developing States
			☐Disaster Risk Management
			☐Sea-level rise
			☐Climate Resilience
			☐Climate information
			☐Ecosystem-based Adaptation
			☐Adaptation Tech Transfer
			☐National Adaptation Programme of Action
			☐National Adaptation Plan
			☐Mainstreaming Adaptation
			☐Private Sector
			☐Innovation
			☐Complementarity
			☐Community-based Adaptation
			☐Livelihoods
		☒**Climate Change Mitigation**	
			☐Agriculture, Forestry, and other Land Use
			☐Energy Efficiency
			☒Sustainable Urban Systems and Transport
			☒Technology Transfer
			☒Renewable Energy
			☐Financing
			☐Enabling Activities
		☐**Technology Transfer**	
			☐Poznan Strategic Programme on Technology Transfer
			☐Climate Technology Centre & Network (CTCN)
			☐Endogenous technology
			☐Technology Needs Assessment
			☐Adaptation Tech Transfer
		☐**United Nations Framework on Climate Change**	
			☐Nationally Determined Contribution
		☒**Climate Finance (Rio Markers)**	☒Paris Agreement ☒Sustainable Development Goals ☐Climate Change Mitigation 0 ☒Climate Change Mitigation 1 ☐Climate Change Mitigation 2 ☒Climate Change Adaptation 0 ☐Climate Change Adaptation 1 ☐Climate Change Adaptation 2

Annex N: Procurement Plan 2020-2021 (Year 1) (provided separately)

Annex O: Co-finance letters (provided separately)