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<b>Project title:</b> Ethiopian NAMA: Creating Opportunities for Municipalities to Produce and Operationalise Solid Waste Transformation (COMPOST)	
<b>Country:</b> Ethiopia	<b>Implementing Partner:</b> Ministry of Urban Development and Housing (MUDH)
<b>Management Arrangements:</b> National Implementation Modality (NIM)	
<b>UNDAF/Country Programme Outcome:</b>	
<i>UNDAF Outcome 2: By 2020 private-sector driven industrial and service sector growth is increasingly inclusive, sustainable, competitive and job-rich.</i>	
<i>UNDAF Outcome 5: By 2020 key Government institutions at federal and regional levels, including cities, are able better to plan, implement and monitor priority climate change mitigation and adaptation actions and sustainable resource management.</i>	
<i>UNDAF Outcome 13: By 2020, national and subnational institutions apply evidence-based, results-oriented and equity-focused decision-making, policy formulation, programme design, monitoring, evaluation and reporting.</i>	
<b>UNDP Strategic Plan Output:</b>	
<i>Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.</i>	
<b>UNDP Social and Environmental Screening Category:</b> High	<b>UNDP Gender Marker:</b> 2
<b>Atlas Proposal/Award ID (also known as 'project'):</b>	<b>Atlas output Project ID (also known as 'output'):</b>
<b>UNDP-GEF PIMS ID:</b> 5541	<b>GEF ID:</b> 9048
<b>Planned start date:</b> October 1, 2016	<b>Planned end date:</b> September 30, 2021
<b>FINANCING PLAN</b>	
GEF Trust Fund	US\$ 6,667,123
UNDP TRAC resources	US\$ 250,000
UNDP	US\$ 5,504,000
<b>(1) Total Budget administered by UNDP</b>	<b>US\$ 12,421,123</b>
<b>PARALLEL CO-FINANCING</b>	
Government	US\$ 21,604,340 (MUDH)
	US\$ 180,000 (Ethiopian Standards Agency)
	US\$ 1,653,824 (MEFCC)
	US\$ 1,639,175 (Adama City Administration)
	US\$ 3,202,803 (Bahir Dar City Administration)
	US\$ 3,078,083 (Bishoftu City Administration)
	US\$ 2,824,911 (Dire Dawa City Administration)
	US\$ 2,799,884 (Hawassa City Administration)
	US\$ 3,878,849 (Mekelle City Administration)
NGOs	US\$ 49,500 (ENDA)
	US\$ 200,000 (HOAREC)
	US\$ 47,519 (Institute for Sustainable Development)
Private Sector	US\$ 200,000 (MDLGS)
<b>(2) Total co-financing</b>	<b>US\$ 41,358,888</b>
<b>(3) Grand-Total Project Financing (1)+(2)</b>	<b>US\$ 53,780,011</b>

**Brief project description:**

The COMPOST project is designed to promote greater use of Integrated Solid Waste Management (ISWM) and Urban Green Infrastructure (UGI) approaches in Ethiopian cities and towns that will assist the Government of Ethiopia in achieving the objectives of its Growth and Transformation Plan (GTP II). This will be achieved through four outcomes: i) strengthening the regulatory and legal framework and institutional coordination mechanisms to integrate ISWM and UGI within urban systems; ii) a developed market-based system with micro and small enterprises (MSEs) that are supported professionally to ensure financial sustainability of compost production and utilisation; iii) implementation of a Nationally Appropriate Mitigation Action (NAMA) that transforms the capacity of integrated urban systems to generate large emission reductions; iv) operationalised urban systems that integrate ISWM and UGI, with quantified GHG emission reductions, within a NAMA framework.

At the end of its lifetime, the COMPOST project will deliver direct annual emission reductions from UGI initiatives and ISWM equal to approximately 306,000 and 132,321 tCO<sub>2e</sub>, respectively. These will accrue from the annual generation of 45,489 tonnes of compost from 151,629 tonnes of household organic waste, and the reforestation of 33,309 ha of degraded land by the end of the 5-year project lifetime. By assuming a lifetime of 20 years for compost facilities and managed landfills as well as for carbon sequestration and the generation of renewable biomass for thermal energy, the direct emission reductions generated by the project will be 8.33 MtCO<sub>2e</sub>, giving a GEF abatement cost of 0.80 US\$/tCO<sub>2e</sub>. The number of direct jobs created through composting by the end of the 2021 will be 744, of which at least 50% will be for women and youth. Additional direct jobs will be created by the UGI activities of the project, such as in nurseries, and digging and planting of trees. The project will produce co-benefits such as increased resilience of urban areas to drought and flooding hazards, and improved quality of life in urban areas.

**SIGNATURES**

<b>Signature:</b>	<b>Agreed by Government</b>	<b>Date/Month/Year:</b>
<b>Signature:</b>	<b>Agreed by Implementing Partner</b>	<b>Date/Month/Year:</b>
<b>Signature:</b>	<b>Agreed by UNDP</b>	<b>Date/Month/Year:</b>

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## LIST OF ACRONYMS AND ABBREVIATIONS

AfD	Agence Française de Développement
AR5	5 <sup>th</sup> Assessment Report (of the IPCC)
AEMFI	Association of Ethiopian Micro-Finance Institutions
ATA	Agricultural Transformation Agency
BAU	Business As Usual
CCBS	Climate, Community and Biodiversity Standard
CDM	Clean Development Mechanism
CH <sub>4</sub>	Methane
CO	UNDP Country Office
CPAP	Country Programme Action Plan
CPI	City Prosperity Index
CRGE	Climate Resilient Green Economy
CRGG	Climate Resilient Green Growth
CSR	Corporate Social Responsibility
DDA	Dire Dawa Administration
DRS	Displacement and Resettlement Standards
ECPI	Ethiopian Cities Prosperity Initiative
EDC	Entrepreneurship Development Centre
EDP	Entrepreneurship Development Programme
EPA	Environmental Protection Authority
ETB	Ethiopian Birr
FEMSEDA	Federal Micro and Small Enterprises Development Agency
FTE	Full-time Equivalent
FTI	Fast-track Investment
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GI	Green Infrastructure
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HoAREC	Horn of Africa Regional Environment Centre
IFPRI	International Food Policy Research Institute
IGAD	Inter-Governmental Authority on Development
INDC	Intended Nationally Determined Contribution
IPCC	Inter-governmental Panel on Climate Change
ISWM	Integrated Solid Waste Management
LED	Local Economic Development
LULUCF	Land Use, Land Use Change and Forestry
LPC	Local Project Coordinator
MACC	Marginal Abatement Cost Curve
MDLGS	Mekete Demissie Landscape and Gardening Service
MEFCC	Ministry of Environment, Forest and Climate Change
MFI	Micro-finance Institution
MoANR	Ministry of Agriculture and Natural Resources
MoFEC	Ministry of Finance and Economic Cooperation
MRV	Monitoring, Reporting and Verification
MSE	Micro and Small-scale Enterprise

<b>MSEDS</b>	Micro and Small-scale Enterprise Development Strategy
<b>MtCO<sub>2e</sub></b>	Million tonnes of Carbon Dioxide Equivalent
<b>MUDH</b>	Ministry of Urban Development and Housing
<b>NAMA</b>	Nationally Appropriate Mitigation Action
<b>NAPA</b>	National Adaptation Programme of Action
<b>NGO</b>	Non-Governmental Organisation
<b>NIM</b>	National Implementation Modality
<b>NMM</b>	New Market-based Mechanism
<b>NPD</b>	National Project Director
<b>NTQF</b>	National Technical Qualification Framework
<b>NUGIS</b>	National Urban Green Infrastructure Standards
<b>NUSWMS</b>	National Urban Solid Waste Management Standards
<b>OCSSCO</b>	Oromia Credit Savings Share Company
<b>OSH</b>	Occupational Safety and Health
<b>PASDEP</b>	Plan of Action for Sustained Development to End Poverty
<b>PET</b>	Polyethylene Terephthalate
<b>PM</b>	Project Manager
<b>PMU</b>	Project Management Unit
<b>PoA</b>	Programme of Activities (CDM)
<b>PPG</b>	Project Preparation Grant
<b>PSC</b>	Project Steering Committee
<b>RAP</b>	Resettlement Action Plan
<b>RBM</b>	Results-Based Management
<b>SBAA</b>	Standard Basic Assistance Agreement
<b>SESP</b>	Social and Environmental Screening Procedure
<b>SDG</b>	Sustainable Development Goal
<b>SNC</b>	Second National Communication to the UNFCCC
<b>SWM</b>	Solid Waste Management
<b>SWMP</b>	Solid Waste Management Proclamation
<b>tCO<sub>2e</sub></b>	Tonnes of Carbon Dioxide Equivalent
<b>ToC</b>	Theory of Change
<b>ToT</b>	Training of Trainers
<b>TVET</b>	Technical and Vocational Education and Training
<b>TWG</b>	Technical Working Group
<b>UCI</b>	Urban Cool Island
<b>UGI</b>	Urban Green Infrastructure
<b>ULG</b>	Urban Local Government
<b>ULGDP II</b>	Second Urban Local Government Development Programme
<b>UNDP</b>	United Nations Development Programme
<b>UNECA</b>	United Nations Economic Commission for Africa
<b>UNEP</b>	United Nations Environment Programme
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>US\$</b>	United States Dollar
<b>US EPA</b>	United States Environmental Protection Agency
<b>VCS</b>	Verified Carbon Standard

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## 1. DEVELOPMENT CHALLENGE

1. Climate change is exacerbating sustainable green development of Ethiopian cities and towns. The National Policy and Strategy on Disaster Risk Management (2013) of the Government of Ethiopia (GoE) details how urban centres are exposed to increasing risks of floods and forest and bush fires due to climate change in the future. Stakeholder consultations with Ethiopian Government representatives indicates that removal of tree cover for urban expansion, charcoal production and agriculture is already a concern due to the resulting adverse impacts on the environment; urban heat islands are an expected outcome and are predicted to grow in size due to temperature increases.<sup>1</sup> Similarly, increases in impervious surfaces associated with urbanisation are reducing soil infiltration and increasing surface runoff during storms.<sup>2</sup> Consequently, flooding is common in dense urban areas. Extreme flooding conditions have contributed to erosion and loss of fertile topsoil.<sup>3</sup> These conditions are already noted in the IPCC's 5<sup>th</sup> Assessment Report, AR5<sup>4</sup>.
2. Ethiopia is one of the fastest-growing economies in the world.<sup>5</sup> Ethiopian cities and towns currently produce 60% of the country's GDP<sup>6</sup> and house approximately 19.5% of Ethiopia's economically-active population.<sup>7</sup> In spite of its importance, urban growth has largely been unplanned and uncoordinated, giving rise to a range of problems, including poor land-use planning related to UGI, inefficient waste management, limited opportunities for employment and a deteriorating urban environment. Ethiopia's urbanisation growth rate reached 4.9% in 2013<sup>8</sup>, leading to an increase in energy needs that has accelerated forest degradation to a rate as high as 5%/year in some regions due to the need for fuelwood and charcoal.<sup>9</sup> The resulting deforestation has resulted in land degradation, landslides, flood risks and increased siltation in nearby water bodies.<sup>10</sup> Rapid urbanisation is adversely impacting the urban and peri-urban environment through the loss of arable soils, loss of riparian buffer zones to absorb runoff and reduce impacts to sensitive fresh water bodies, and higher risks of shortages of water supplies for households and agricultural lands.
3. Ethiopia aspires to become a middle income country by 2025, as detailed in the Climate Resilient Green Economy (CRGE) vision of the Government of Ethiopia (GoE). With the country's focus on efforts towards developing a renaissance of its cities to contribute to building a green economy, and in addition to the CRGE, Ethiopia has developed a number of strategies supporting urban green development that cover both Integrated Solid Waste Management (ISWM) and Urban Green Infrastructure (UGI). The link between SWM and UGI comes through their integration under the pillar for Environmental Sustainability under the GTP II of the Ministry of Urban Development and Housing. Urbanisation is generating a range of environmental impacts from the perspectives of both ISWM and UGI, the principal ones being:

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<sup>1</sup> US EPA (2014), *Reducing Urban Heat Islands: Compendium of Strategies*; and Ethiopia UGI draft Standards, 2014.

<sup>2</sup> Lwasa, S. (2011). *The Role of Urban and Peri-Urban Agriculture in Enhancing Food Security and Climate Change Resilience in East and West African Cities*. Report on START Grants for Global Change Research in Africa.

<sup>3</sup> Institute of Biodiversity Conservation (2005). *Site Action Plan for the Conservation and Sustainable Use of the Lake Awassa Biodiversity*.

<sup>4</sup> Niang, I., O.C. Ruppel, M.A. Abdrabo, A. Essel, C. Lennard, J. Padgham, and P. Urquhart (2014). 'Africa'. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Barros, V.R., C.B. Field, D.J. Dokken, M.D. Mastrandrea, K.J. Mach, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1,199-1,265.

<sup>5</sup> Ethiopia ranked in eighth place globally in 2014, ahead of countries including China, Nigeria, Saudi Arabia, Turkey and Brazil. *IMF World Economic Outlook*, October 2014.

<sup>6</sup> *Ethiopia's Road to Middle-Income Status Runs through Its Cities*, 3 December 2014. <http://www.citiesalliance.org/node/5118>

<sup>7</sup> Ethiopian Central Statistical Agency (CSA), 2015.

<sup>8</sup> World Bank Databank (2013). *Annual Urban Population Growth*, [www.data.worldbank.org](http://www.data.worldbank.org).

<sup>9</sup> Srinivasan S (2014). 'Extension of Deforestation in Ethiopia: A Review', *EPRA International Journal of Economic and Business Review*, Vol. 2, Issue 2.

<sup>10</sup> Government of Ethiopia - *Climate Change Resilient Urban Green Development Strategy*.

- Increasing volumes of solid waste generated in Ethiopian towns and cities:<sup>11</sup> With municipal solid waste (MSW) collected and disposed of at landfills (semi-engineered or sanitary), this waste increases the generation of methane emissions;
  - Increasing population in informal settlements, which do not necessarily benefit from the collection of MSW. The end-result is the dumping of waste in public spaces such as open areas and river banks, and the deterioration of urban open green areas and river banks;
  - Increasing demand for primary energy in urban areas, predominantly in the form of non-renewable biomass, as well as the demand for timber for construction: Both are driving rapid forest degradation and deforestation in Ethiopia.
4. To support Ethiopia’s CRGE vision for sustainable urban green growth and mitigate such adverse environmental impacts, Ethiopia must address significant capacity and financial gaps. Local governments within cities and towns lack the knowledge, capacity and financial resources necessary to implement significant greenhouse gas (GHG) emission reduction measures based on ISWM and UGI<sup>12</sup>. In spite of a range of strategies and plans promoting urban greenery in Ethiopia,<sup>13</sup> UGI activities are weakly enforced and given little importance. Dumping areas require cleaning to be able to support Ethiopia’s UGI Standards on urban greenery development in open green spaces and along river banks. Moreover, almost all cities and towns in Ethiopia collect and dispose of only half of the solid waste generated, and have little or no disposal infrastructure in terms of either well-designed and operated landfill sites or disposal through recycling or incineration of organic waste. A baseline assessment has been carried out on the SWM systems in the 6 cities and towns (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle) targeted by the UNDP-implemented, GEF-financed COMPOST project, and it found that both the collection efficiency of MSW at the household level and the solid waste disposal rate at the landfill are, at most, 75%. With a low disposal rate (70%), these rates give an overall system efficiency of 52% of MSW being disposed of at landfills.<sup>14</sup>
5. The major challenges along the MSW value chain in Ethiopian cities are:
- Generation – MSW is not sorted at the household level in a systematic manner. With only an informal economy related to the collection of recyclable waste at the household level, MSW collection suffers from a lack of investment;
  - Collection and transportation of waste – Primary waste collection can be characterised as crude in all cases, with door-to-door collection by micro and small enterprises (MSEs) with 2-wheel wheelbarrows, and MSE personnel employed under very poor conditions with little regard to occupational health and safety. The collection system has no transfer stations, and filled communal bins are then loaded by skip trucks owned by the municipality or city administration for dumping at a landfill. The major challenges regarding waste collection are: (1) cost recovery by either the MSEs or the city/town administration; and (2) a collection rate that is only approximately 75%;
  - Disposal of waste – In most cities and towns, the solid waste is dumped at open landfills that are not fenced, permitting access to scavengers who pick waste that have commercial value. A significant fraction of MSW is dumped in open public spaces such as green areas and along river banks. The current regulatory framework is virtually silent on waste collection and disposal enforcement mechanisms.
  - Financial constraints - There are several problems related to financing the SWM system, including: (1) due to socio-economic acceptability, not all cities and towns have recourse to the ‘water bill’ method (see **Annex M** for details), making cost recovery a problem; (2) in cases where the contractual agreement for household waste collection is between the households and the MSEs, there is a higher

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<sup>11</sup> The baseline study undertaken in 16 cities and towns shows that per capita waste generation varies between 0.15 kg/person/day to 0.85 kg/person/day. The study was carried out during the development of the SWM Standards.

<sup>12</sup> This refers to urban and peri-urban tree-planting, urban agriculture and urban green spaces.

<sup>13</sup> Ethiopia draft UGI Standards, Ethiopia draft UGI Handbook, Urban Land Development and Management Policy and Strategy, Construction Industry Development Policy.

<sup>14</sup> These numbers were derived from the baseline assessments that were carried out during the design of this project, as well as baseline assessments carried out by GIZ during the development of the SWM Standards.

- rate of waste dumping, and weaker oversight by the city administration or municipality on the quality of waste collection and disposal; and (3) there is no cost recovery by the city administration/municipality for waste that is transported from communal bins to the landfill.
- Energy recovery – There is no energy recovery at any of the waste disposal sites in the cities and towns considered in the baseline despite the fact that disposal sites such as in Adama and Hawassa were originally designed as sanitary landfills fitted with landfill gas capture equipment.<sup>15</sup>
6. The major challenges in implementing and sustaining UGI in Ethiopian cities are:
- Enforcement of UGI designated areas – The growth of urban centres places further pressure on UGI-designated areas to become human settlements. Personnel from urban local governments (ULGs) currently do not have the knowledge to enforce the proper use of UGI-designated areas. Over the past year, however, digitised cadastral maps with satellite imagery have now become available at the Land Registration Agency for use by municipalities as a tool for enforcing land uses within an urban area, notably the dedicated green areas that will be developed by this project. To overcome the challenges of enforcing UGI-designated areas, training municipal personnel on the use of these cadastral maps to enforce land uses is required;
  - Insufficient number of technically-qualified stakeholders involved in UGI – Most cities do not have a sufficient number of MSEs that are technically qualified to implement UGI projects involving nursery operations or the planting of trees and shrubbery. Meeting the demands for a 30% increase in UGI, as outlined in the GTP II, will require increased attention to the training of MSE personnel in nursery operations, plantation of reforested areas and maintenance of reforested areas;
  - No cost recovery for UGI initiatives – The financing of UGI initiatives is primarily from locally-collected revenues. With limited capacities to leverage other sources of financing, ULGs are unable to implement a broader set or scale of UGI initiatives that meet the targets of GTP II. Furthermore, ULGs generally do not have a full understanding of the true costs of implementing and maintaining UGI initiatives, and hence cannot articulate these costs to potential funding sources.
7. In response to the already present and expected impacts of climate change, Ethiopia’s National Adaptation Programme of Action (NAPA) recommends increasing the use of sustainable biomass resources.<sup>16</sup> The UNDP-implemented, GEF-financed COMPOST project directly addresses this recommendation by supporting the development of biomass-based compost market development. Through the use of compost, mainly by municipalities for reforestation activities, the project will simultaneously promote urban greenery development to enhance ecosystem services (including carbon sequestration) while increasing solid waste management to strengthen greenhouse gas mitigation and environmental protection. The project will support the transfer of technical expertise for developing a national standard for compost, as well as putting in place a quality assurance system.
8. Further details on the rationale for ISWM and UGI in Ethiopian cities can be found in **Annex K**. In addition to the GoE’s CRGE Strategy, other applicable legislation and ongoing Government initiatives supportive of UGI and ISWM development in Ethiopian cities can be found in **Annex L**.

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## 2. STRATEGY

9. The Theory of Change (ToC) diagram for the COMPOST Project in **Annex N** captures the linkages between the developmental challenge discussed in Section 1 and **Annex M** and its root causes (**Error! Reference source not found.**) and drivers. It also shows how the project interventions at the level of four project outcomes address the root causes of the problems related to ISWM and UGI. The outputs are shown in the ToC diagram

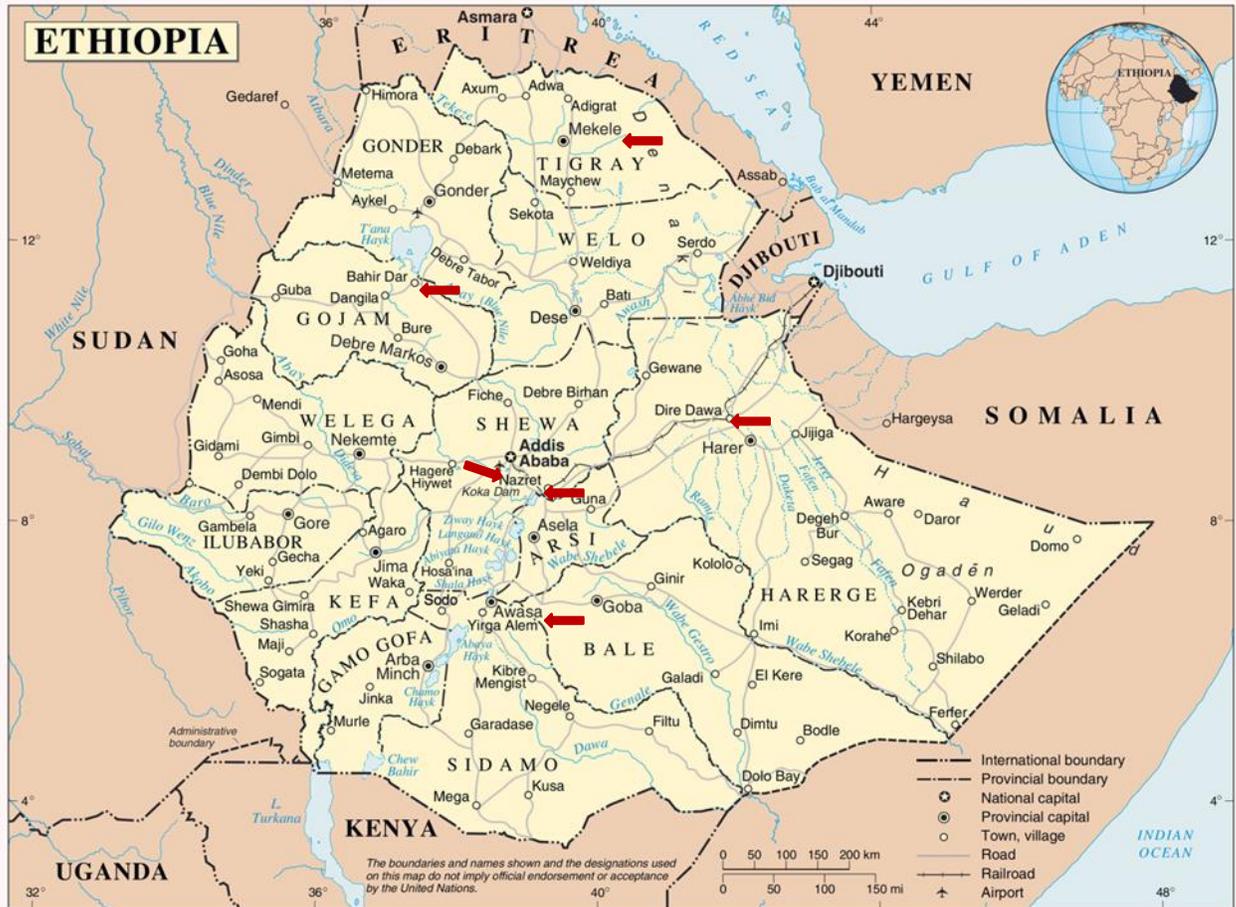
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<sup>15</sup> Field visits carried out at the landfills in Adama and Hawassa in December 2014.

<sup>16</sup> The Federal Democratic Republic of Ethiopia (2007), *National Adaptation Programme of Action (NAPA) of Ethiopia*.

but they are not detailed. The detailed discussion of the project outcomes and outputs is the focus of Section 3.

- The COMPOST project will be implemented in 6 targets cities and town (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle). The geographical locations of these cities and towns are shown in **FIGURE 1**.



**FIGURE 1. Map of Ethiopia showing the geographical locations of the six cities and towns included in the COMPOST project.**<sup>17</sup>

- The long-term impact of the project is to achieve GHG emission reductions with strong sustainable development and adaptation co-benefits through composting of organic MSW and the enhanced use of this compost in UGI (intermediate goal). The long-term outcomes of the project relate to addressing the five underlying problems that are discussed in **Error! Reference source not found.**, namely: inadequate regulatory framework for ISWM and UGI; low levels of cost recovery for waste management and investments in UGI; inadequate technological options for waste management; low levels of human and institutional capacity for the better integration of SWM and UGI, as proposed in the GTP II; and poor coordination of stakeholders to address the underlying issues, leading to sub-optimal management of urban waste and UGI. The ultimate goal for the project is to deliver the socio-economic and ecological benefits of integrating ISWM and UGI that are discussed in Section 1.

<sup>17</sup> <http://www.vidiani.com/large-detailed-political-and-administrative-map-of-ethiopia-with-all-cities-highways-and-airports/>

12. There are different drivers of change and assumptions that come into play at different levels in the ToC, as can be seen on **Figure N.2**. The external drivers are variables that fall outside the control of the project but which exert pressure in the relevant direction for justifying the project intervention. The key external drivers that will have a positive influence on the project logic are: (1) population growth and rapid urbanisation, which will increasingly necessitate innovative ways to deal with urban solid waste and urban greenery; (2) an increasing realisation that the innovative solutions should possess low-carbon and climate-resilient attributes, while at the same time addressing immediate socio-economic issues such as job creation, development of entrepreneurship skills and health concerns arising from mismanagement of MSW and the corresponding local environmental pollution (see Error! Reference source not found. **M1** for details); and (3) the relatively high price of chemical fertiliserfertilisers will drive the market for compost in urban agriculture. The impact of this driver is further discussed in Section 4 when the financial and economic model that has been developed for the compost value chain is analysed.
13. The main internal drivers of the project are: (1) the successful implementation of segregation or sorting of waste by households supported by incentives and awareness-raising. This is a critical element of the project since the development of a compost market rests on the ability to produce compost of quality commensurate for its use in different UGI activities spanning urban agriculture to nurseries to peri-urban forestry; (2) an established market value chain for compost with the “pull” driven by market forces in UGI end-uses, with the main buyer of compost being municipalities; (3) strengthened local administrations with institutional capacity for effecting land use planning to support UGI and ISWM activities coherently. For instance, one element of the market “pull” for compost is to generate carbon offsets for private companies under Component 2. This outcome can only be achieved in the presence of strict land-use planning that pre-defines peri-urban areas for reforestation and ensures the prevention of illegal logging once the trees are grown; and (4) use of technologies in the compost value chain that are commensurate with the developmental challenge. The GEF-financed COMPOST project favours a low-technology option for composting that is further discussed in Section 3.1.4. It is expected that the technical assistance, incentives and enabling framework that will be put in place by the GEF-financed project will make the risk profile of composting attractive for MSEs so that the intermediate goal in the ToC is achieved.
14. The ToC contains a number of assumptions (shown in red boxes in **Figure N.2**). At the level of project interventions, the main assumptions are:
  - Support received at all levels (Federal, Regional Bureaus and municipalities);
  - Private sector (MSEs, companies involved in carbon offsetting, etc.) engagement in implementing elements of the project is forthcoming;
  - Reliable and accurate data is available for monitoring and evaluating the project;
  - Enforcement of land-use plans is carried out by municipalities, while putting in place the UNDP Standards for the resettlement of illegal settlers in areas with the project boundary dedicated for UGI activities;
  - There is a high level of uptake of waste sorting by households through the project interventions.
15. At the level of the long-term outcomes, the assumptions are:
  - Project-trained resources are retained and operational in Government institutions (important for enhancing institutional capacity and knowledge);
  - The broader macroeconomic environment remains conducive for investments in the country;
  - The Nationally Appropriate Mitigation Action (NAMA) modality is a useful means for scaling-up mitigation actions and delivering sustainable development co-benefits. This is fundamental to the project design and is discussed in detail in Section N.4. The sectoral NAMA will support the strategies and standards that have been developed for SWM and UGI at the federal level, the transposition of which the COMPOST project will support in the 6 cities and towns participating in the project. The legal frameworks, policies and strategies relevant to urban greenery and SWM are detailed in **Annex L**.
16. The assumptions relating to the intermediate goal are as follows:

- MSEs are sufficiently stimulated by the enabling environment and incentives to carry out composting and to be involved in UGI;
  - Financial institutions are mobilised to provide finance for MSEs;
  - Anticipated climate change (e.g. temperature rise and decreasing precipitation) and extreme events (e.g. droughts)<sup>18</sup> are manageable, and do not adversely affect the survival rate of planted seedlings.
17. The strength of the project strategy is its adoption of a multi-stakeholder process (MSP). With a wide range of different project stakeholders (as summarised in **TABLE 4**) contributing to the outcomes of the project, project activities will not be operating in a vacuum but, rather, in a context where there are complementary baseline initiatives with which synergies must be forged to deliver maximum benefits productively (efficiently and effectively) to beneficiaries. Through the MSP, the project will deliver activities that will strengthen the supply and demand sides of compost from municipal solid waste, build the confidence of the wide range of stakeholders on this project (from the MSEs collecting household waste to municipal personnel and central government policymakers), and provide a NAMA to encourage scaling-up to achieve the mitigation and adaptation contributions of Ethiopia as per the Intended Nationally Determined Contribution (INDC) that the Government of Ethiopia submitted to the UNFCCC Secretariat prior to COP 21.<sup>19</sup> The emphasis on NAMAs to be ‘transformational’ implies a clear preference for a programmatic approach (e.g. the decisions of CoP 18 and CoP 19). Further, supported NAMAs offer an avenue to channel international financial, technological and capacity building support.
18. Transformation using a market-based approach. As discussed above, one of the problems confronting urban waste and greenery management in Ethiopia is the lack of financial sustainability. In general, the delivery of waste and greenery services is subsidised by local authorities. Since there are virtually no benefits arising from waste value addition in the baseline situation, and given the political dimensions associated with full cost recovery for the delivery of services, a market-based approach to cover the entire waste management chain is not envisaged by local authorities. In contrast, compost, which is a commodity that can bring tangible benefits, can be promoted using a market-based approach. The value addition that is obtained from composting and recycling the various components of MSW will not only provide mitigation, adaptation, socio-economic and ecological co-benefits, it will also reduce the cost burden on the current waste management system.<sup>20</sup> Component 2 of the project will develop a market-based approach to ensure the financial sustainability of the compost value chain. Further, private companies will participate in a voluntary carbon offset scheme that will create market “pull” for compost. Carbon credits will be generated from all the relevant project activities, including: methane avoidance from diverting organic waste from landfills for composting, afforestation and reforestation, and the production of renewable biomass for thermal energy use. Economic opportunities arising from the recycling of other waste streams, such as PET bottles, will be promoted by the project.
19. Adoption of low-technology options. Another approach adopted by the project is to promote composting technology that is commensurate with the developmental challenge. Guidance was received from the (federal) Minister of Urban Development and Housing that job creation for women and youth is a strong priority of the Government (see Section 3.3 on gender mainstreaming). Hence, the choice of composting technology should support this objective by taking into account the level of skills and education of women and youth. Another determinant of technology choice has been to support ongoing baseline composting activities. There is already a successful implementation of windrow composting in Bahir Dar, where the compost is then used in urban agriculture. The combination of these factors recommends that the COMPOST project promotes the windrow composting method in its more labour-intensive form (as opposed to mechanised windrow composting), supported by the setting up of robust national standards for quality

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<sup>18</sup>GoE (2014) *Second National Communication to the UNFCCC*, pp. 103-114.

<sup>19</sup> Please see <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Ethiopia/1/INDC-Ethiopia-100615.pdf>.

<sup>20</sup> For instance, municipalities and city administrations have to spend less on transporting MSW from community areas to the landfill. Further, the cost of managing existing landfills (that are not appropriately designed) is reduced.

assurance of the compost. The financial model that was developed during the project preparation (PPG) period for investigating the financial feasibility of compost is based on the use of windrow composting with manual turning of organic waste. Because of the higher exposure of workers to waste using the proposed low level of technology, the COMPOST project seeks to enhance the occupational health and safety of MSEs through their professionalisation.

20. Multi-stakeholder process. A challenge in the integration of ISWM and UGI is to ensure that there is proper engagement and coordination of all project participants. This is even more pressing in the COMPOST project because interventions occur at distinct geographical and political levels, while noting that there is a level of overlap between the two. The three geographical levels relate to the physical location where project beneficiaries are found, namely: national (e.g. national institutions such as MUDH and ESA), regional (e.g. regional bureaus and municipalities/city administrations), and local (i.e. woredas and kebeles). The political levels are loci where policy decision-making and/or implementation takes place in the federal political system of the Republic of Ethiopia. As discussed in Section 7 on Governance and Management Arrangements, the four political levels are: federal (e.g. federal ministries), regional bureaus (e.g. urban development), municipalities or city administrations and woredas/kebeles. The engagement of all project stakeholders (Section II.II above) at different geographical and political levels has been ensured through a rigorous stakeholder engagement process.
21. Knowledge management. Knowledge management has not been retained as a stand-alone component in the COMPOST project. Rather, knowledge management, as a means to an end, is a transversal issue that cuts across the project design and conceptualisation. An awareness campaign in Component 1 will provide communication materials to explain how source sorting works effectively to produce high-quality compost. Also, a twinning arrangement in Component 1 will enable ULGs from Ethiopia to work with other cities to share lessons-learned on developing a compost market and integrating UGI/ISWM to enhance mitigation benefits. Similarly, in Component 3, lessons-learned on the integrated urban NAMA will be compiled and disseminated. The MRV mechanism to be established to assist NAMA reporting will ensure that GHG baselines are standardised and that emission reduction targets and milestones are consistently monitored. The development and application of the MRV mechanism for GHG emission reductions will be institutionalised by integrating the COMPOST project MRV system within the broader MRV framework that will be established by the CRGE at the federal level. The Ministry of Environment, Forest and Climate Change (MEFCC), which has the mandate to develop the MRV framework for the CRGE, will be closely involved in the project activities related to the development of the MRV system for the GHG emission reductions that the SWM and UGI initiatives of the COMPOST project are expected to deliver. By working with MUDH, data gathered during the NAMA process will contribute to the Ethiopian Cities Prosperity Initiative (ECPI) and will be used by the urban observatories. From the grassroots work in Component 4, lessons-learned on compost plant construction and the production and use of compost will be gathered and stored in Output 2.6. Other cities and towns will be able to replicate and improve on composting strategies in the future. Similarly, Component 2 will develop a plan for cities and towns on how they can establish market outlets for compost and facilitate the implication of MSEs in the compost value chain.

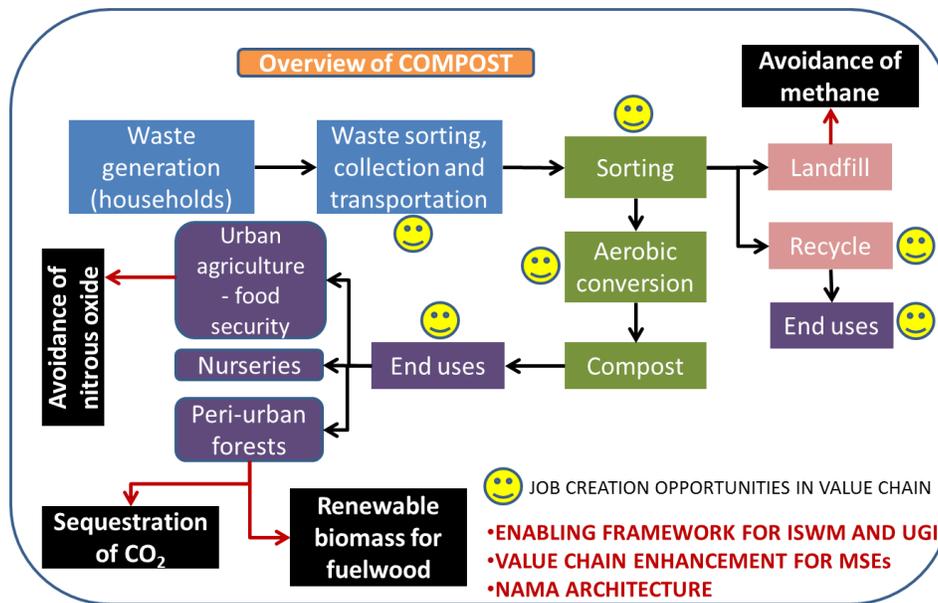
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### **3. RESULTS AND PARTNERSHIPS**

#### **3.1 Expected Results**

22. Four components and outcomes have been developed to enhance the synergies between UGI and ISWM. While the generation of compost from MSW is used as the primary link between ISWM and UGI in the COMPOST project, the issues of solid waste and urban greenery are also linked at both the institutional and policy levels. At the institutional level, MUDH is the line ministry in charge of implementing policies, strategies and actions plans relating to both SWM and UGI.

23. The overall structure of the proposed COMPOST project is illustrated in **FIGURE 2**, including the identification of job creation opportunities across the value chain and the sources of global environmental benefits. Capacity building forms an integral aspect of the project and a learning-by-doing approach will be favoured, as discussed in Section 2. Since capacity building permeates the entire value chain illustrated in **FIGURE 2**, it is not shown as a stand-alone intervention.
24. **Project objective:** *To promote significantly greater use of ISWM and UGI approaches in Ethiopian cities and towns in alignment with the national Growth and Transformation Plan for the urban sector.*



**FIGURE 2. Structure of the COMPOST project.**

### 3.1.1 Component 1: The enabling framework created and enforced to support ISWM and UGI

25. The expected outcome from outputs proposed in Component 1 is *“the regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting the national policy environment for integrating ISWM and UGI within urban systems in 6 selected cities and towns”*. The proposed outputs of Component 1 consist of:

- Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.
- Output 1.2: Tools and protocols for the enforcement of legal ISMW/UGI jurisdictions and the adoption of best practices for sustainable land management regarding urban greenery, waste management and IUWM.
- Output 1.3: Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities.
- Output 1.4: An adopted national standard for organic compost with quality assurance systems (QAS) in place at the regional (sub-national) level.
- Output 1.5: A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard.
- Output 1.6: A twinning programme with other cities and towns experienced in ISWM and UGI, and with institutions developing and implementing standards, to inspire and build capacities.

26. Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level. Existing frameworks and standards on UGI/ISWM, such as the UGI Standards, the Solid Waste Management Proclamation and the Urban Development Strategy, already developed at the federal level, will be endorsed and transposed to the (sub-national) regions (Output 1.1). These standards will ensure that urban greenery and waste management planning will be fully supported by ULGs.
27. Output 1.2: Tools and protocols for the enforcement of legal ISMW/UGI jurisdictions and the adoption of best practices for sustainable land management regarding urban greenery, waste management and IUWM. Enforcement of the current land ownership and land-use legislation in Ethiopia will be supported. The present Constitution of Ethiopia, which entered into force in January 1995, vests land ownership exclusively "in the State and in the peoples of Ethiopia." The relevant section continues, "Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange."<sup>21</sup> For urban areas, the Land Lease Proclamation 721/2011 applies. This Proclamation dictates "the right to use of urban land by lease [...] in order to realise the common interest and development of the people." It also describes how land must be used in conformity with urban development or master plans which are legally endorsed and legally binding. According to a PPG survey of the beneficiary cities/towns, city development/master plans must be reinforced to protect against violations.<sup>22</sup> Urban land is not properly utilised as per the plans due to an increase in illegal holdings.<sup>23</sup> Green areas, river banks and open spaces intended for public amenity value are being occupied without permission. The Government of Ethiopia is currently revising the Proclamation that governs illegal land holdings, after which cities such as Mekele and Dire Dawa will develop their own codes and enforcement systems.
28. To safeguard sustainable land and water management measures and enable their enforcement, cities and towns, with the support of GEF financing, will receive technical assistance to utilise existing cadastral maps and satellite imagery available at the Land Registration Agency to clearly denote areas legally reserved for UGI/ISWM (Output 1.2). UGI teams will be able use the borders on the maps as legally-binding and to cite the legal codes and provide visual maps to local populations so that their mandates can be enforced in a transparent manner. Greenery interventions will be further enforced by building the capacities of municipalities to monitor and publicise the benefits of urban greenery so that they can secure local buy-in and deter unsustainable development.
29. All of the existing and planned policies and standards on land use, urban agriculture and waste management will also be updated to integrate aspects of Integrated Urban Water Management (IUWM). IUWM is required to address urgent issues such as the dumping of solid and liquid waste into sensitive water bodies. As an internationally recognised methodology that considers both upstream and downstream relationships and impacts on water-based ecosystems in urban contexts, IUWM is best suited to promoting sustainable management of waste, greenery and water simultaneously. Using greenery development, the IUWM approach has been successfully applied in both developed and developing countries (e.g., Brazil, Poland, and UK)<sup>24</sup> and has been proven to make urban water systems more resilient to climate change.
30. Output 1.3: Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities. An integral part of the compost value chain that is crucial in delivering quality compost is to prevent the contamination of the organic component of MSW at source. This will be carried out following the guidelines under Article 11 in the NUSWMS.<sup>25</sup>

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<sup>21</sup> Please see article 40 of the Constitution of Ethiopia at <http://www.servat.unibe.ch/icl/et00000.html> - accessed 20 May 2015.

<sup>22</sup> Responses to city survey on UGI by Mekele Municipality.

<sup>23</sup> Ethiopian Urban Land Development and Management Policy and Strategy.

<sup>24</sup> Bahri, A. GWP, *Integrated Urban Water Management*, Technical Background Paper, No. 16, 2012.

<sup>25</sup> RWA (2014), pg. 27.

- *“11.6 Where mixed municipal waste is destined for recycling it should not be collected in compactor trucks as it forces wet biodegradable waste into contact with dry recyclables, contaminating them, and making it more difficult and less hygienic to separate it.*
  - *11.10 Where collection of source segregation of dry recyclables is to be introduced at the household level, brown or orange coloured plastic containers or thick-gauge plastic bags shall be provided to enhance hygiene and to avoid recyclable material becoming contaminated.*
  - *11.11 Where collection of source segregation of organic waste is to be introduced at the household level, green coloured plastic containers or thick-gauge plastic bags shall be introduced to enhance hygiene and to avoid contaminating recyclable material.”*
31. In addition to avoiding the contamination of organic waste from a quality perspective, source sorting will also reduce the cost of raw material treatment prior to composting or recycling of MSW and reduce the occupational health and safety hazards to waste handlers.
32. Sorting of household waste will build on the lessons learned from a pilot project in Hawassa. Sorting at household level was implemented in selected kebeles using coloured plastic bags (green for organic waste; red for hazardous waste; yellow for dry recyclables; and blue for remaining waste to be disposed at the landfill). The pilot project was accompanied by awareness creation through training for health workers who work in close proximity with kebele leaders and households, and for the households themselves. The pilot project was discontinued after recognising that the separation of waste was not as expected, mainly because the source-separated waste was eventually mixed together for dumping in the landfill. Households did not see the meaningfulness of segregating their waste in the absence of value chains for recycling (including composting) the source-sorted waste. The incremental investment schedule for compost infrastructure shown in **TABLE 8** has been established in full cognisance of this lesson-learned. This implies that the outputs related to Outcome 2 and Output 4.1 will be implemented in parallel with Output 1.3.
33. The motivational factors for sorting of household waste are economic incentives, personal norms, social norms and encouragement from the authorities.<sup>26</sup> However, economic incentives alone may crowd out the other motivational factors, and become a perverse incentive for the generation of more waste.<sup>27</sup> Hence, the COMPOST project will provide both economic incentives, and enhance personal and social norms. Using the experience on outreach activities in Hawassa, the project will focus mainly on encouragement to motivate sorting of waste at source through personal and social norms that are already strong attributes for addressing collective action issues in Ethiopia.
34. Output 1.3 will also include capacity reinforcement on the production of compost including the provision of training to designated regional authorities (e.g., health and environment officers) and community facilitators (such as CSOs) on the value chain of compost. The community facilitators will have the role of providing practical exercises at the level of woredas, kebeles and neighbourhood associations on how to carry out waste segregation, including training on proper hygiene.
35. To incentivise households to sort their waste, an awards programme will be created to award those active in UGI activities (e.g. urban agriculture and tree planting) with free compost (in proportion to how much organic waste they provide to the compost production facilities). The awareness creation programme (paragraph 33) will also drive the message that sorting of waste has financial and economic benefits. Once household waste has been sorted, the organic fraction will be collected and used for composting. The other segregated waste streams, such as PET and metals, can be sold for generating household revenues. For example, baseline assessments carried out in Bahir Dar have revealed that individuals are paid 70 ETB cents for a clean 1 litre PET bottle or 30 ETB cents for a clean half-litre PET bottle.<sup>28</sup> The Bahir Dar city representative also reported

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<sup>26</sup> <http://brage.bibsys.no/xmlui/handle/11250/187729?show=full>.

<sup>27</sup> Ibid.

<sup>28</sup> Information provided by the Deputy Director of Green Vision during a field visit that was carried out in Bahir Dar on 7 October 2015.

that there is a market for other dry recyclables such as scrap metal (ETB 8 / kg metal) that are collected door-to-door by informal collectors. Consequently, sorting of waste, while beneficial for the compost value chain, can also generate revenues for household through selling of clean dry recyclable wastes.

36. Further, the appropriateness of incentive-based pricing to promote household sorting of waste will be assessed during project implementation.<sup>29</sup> In incentive-based pricing, households are charged a fee for waste collection (as is the case in all cities and towns except Mekelle). The pricing mechanism rewards “good” sorters on the basis of “the more I sort, the less I pay”. As a result, responsible users sort more and in a better way, so much so that unsorted household waste is reduced, and waste sorted for recycling purposes increases. Results-based financing (RBF) has been also tested and proven to be effective in driving behavioural change in several developing countries to enhance the quantity and quality of sorted waste.<sup>30</sup> The design of incentive-based pricing can draw from the lessons learned from the implementation of RBF in Malaysia, Indonesia and China. A common lesson learned is that incentive payments are best supported with strong education, awareness-building, and socialisation. After the incentive payment scheme ends, this education and the habit of recycling can help sustain the behaviour of source-sorting of waste into the future.<sup>31</sup>
37. Output 1.4: National standard for organic compost with quality assurance systems (QAS) at the regional level. Composting standards similar to the European Compost Network – Quality Assurance System (QAS)<sup>32</sup> will be adopted at the national level, with quality assurance systems to be established at regional levels. The composting standards will enable Ethiopia to develop a quality label for composting that is internationally-recognised and that will support the establishment of a sustainable composting market linked to high-quality agricultural exports. The Ethiopian Standards Agency (ESA) has prioritised the development of standards for bio-fertiliserfertilisers and compost. Because of the lack of funding, standards have been developed to date for only four out of six bio-fertiliserfertilisers,<sup>33</sup> and the ESA welcomes the financial support of the GEF to develop standards for compost.<sup>34</sup> Since the compost will be used in UGI applications that do not all require the same level of quality (for instance, the highest and food-grade quality will be required for the application of compost in urban agriculture, whereas lower-quality compost can be used in afforestation and reforestation projects), the standards and QAS will be developed according to compost end-use. A risk mitigation approach built in the COMPOST project is initially to use compost generated from composting of household organic waste in afforestation and reforestation activities. The need for a compost quality standard is further discussed below under Component 2.
38. Output 1.5: A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard. Following the application of UNDP’s Social and Environmental Screening Procedure (SESP) which is presented in **Annex F**, the COMPOST project has been identified as being a potentially high-risk project because of the possibility of resettlement and displacement of illegal settlers within the project boundary. It has been estimated that up to 3,250 illegal households (or 16,250 people)<sup>35</sup> may be affected by the implementation of peri-urban reforestation on hillsides, lake shores and banks, and riparian corridors (Outputs 4.2 and 4.3). In the absence of any national or regional legislation or standard for the resettlement and displacement of illegal settlers, the COMPOST project has been designed to ensure that the project will not result in ‘forced evictions’<sup>36</sup> that are prohibited by international law. Under Output 1.5,

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<sup>29</sup> <http://www.emag.suez-environnement.com/en/sorting-mainstay-waste-recovery-process-9666>.

<sup>30</sup> World Bank (2014). *Results-Based Financing for Municipal Solid Waste*. World Bank, Washington DC.

<sup>31</sup> *Ibid.*

<sup>32</sup> For more details please see: <http://www.compostnetwork.info/>.

<sup>33</sup> The four standards are: (1) ES 3907-1-2015 – Fertilisers – Biofilous: Part 1 – Rhizobial Specifications and Test Methods; (2) ES 3907-2-2015 – Fertilisers – Biofilous: Part 2 – Phosphate Solubilising Microbial Specifications and Test Methods; (3) ES 3907-3-2015 – Fertilisers – Biofilous: Part 3 – Azospirillum Specifications and Test Methods; and (4) ES 3907-4-2015 – Fertilisers – Biofilous: Part 4 – Azotobacter Specifications and Test Methods.

<sup>34</sup> Discussions with Mr Tesfayelnika, Team Leader, Food and Agriculture, Ethiopian Standards Agency.

<sup>35</sup> One household comprises 5 persons on average.

<sup>36</sup> Such displacements can exacerbate poverty and/or create poor living conditions for the individuals and communities

the project will develop a Resettlement Action Plan (RAP) for illegal settlers within its boundary according to UNDP's Displacement and Resettlement Standard (DRS). The RAP will be developed in close consultation with the illegal settlers and local authorities, who have observed that, although there is no legal necessity to compensate illegal settlers for their resettlement or displacement, local administrations have the authority to seek administrative solutions to the resettlement issue by means of providing alternative livelihoods to the illegal settlers. A social assessment will be carried out in each city/town in order to provide adequate data to develop the RAPs. In particular, the social assessments will seek to understand the reasons that have led to the illegal settlements, and to establish how livelihoods, if any, were being derived from the occupied areas.

39. The UGI activities proposed under Outputs 4.2 and 4.3 will be implemented initially on land that is not affected by illegal settlers. This will provide the time necessary to develop the RAPs according to UNDP's DRS. No resettlement activities will occur until RAPs have been developed and reviewed by UNDP, and, where needed, compensation has been provided.<sup>37</sup> UNDP's DRS sets out a range of eligibility and compensation standards for "informal settlers". These include compensation for:<sup>38</sup>
- Loss, salvage and/or transport of affected properties, including original dwellings;
  - Business losses derived from dwellings and lands (including crops, livestock);
  - Transitional support and relocation assistance; or
  - Opportunities to restore, if not improve, livelihoods.
40. As far as is practicable, the COMPOST project will provide opportunities for the illegal settlers to restore their livelihoods by participating and deriving economic benefits from the UGI activities that will be carried out under Outputs 4.2 and 4.3. In this case, illegal settlers will be trained or re-skilled to set up MSEs that will carry out UGI activities. An Environmental and Social Management Plan (ESMP) will be developed for each city/town for monitoring and evaluating the implementation of the RAP. The ESMP will be developed as an integral part of each city's/town's RAP, as described in Activity 1.5.2 under Output 1.5 (see **Annex A**).
41. Output 1.6: A twinning programme with other cities experienced in ISWM and UGI, and with institutions developing and implementing standards to inspire and build capacities. To further support Ethiopia to create a compost market as well as to implement mitigation and climate-resilience aspects of UGI and ISWM, the 6 cities and towns (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa, and Mekelle) supported by the COMPOST project will be twinned with experienced cities around the world (Output 1.6). Twinning will enable Ethiopian ULGs to share experiences and to garner knowledge. For instance, through twinning arrangements, local municipalities will learn from cities such as New York City on how to develop sustainable, environmentally-friendly landfills and how to use UGI to ensure provision of clean water resources. A twinning programme already exists between New York City and the City of Addis Ababa for the rehabilitation of the Repi landfill that is being closed down. HoAREC&N is involved in this landfill rehabilitation project, and it will support Output 4.1 through in-kind co-financing. A knowledge- and experience-sharing arrangement on urban greenery design and implementation was established between the City of Hawassa and the City of Gonder. This inter-city twinning was discontinued because of lack of funding. This, and other similar national twinning initiatives, can be revitalised by the COMPOST project. The project will also support the exchanges that have already started between Government and city representatives, and the City of Kigali. Further, the production of compost from MSW within the ISWM framework has been implemented successfully in several developing countries, such as Uganda<sup>39</sup> and India<sup>40</sup>, and efforts will be made to seek partnerships with cities with similar bio-climatic conditions to Ethiopia.

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displaced, and adversely impact livelihoods, housing security, food security, emotional and mental wellbeing, community cohesion, and other factors. When displacement significantly impacts individuals or communities, it can foster unrest and instability, threaten project success, and otherwise undermine efforts of UNDP to advance just sustainable development.

<sup>37</sup> No GEF funds will be used to provide any compensation to illegal settlers.

<sup>38</sup> UNDP (2015). *Guidance Note UNDP Social and Environmental Standards – Standard 5: Displacement and Resettlement*.

<sup>39</sup> See <http://www.acp-cd4cdm.org/media/328802/case-study-uganda-composting-programme.pdf>.

<sup>40</sup> P.U. Asnani (2007). 'Solid Waste Management in Improving Solid Waste Management', in *India: A Sourcebook for Policy-Makers and Practitioners* (eds. Da Zhu, PU Asnani, C Zurbrugg, S Anapolsky and SK Mani).

### 3.1.2 Component 2: The private sector value chain for compost is created and professionalism is promoted to support sustainable production and utilisation of compost

42. The expected outcome from outputs proposed in Component 2 is: “a market-based system is developed and participating Micro & Small Enterprises (MSEs) are supported professionally to ensure the financial sustainability of compost production and utilisation”. The proposed following outputs of Component 2 consist of:
- Output 2.1: A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance the occupational health and safety conditions of Micro & Small Enterprises (MSEs) – especially in SWM – and to enhance the entrepreneurship skills of all MSEs.
  - Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.
  - Output 2.3: Market outlets for compost generated by the municipal composting plants through long-term contracts with public (municipalities, city/town administrations), and private (landscapers, nurseries, farmers) institutions so as to support urban agriculture and peri-urban forestry on a large-scale.
  - Output 2.4: Market outlets for the non-organic recycled waste processed by the municipal sorting plant through long-term contracts with recycling firms.
  - Output 2.5: Integrated SWM and UGI Standards in curriculum in education.
  - Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation.
43. Although the Government of Ethiopia would like to see increased utilisation of compost in urban agriculture,<sup>41</sup> there is no market chain for the generation of compost from MSW, with the notable exception of the town of Bahir Dar where an MSE called Green Vision has been carrying out windrow composting of MSW to produce compost that it uses in urban agriculture. Even non-MSW composting activities remain on a small-scale and do not benefit from a structured value chain that links compost production to end-users. The COMPOST project will create a market for compost that will be price-competitive with chemical fertilizer. Since municipalities are already buying organic waste from rural farmers, the immediate objective of creating a market “pull” for compost is for municipalities to buy the compost generated in urban centres. The economic analysis of compost generation is presented in Section 4. Supported by robust standards and QAS for compost used in different applications, and demonstration of the use of compost in municipal UGI activities, the COMPOST project will support establishment of long-term contracts with public and private institutions (e.g. landscapers, farming industries, municipalities and nurseries).
44. As discussed in Section 2, the compost generation will consist of a low-technology value chain that will allow the creation of jobs, as well as matching the level of development and availability of skilled labour in the regions. It will start with sorting of waste at the household level. The technology used for solid waste composting will be aerobic windrow composting. The production of compost from municipal solid waste brings several benefits, including: avoided methane generation from landfills (through waste diversion), reduction of bad odours from open waste dump sites, creation of jobs, less littering in towns and cities arising from the illegal dumping of waste and dispersal of waste from landfills, healthier agricultural products and improved yields. A public-private partnership (PPP) model will be adopted, whereby MSEs will be supported by city administrations and municipalities in the following ways: (1) MSEs<sup>42</sup> will receive MSW for composting at no cost; (2) since land is owned by the State, the city administrations or municipalities will make land available for infrastructure to develop for composting at no cost. The provision of land for composting

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<sup>41</sup> Ministry of Agriculture and Ministry of Environment and Forest (2014). *Climate Resilience Strategy – Agriculture and Forestry*.

<sup>42</sup> Composting may be carried out by MSEs that are already involved in MSW collection such as in Bahir Dar and Dire Dawa. Alternatively, new MSEs will be established. The number of new jobs created will be the same in both cases, since the composting activities will be incremental and therefore requiring additional human labour.

purposes will follow the minimum UGI Standards. As shown in Error! Reference source not found., the National Urban Green Infrastructure Standards (NUGIS) provides specific guidance on the use of temporary vacant land for composting purposes. It states that “Competent authorities should make use of temporarily vacant land to produce and manage compost and should encourage the involvement of MSEs in the production and sale”. Through this principle, the COMPOST project will ensure that there will not be any forced displacement of people arising from composting activities. There are examples of the allocation of bare land for composting purposes to MSEs in Bahir Dar (Green Vision) and Dire Dawa; and (3) municipalities will purchase compost generated from MSW for UGI projects.<sup>43</sup>

45. While the focus is on developing a financially viable market chain (see **Section 4.5** and **Annex O** for details) using a market-based approach, the value chain will be enhanced through the public interventions that are described below, including the promotion of new technologies. Existing private companies, such as Mekete Demissie Landscaping and Gardening Services (DMLGS), which already have experience in the production of compost and its use in UGI, will provide technical support to MSEs. Further, the COMPOST project will develop a carbon offset scheme with the support of MUDH. Once operationalised, the carbon offset scheme will target interested Corporate Social Responsibility (CSR) initiatives, public institutions, NGOs and the public at large. The carbon offset scheme will be linked to GHG emission reductions arising from the project activities, including plantation of peri-urban forests in the six target cities/towns; the generation of renewable biomass from the managed forests for fuelwood; and the production of compost that will avoid emissions of methane in landfills. For instance, in the envisaged methodology, CSR initiatives will pay NGOs, firms or city/town councils in the cities/towns to plant the appropriate number of trees to offset defined levels of emissions, thereby generating an income stream that can be re-invested in further planting. PPG field missions to Bahir Dar and Mekelle have revealed that a standard mixture of a substrate containing the ratio 1 compost : 1 sand : 2 forest soil (by volume) is used for planting tree seedlings, and that forestry projects utilise 100-120 kg of compost per ha per year.<sup>44</sup> Hence, the involvement of the private sector is key in developing a financially sustainable value chain for compost.
46. Output 2.1: A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance the Occupational Safety and Health (OSH) conditions of MSEs – especially those working in SWM – and to enhance the entrepreneurship skills of all MSEs. A capacity development programme will be developed as Output 2.1 in collaboration with the existing Entrepreneurship Development Centre (EDC) to enhance occupational health and safety conditions as well as the entrepreneurship skills of MSEs (see the EDP baseline project in Section 1). Training will also be provided to MSEs on how to collect and transport waste to the composting sites. This will include training on hygiene and provision of personal protective equipment. An expert agronomist will also be hired to conduct field trials and participatory exercises for local authorities and MSEs on setting up windrow and storage infrastructure, as well as training on the different stages of the compost production cycle. Designated regional authorities will also be trained on appropriate protocols to monitor the quality of compost (such as temperature, moisture, heavy metal content, bacterial levels and pH).
47. Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain. In addition to technical assistance and capacity building, the project will facilitate access to financial support for MSEs involved in composting, and to increase the level of professionalism as part of Output 2.2. The financial support will be through access to micro-credit provided by regional micro-finance institutions (MFIs) that have supported MSEs operating in the urban solid waste sector in the past. Discussions with the Association of Ethiopian

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<sup>43</sup>Municipalities are already buying compost produced from agricultural residues in rural kebeles for UGI activities. The disadvantages are: (1) the long distances over which compost must be transported; (2) using rural organic residues does not help in alleviating the problems caused by solid waste in urban centres; and (3) compost generated from agricultural residues may, from an agro-ecological perspective, be best used in rural agriculture.

<sup>44</sup> Information provided by Mr Tikabo Gebreyesus Gerezgher, Lecturer, Wondogenet College of Forestry and Natural Resource, Hawassa University at the PPG validation workshop.

Micro-Finance Institutions (AEMFI) and the Oromia Credit Savings Share Company (OCSSCO) have revealed a considerable interest in the COMPOST project considering: (1) the full support of MUDH; and (2) the financial viability of the composting operations (see Section 4.5 and **Annex O** for details). This process will be facilitated by the Federal Micro and Small Enterprises Development Agency (FEMSEDA) with support from MUDH. Additional funding for MSEs will be made available to regional MFIs, as is now outlined. UNDP supported the implementation of a project entitled “Support to the Local Economic Development (LED) Programme 2<sup>nd</sup> Generation” between 2012 and 2015.<sup>45</sup> The objective of the LED intervention was “to promote pro-poor economic growth and sustainable livelihoods, through improving the enabling environment for business development, investment and targeted economic interventions”. It was implemented in 7 cities and towns, including Adama, Bahir Dar, Hawassa and Mekelle. There is US\$ 1.5 million of LED programme funds that remain unused. Since the LED programme has been handed over to municipalities, and because the remaining funding has not yet been earmarked for alternative uses, discussions with UNDP have resulted in an agreement that these funds will be allocated to MSEs involved in the COMPOST project through regional MFIs.

48. *Output 2.3: Market outlets for compost generated by composting plants.* This output envisages the preparation of a marketing analysis, looking at competitors (inorganic fertiliser companies), competitor pricings and market trends to estimate penetration rates. Compost will inherently be cheaper in that it is a locally-available material that increases in supply with the increase of urbanisation (in contrast, all of Ethiopia’s chemical fertiliser is imported). The financial analysis discussed in Section 4 shows that compost will be able to clear the market at good returns at a price that is twenty-five times less than the current market price of organic fertiliser. Demonstrations, setting up long-term contracts with both public and private institutions and a continual analysis of the market will ensure the scaling-up and increasing integration of compost use in the existing fertiliser market.
49. The project will incentivise the use of compost over chemical fertilisers by progressively integrating compost into the existing fertiliser market and demonstrating its proven advantages. Ethiopia’s Ministry of Agriculture has been supportive of restoring natural soil content for some years. In 2009, the International Food Policy Research Institute (IFPRI) conducted a soil diagnostic study in Ethiopia.<sup>46</sup> Also, the Ethiopian Agricultural Transformation Agency (ATA) conducted research and soil tests through the Ethiopian Soil Information System project.<sup>47</sup> Both studies revealed that Ethiopian soils are deficient in nutrients including K, P and N. Key recommendations included creating a tailored soil fertility plan that attends to local soil conditions. The current market for chemical fertilisers (which are 100% imported) is not functioning well, with affordability and last-mile distribution identified in official reports as key bottlenecks. For instance, farmers in Mekelle use only half the prescribed quantity of chemical fertiliser in urban agriculture because of the high price of the product.<sup>48</sup> The COMPOST project will channel GEF finance to evaluate and establish market outlets for compost under this output. This will include a marketing analysis, looking at competitors (inorganic fertiliser companies), competitor pricings and market trends to estimate penetration rates. The financial model that is discussed in Section 4.5 shows that the production of compost from MSW is financially viable when the price of compost is one-fifth the market price of chemical fertilisers. It is also the case that some municipalities (e.g. Dire Dawa) are currently buying compost from rural farmers at 1 ETB/kg, which is 1.7 times higher than the modelled price in the COMPOST project.

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<sup>45</sup> GoE & UNDP (2014). *Support to the Local Economic Development Programme 2012-2015, Mid-Term Evaluation – Final Report.*

<sup>46</sup> Davis K., Swanson B. and Amudavi D. (2009). *Review and Recommendations for Strengthening the Agricultural Extension System in Ethiopia.*

<sup>47</sup><http://reap.ifpri.info/2014/03/24/samuel-gameda-talks-about-one-of-the-atas-flagship-projects-ethiosis/> - accessed 21 January 2016.

<sup>48</sup>The Office Head of Urban Agriculture observed during PPG discussions that 2 quintals of chemical fertiliser are prescribed per hectare of cultivated land. However, only 1 quintal/hectare is used. This situation provides an opportunity for using compost as a complement to chemical fertilisers. It was noted that, unlike chemical fertiliser, the use of compost in the correct amounts can enhance soil structure and texture, and improve water retention in soils.

50. To avoid the risk that farmers reject the use of solely compost (due to strong odours, difficulties in changing behaviours, etc.), the COMPOST project will work with ATA to complement blended fertilisers with locally-produced compost. The mixing of chemical fertilisers with locally-produced compost will be calibrated according to different soil-types (as described in **Annex P**). A critical issue for the use of compost produced from MSW in agriculture is quality, especially in terms of contamination (e.g. heavy metals and plastics). The results of Output 1.4 are critical for the successful application of the compost in urban agriculture.
51. As mentioned earlier, UGI activities related to afforestation and reforestation require compost of a lower quality than that used in urban agriculture. Hence, pilot sites and training on best practices for using compost produced from MSW for nurseries and forestry managers will be held to demonstrate its effectiveness. Demonstrations, setting up long-term contracts with both public and private institutions (Activities 2.3 and 2.4), and a continual analysis of the market will be required to ensure the scaling-up and increasing integration of compost use in the existing fertiliser market.
52. For example, in Bahir Dar, compost will be used to increase soil quality for existing urban agricultural activities along the shoreline of Lake Tana and the Blue Nile River, where traditional small-scale farming is practised. This will draw from the experience of the MSE Green Vision in using compost in urban agriculture. The compost will also be used in nurseries to produce compost-grown seedlings that will feed the project's reforestation efforts. Training will be provided on how compost use for tree seedlings can be supplemented with rainwater harvesting technologies to trap runoff for forestry growth. Site demonstrations will show how digging pits into the sloping ground of forests can effectively trap runoff to support tree seedling growth. Summaries of UGI in the 6 cities can be found in **Annex P**.
53. A primary activity of this output will be the recruitment of a marketing expert who will be hired to train an inter-disciplinary marketing team to analyse the compost market. The marketing team will be trained to look at competing inorganic fertiliser companies, competitor pricings and market trends to estimate penetration rates. This will build on the analysis undertaken during the PPG that has identified the following outlets for compost: urban development offices of the city administrations that are responsible for city beautification, production of seedlings in government-owned nurseries, and hill-side reforestation; flower farms, especially in the cities of Adama, Bahir Dar, Bishoftu, and Hawassa; urban and peri-urban households; urban agriculture (e.g. Green Vision in Bahir Dar); and the Urban Productive Safety Net Programme.<sup>49</sup> To stimulate the compost market, MSEs will be trained to market the compost to nurseries, private landscapers and organic farming associations, aiming to establish long-term contracts (See Output 2.3). This will include training by an agronomist on setting up pilot demonstration sites and participatory exercises on best practices for blended compost in urban agriculture and for nurseries supporting peri-urban forestry. To stimulate the market for compost, municipalities will be the initial buyers of compost for use in nurseries and peri-urban afforestation and reforestation, and inner city beautification.
54. To subsequently facilitate expansion of compost supply chains, the marketing team will explore avenues to create business partnerships with local markets, restaurants and other significant generators of organic waste (Output 2.3). Also, they will conduct a market study on marketing to wholesalers who can adapt the compost to suit user needs. Wholesalers could use their own branding and reach the market with their own marketing tools while duly acknowledging the origin of the organic compost (e.g. "contains X%<sup>50</sup> of organically-produced compost from the city of Dire Dawa").
55. To stimulate the compost market, MSEs will be trained to market the compost to nurseries, private landscapers, and organic farming associations aiming to establish long-term contracts. This will include

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<sup>49</sup> The Productive Safety Net Programme (PSNP) in Ethiopia is aimed at enabling the rural poor facing chronic food insecurity to resist shocks, create assets and become food self-sufficient. - <https://www.wfp.org/sites/default/files/PSNP%20Factsheet.pdf> – accessed 22 January 2016.

<sup>50</sup> This is given as a generic example and the percentage compost content needs to be determined in practice.

training by an agronomist on setting up pilot demonstration sites and participatory exercises on best practices for blended compost in urban agriculture and for nurseries supporting peri-urban forestry.

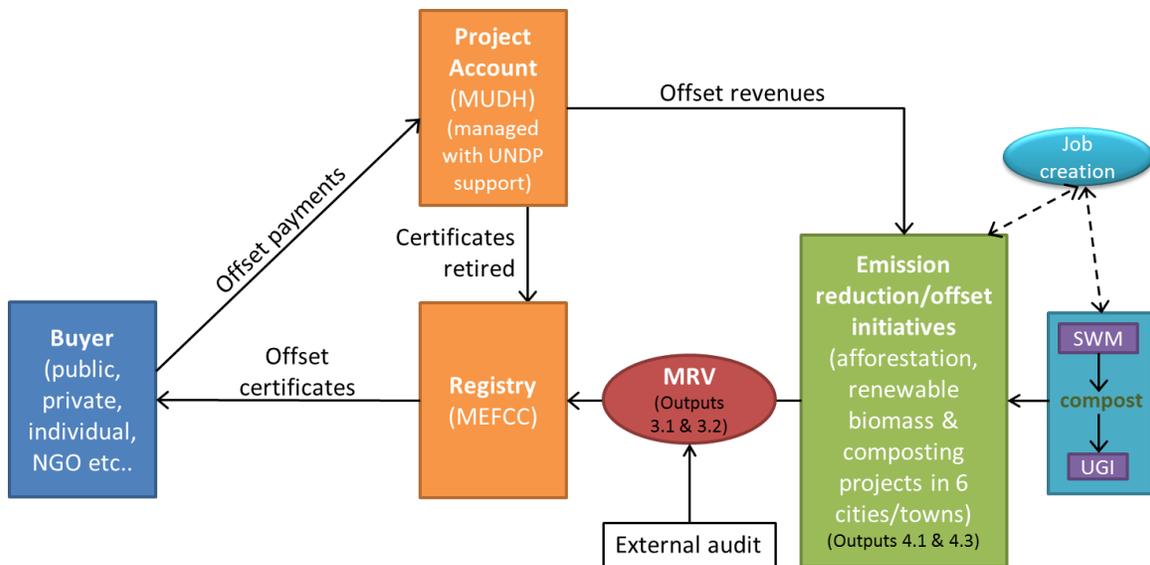
56. *Output 2.4: Market outlets for non-organic recycled waste.* In addition, efforts will be made by the project to secure long-term contracts with recycling companies for the non-organic fraction of the waste streams (Output 2.4). Field missions carried out during the PPG stage have revealed an existing market for PET bottles, and that their collection and sale are carried out mainly by informal workers. The COMPOST project will enhance this baseline by formalising and professionalising the work of these informal workers. The quantities of PET bottles that are generated in each city and town have been estimated, and are shown in **TABLE 9** (aggregate quantity) and **TABLE O.3** (selected cities). Given that a value chain already exists for PET bottles, the COMPOST project will enhance the value chain for the dry recyclable waste by supporting MSEs to access capital to buy compactors.
57. *Output 2.5: ISWM and UGI Standards integrated in curriculum in education.* Training will also be provided for TVETs and within selected vocational institutes and university degree courses to enhance the country's technical skills to implement the supply and demand sides of composting and UGI activities (Output 2.5). **FIGURE 3** shows the five levels of TVET-certified courses related to municipality services that are developed in conjunction with the MUDH and city regional administrations. The framework covers Greening Infrastructure (UGI) and Solid Waste (ISWM). Regarding the professionalisation of MSEs operating in SWM and UGI that is sought by the COMPOST project (Output 2.1), only Levels 1 to 4 are necessary. A technical committee is already in place at the federal level for the ongoing development of training courses and their certification. The COMPOST project will make use of this existing institutional arrangement to support the integration of the national UGI and SWM Standards, the quality standard for compost (Output 1.4), and the scientific approach to carrying out windrow composting into TVET courses. The trainings for entrepreneurs and their personnel (i.e. MSEs) through the certified TVET courses and other participating academic institutions on the occupational safety hazards of waste management and proper handling of municipal solid waste from collection to composting (Outputs 2.1 and 2.5) will be mandatory, and constitute a risk mitigation action to avoid the contamination of organic waste (**TABLE 5**) and protect the health and safety of waste handlers (**Annex F**). This should address mitigation of exposure risks of MSE personnel to waste hazards.

Further, the project will identify and recruit an international lead assessor for ISWM and UGI. This individual will lead efforts for "training of trainers" (ToT) certification for ISWM and UGI on behalf of TVET. This will ensure that the new harmonised ISWM and UGI regulatory and legal frameworks, as well as new design and operational standards, are properly embedded into the training programmes of local universities and outreach activities of the municipalities. The curriculum will include socio-economic and environmental benefits in TVET-designed courses that will be delivered by regional universities (Adama Science and Technology University, Bahir Dar University, Hawassa University and Mekelle University) and outreach activities targeting kebeles.



FIGURE 3. TVET certification for municipality services.

58. Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation. Finally, a national voluntary carbon offset scheme will be set up and operationalised (Output 2.6). The Government of Ethiopia, through MUDH, is fully supportive of this initiative, and it is contributing US\$ 2 million cash specifically for the establishment of the voluntary carbon offset scheme. The Government sees the voluntary carbon offset scheme as one of the main instruments for achieving the long-term vision of making Ethiopia a net-zero emitter of GHGs. MUDH is, therefore, leading by example by financing and operationalising the national voluntary carbon offset scheme. Once operational, the offset scheme will be available to offset buyers from public and private institutions, individuals and NGOs. Several private-sector companies (e.g. Ethiopian Airlines, Meta Breweries) were engaged during the PPG process for their eventual participation in the national voluntary carbon offset scheme through their Corporate Social and Environmental Responsibility (CSER) initiatives.
59. **FIGURE 4** shows schematically how the voluntary national carbon offset scheme will operate. The overall design of the scheme was validated by stakeholders during the PPG validation workshop held on 3 and 4 February 2016 in Addis Ababa. The creation and operationalisation of the offset market will be undertaken jointly by MUDH and MEFC. The voluntary carbon market will link carbon ‘sellers’ (in the form of carbon sequestration through peri-urban reforestation, the production of renewable biomass for fuelwood, and the production of compost) and carbon ‘buyers’ in order to provide ongoing financing for UGI and composting activities in Ethiopia.



**FIGURE 4.** Schematic showing the overall design of the national voluntary carbon offset scheme.

60. Peri-urban reforestation is a vital output of the COMPOST project that will generate demand for compost that will be produced from municipal solid waste. While contributing to the verified reductions in GHG emissions, the carbon offset scheme will support the creation of jobs in SWM and UGI activities that will be carried out under Outputs 4.1 and 4.3.
61. By incorporating the standardised baselines for emission reduction calculations that will be developed under Output 3.1, the MRV scheme (Output 3.2) will be used to log the emission reductions accruing from the COMPOST project in a 'Registry' that will be hosted by MEFCC. The emission reductions will be externally audited to bring more credibility to the offset scheme, which will provide 'buyers' with the confidence required to engage with the offset market. A 'Project Account' will be set up at MUDH for receiving revenues from the sales of offset certificates to 'buyers', and it will be managed with the technical support of the UNDP Country Office. Once a 'buyer' has transferred funds to the 'Project Account' following the purchase of offset certificates, the certificates will be retired from the 'Registry'. This step will avoid double-counting of carbon offsets. In order to close the loop and support the financial sustainability of the project's GHG emission reduction initiatives, proceeds from the sale of carbon offsets will be used to support composting and UGI activities. The carbon offset certificates<sup>51</sup> that the project will generate are quantified in Section 3.2 below.

### 3.1.3 Component 3: Architecture for Nationally Appropriate Mitigation Action (NAMA) development and implementation is established

62. The expected outcome from outputs proposed in Component 3 is "a NAMA is designed and implemented to catalyse the transformational capacity of integrated urban systems to generate large emission reductions". Activities within this component will focus on facilitating Nationally Appropriate Mitigation Action (NAMA) development and implementation. A COMPOST NAMA will be developed for submission to the UNFCCC NAMA Registry with the goal of: (a) providing robust and credible MRV for the GEF-financed COMPOST project, and (b) scaling-up the COMPOST project beyond the geographical boundaries being supported by the GEF.<sup>52</sup> The following outputs will be used to achieve the outcome of Component 3:

<sup>51</sup> 1 offset certificate = 1 tCO<sub>2</sub>e MRV'd emission reduction.

<sup>52</sup> The GEF project will cover 6 cities and towns. MUDH has the intention to scale-up the COMPOST NAMA in the future with Green Climate Fund (GCF) support. An economic analysis of scaling-up of the actions covered in the COMPOST NAMA to 20 cities and towns has been carried out.

- Output 3.1: Established standardised UGI and ISWM baselines for calculating emission reductions.
- Output 3.2: Developed MRV mechanisms for each of the 3 elements in Output 3.1.
- Output 3.3: Developed comprehensive technology baselines and prioritisation of technology options for ISWM and UGI.
- Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented – initially covering 6 regional cities and towns but with the potential for scale-up within Ethiopia.

63. Output 3.1: Established standardized UGI and ISWM baselines for calculating emission reductions. To effectively monitor, report and verify (MRV) emission reductions provided by the COMPOST NAMA, standardised baselines for emission reduction calculations will be established. Standardised baselines for calculating emission reductions will be developed for: (1) compost production using displaced landfill organic waste. In this case, the Recycling and Composting Emissions Protocol<sup>53</sup> developed by ICLEI will be adopted as a standardised baseline; (2) urban and peri-urban reforestation of degraded land; and (3) displacement of non-renewable fuelwood by renewable biomass generated from managed forests.<sup>54</sup>
64. Output 3.2: Developed MRV mechanisms for each of the four elements in Output 3.1. An MRV scheme will also be established for the 3 standardised baselines developed under Output 3.1 to quantify GHG emission reductions accruing from the project activities. The MRV scheme will also be linked with the City Prosperity Index (CPI)<sup>55</sup> of Ethiopia’s Cities Prosperity Initiative (ECPI) so that the COMPOST project can build on GHG emissions data housed in the ECPI’s urban observatories (see paragraph 90 and **Annex L** that gives details of baseline initiatives). The Government of Ethiopia is fully supportive of developing a MRV system as per the mandate of the CRGE Strategy. Since the project activities will also generate sustainable development dividends such as pro-poor job creation and adaptation benefits (over and above global environmental benefits in terms of GHG emission reductions), the MRV system will be designed to also capture these sustainable development dividends.
65. Output 3.3: Developed comprehensive technology baselines and prioritisation of technology options for ISWM and UGI. Ethiopia is sub-divided into 16 agro-ecological zones that have distinctive soil qualities and climatic conditions. Hence, a ‘one-size-fits-all’ approach cannot be used for all UGI/ISWM initiatives. In collaboration with the work that is being carried out by the Wondo Genet College of Forestry and Natural Resource of the University of Hawassa,<sup>56</sup> the project will develop a comprehensive technology baseline and prioritisation of technology options for ISWM and UGI. The technology baseline will provide a systematic approach to identifying and prioritising UGI/ISWM mitigation technologies that will enable Ethiopia to increase its preparedness for leveraging international climate financing and technology transfer. Besides developing a replication and scaling-up plan for compost production in Ethiopia, the NAMA that will be formulated under Output 3.4 will also integrate other financially and economically attractive ISWM mitigation technologies. For instance, stakeholder engagement carried out during the PPG process has revealed that the organic component of solid waste can be put to alternative uses such as producing livestock feed and/or furic and fomic acid that is used as a binder by the ATA for blending inorganic fertilisers. At this stage, fomic and furic acid are imported. Further, the cities and towns of Bishoftu and Adama carry out commercial livestock fattening activities that produce animal-derived organic waste. Since the COMPOST project does not cater for this waste, alternative technologies such as biogas production will be investigated as an environmentally-sound mitigation technology for waste generated by abattoirs under Output 3.3.
66. Specific activities of this output include preparation of a baseline study of specific waste streams from MSW, agriculture and livestock management, and how these waste streams are managed within the 6 cities covered

<sup>53</sup> <http://iclei.usa.org/publications/recycling-composting-emissions-protocol/>.

<sup>54</sup> [https://cdm.unfccc.int/filestorage/X/J/5/XJ5UFAGWDEM7L30CSYPO6B842N19QV/EB85\\_repan14\\_AMS-II\\_G\\_%28v07.0%29.pdf?t=VjF8bzFiY3M3fDCsMZ\\_ECqc\\_tD4dPLA9DAFs](https://cdm.unfccc.int/filestorage/X/J/5/XJ5UFAGWDEM7L30CSYPO6B842N19QV/EB85_repan14_AMS-II_G_%28v07.0%29.pdf?t=VjF8bzFiY3M3fDCsMZ_ECqc_tD4dPLA9DAFs).

<sup>55</sup> John. M. Obure (2015). *City Prosperity Index: Ethiopian City – Mekelle*. UN-Habitat, Addis Ababa.

<sup>56</sup> <http://www.hu.edu.et/cfnr/>.

under this Project; consultations with public and private stakeholders on how management of these waste streams can be improved through various measures and technologies; and the preparation of detailed studies on suggested technological options such as biogas production or the production of fuming and furic acid. This study of a technology baseline will provide a systematic approach to identifying and prioritising UGI/ISWM mitigation technologies which will enable Ethiopia to increase its preparedness for leveraging international climate financing and technology transfer.

67. Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented. This output supports the national process for preparing a NAMA that will develop and implement a replication and scaling-up plan for UGI/ISWM compost production in Ethiopia, and integrated with other financially and economically attractive ISWM mitigation technologies as identified under Output 3.3.
68. The project will support the preparation of NAMA documentation for ISWM and UGI for submission to GoE for feedback. After GoE review, the NAMA document will also be presented at a national workshop for feedback from a wider range of stakeholders. With the completion of this national workshop, the NAMA documentation will be finalised to include a replication plan for other cities and other technology options, as identified in Output 3.3 that will address ISWM and UGI initiatives.

#### **3.1.4 Component 4: Integration of UGI and ISWM in urban systems, including design and implementation in 6 cities and towns (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle)**

69. The expected outcome from outputs proposed in Component 4 is: “*proof-of-concept urban systems integrating ISWM and UGI are operationalised with quantified GHG emission reductions in a NAMA framework*”. Outcome 4 will support concrete, on-the-ground activities that promote UGI and ISWM. Planned activities will operationalise and field-test integrated waste/greenery developments involving waste sorting, compost production, greenery development, urban agriculture and peri-urban forestry in all 6 cities and towns. The financial viability of recycling the non-organic waste will also be investigated to support environmental protection and job creation. The proposed outputs of Component 4 consist of:

Output 4.1: Composting plants built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency’s blending facilities to progressively complement blended chemical fertilisers with compost.

Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.

Output 4.3: Reforestation of 33,309 ha of degraded land in 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings

70. Output 4.1: Composting plants built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency’s blending facilities to progressively complement blended chemical fertilisers with compost. Specifically, windrow composting plants will be built, equipped and implemented in the 6 cities and towns by MSEs with support from municipalities (e.g. access to land for composting activities and municipalities acting as buyers of compost for municipal UGI activities). The investment plan for these composting plants is discussed in the financial analysis presented in **Section 4.5**. In summary, the compost infrastructure development will follow the incremental investment schedule shown in **TABLE 8** (Section 4.5). The investment schedule has been reviewed and vetted by stakeholders. The deployment of compost infrastructure, equipment and tools, the quantity of waste generated in each city, and the quantity of compost that will be produced by each city/town is detailed in **Annex O**, which supplements the financial analysis given in **Section 4.5**. It is expected that, when investments reach 100% by the end of the project lifetime, approximately 45,500 tonnes of compost will be produced annually from approximately 151,600 tonnes of household organic waste.

The composting plants will be built and operated according to Environmental Management Plans (EMPs) that will provide guidance on the different stages of construction and operation. Together with the application of the national standards for compost production, the EMPs will provide guidance on compost site safety during construction and operation, handling of waste and management of odours. These considerations are covered by the activities related to Output 4.1 in **Annex A**.

71. Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors. Resources from this output will be used to finance revegetation of degraded urban areas using compost generated in Output 4.1. These activities located in highly visible urban areas will serve to demonstrate the benefits and raise the awareness of UGI to urban residents. These interventions will also arrest the degradation of water resources by developing UGI to support Integrated Urban Water Management. Specifically, activities of this output will encompass the following:
- In Bishoftu, an open dump site will be cleaned and rehabilitated into an open green space area;
  - In all 6 municipalities targeted by the COMPOST project, riparian corridors will be rehabilitated through revegetation enabling these corridors to act as buffers to absorb urban surface water runoff and reduce sedimentation of lakes and rivers; and
  - Revegetation of degraded public lands will be implemented to reduce harmful impacts from intense rainfall events, and provide ecosystem services at lower costs than conventional stormwater drainage systems.<sup>57</sup> This will include concrete measures undertaken by the project, including design and construction of vegetated retention ponds and vegetated infiltration trenches.
72. Output 4.3: Reforested degraded land and enhanced agricultural land in the vicinity of the 6 cities. Resources from this output will be directed towards reforestation of degraded areas for watershed management as well as firewood plantations that will serve as a sustainable resource for fuel wood for urban residents.
73. A list of cities presenting the types of UGI initiatives and indicative schedules of areas to be revegetated that are to be supported by the project under Outputs 4.2 and 4.3 is provided in **TABLE L.3 (Annex L)**. Prior to implementing these UGI initiatives, project personnel will confirm with the municipalities the specific areas and timeframes under which peri-urban forests, riparian corridors, green urban spaces and retention ponds will be revegetated. Furthermore, project personnel will confirm the vegetation species and density of seedlings to be planted, as well as composting, fertiliser and watering requirements for each UGI plot. **Annex P** provides more details on the profile of each city as it pertains to the UGI initiatives.
74. An important aspect of Outputs 4.2 and 4.3 will be the mandatory use of compost generated from investments made in Output 4.1 to cultivate forest seedlings grown in existing and new nurseries to support the growth of peri-urban reforestation sites around the cities (under Output 4.3) and rehabilitated and clean open spaces and riparian corridors (under Output 4.2).<sup>58</sup> The compost-supported trees will serve as a renewable biomass energy source for the cities and towns. **TABLE 1** shows the city-level area of land that will be used for reforestation and the production of firewood.

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<sup>57</sup> P. Bolund and S. Hunhammar (1999). *Ecosystem services in urban areas*, Ecological Economics 29, 293-301 ([http://www.fao.org/uploads/media/Ecosystem\\_services\\_in\\_urban\\_areas.pdf](http://www.fao.org/uploads/media/Ecosystem_services_in_urban_areas.pdf) - accessed 3 May 2016).

<sup>58</sup> While this approach is an integral part of creating a value chain for compost, it will also ensure that Standard 7 (i.e. Pollution Prevention and Resource Efficiency) in the Social & Environmental Safeguards (see Annex F) will not be triggered.

**TABLE 1: Proposed areas of reforestation and firewood plantations supported by the project.**

City: Type of UGI initiative <sup>59</sup>	Hectares					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Adama:						
Reforestation	158	298	300	300	300	1,356
Firewood plantations	200	500	600	600	874	2,774
Bahir Dar:						
Reforestation	300	500	900	956	1,200	3,856
Firewood plantations	800	1,200	1,200	1,400	1,400	6,000
Bishoftu:						
Reforestation	300	400	500	600	667	2,467
Firewood plantations	100	200	300	400	1,000	2,000
Dire Dawa:						
Reforestation	200	250	344	350	350	1,494
Firewood plantations	500	800	1,000	1,500	2,177	5,977
Hawassa:						
Reforestation	400	500	600	800	1,085	3,385
Firewood plantations	100	200	200	250	250	1,000
Mekelle:						
Reforestation	200	300	500	500	600	2,100
Firewood plantations	100	200	200	200	200	900
<b>Totals for reforestation:</b>	<b>1,558</b>	<b>2,248</b>	<b>3,144</b>	<b>3,506</b>	<b>4,202</b>	<b>14,658</b>
<b>Totals for firewood plantations</b>	<b>1,800</b>	<b>3,100</b>	<b>3,500</b>	<b>4,350</b>	<b>5,901</b>	<b>18,651</b>
<b>Total UGI:</b>	<b>3,358</b>	<b>5,348</b>	<b>6,644</b>	<b>7,856</b>	<b>10,103</b>	<b>33,309</b>

75. Currently, most peri-urban forests are managed by the city municipalities in collaboration with Urban Agricultural Offices, Urban Environmental Protection Offices, Micro and Small scale Enterprises (MSEs) and community forest organisations.<sup>60</sup> For example, MSEs are organised to protect forests with proper mowing and promoting grass sales, apiculture and fodder production as income generation schemes. Also, there is a successful community-managed Clean Development Mechanism (CDM) forestry project in Humbo. The COMPOST project plans to continue to use the existing management arrangements and community-forestry approach for peri-urban forests, and will provide capacity building to both MSEs and appropriate municipality representatives on compost use in forestry. This approach will capitalise on the strong sense of community involvement in local governance that prevails in Ethiopia, and also reinforce the objective of the Government to create jobs through MSEs that are fully embedded in local communities.
76. Urban agriculture will also be supported on approximately 20,000 hectares of land in 6 cities and towns. Compost will be used to improve soil conditions to produce high-value fruit trees such as mango, avocado and peach. At the nurseries, rainwater harvesting technologies (such as roof storage tanks) will be used for watering the fruit tree pots to support seedling growth in the compost-rich soils. Rainwater harvesting systems will also be installed to support urban agriculture. Trees will be placed in shallow pits to act as micro-catchments (a common practice in the Entoto Hills around Addis Ababa).

<sup>59</sup> Most of the reforestation consists of peri-urban forests (i.e. under Output 4.3). Reforestation initiatives located within riparian corridors, urban green spaces and retention ponds (under Output 4.2) comprise less than 2% of the total reforestation areas in each city.

<sup>60</sup> Responses to city survey on UGI by Mekele Municipality.

### 3.2 Global Environmental Benefits

77. The project will enable GHG reductions in three ways. The GHG emission reductions discussed below will accrue at the end of the 5-year project.
78. **Avoided methane** production in landfills by diverting MSW to produce compost: The calculation of GHG emission reductions arising from the avoidance of methane (CH<sub>4</sub>) production in landfills by composting has been carried out using the CDM methodology ACM0022 – Alternative waste treatment processes – version 02.0.<sup>61</sup> The total quantity of MSW disposed of in the 6 cities and towns; the total amount of organic content; the organic waste composted; and the compost produced are summarised in **TABLE 2** for the period 2015 to 2021. The annual GHG emission reductions accruing from the diversion of organic waste from landfills for composting is summarised in **TABLE 3**. In 2021, the avoided CH<sub>4</sub> emissions arising from the diversion of 151,629 tonnes of organic waste from landfills will reach 132,321 tCO<sub>2e</sub> per year. Avoided methane emissions are zero in 2015 as no compost is produced.<sup>62</sup> The cumulative emission reductions to 2021 are 352,749 tCO<sub>2e</sub>. By the end of 2025, the cumulative emission reductions due to avoided methane at landfills will reach 882,033 tCO<sub>2e</sub>. Between 2026 and 2035, approximately 1,323,210 tCO<sub>2e</sub> cumulative direct emission reductions are expected. Hence, the cumulative emission reduction accruing from composting activities over 20 years is ~2.21 MtCO<sub>2e</sub> (2,205,243 tCO<sub>2e</sub>).

**TABLE 2: Total quantity of MSW disposed of and compost produced in 6 cities and towns: 2015 - 2021.**

	2015	2016	2017	2018	2019	2020	2021
<b>MSW disposed (t/yr)</b>	115,942	128,735	142,670	157,824	174,284	192,138	203,520
<b>Fraction organic disposed (t/yr)</b>	86,796	96,268	106,579	117,787	129,955	143,147	151,629
<b>Organic waste composted (t/yr)</b>	0	2,888	15,987	41,225	77,973	114,518	151,629
<b>Compost produced (t/yr)</b>	0	866	4,796	12,368	23,392	34,355	45,489

**TABLE 3: GHG emission reductions from the diversion of organic waste from landfills for composting.**

	2016	2017	2018	2019	2020	2021
<b>Methane avoided (tCH<sub>4</sub>)</b>	101	558	1,439	2,722	3,997	5,293
<b>Carbon dioxide equivalent, tCO<sub>2e</sub></b>	2,520	13,951	35,976	68,044	99,936	132,321
<b>Cumulative emission reductions, tCO<sub>2e</sub></b>	2,520	16,471	52,447	120,492	220,428	352,749

79. Indirect emission reductions from avoided methane from landfill due to composting have been calculated using the bottom-up and top-down approaches, and the detailed calculations are given in **Annex Q**. The indirect emission reductions due to composting has been estimated to range between 2.37 MtCO<sub>2e</sub> (top-down) and 3.31 MtCO<sub>2e</sub> (bottom up).
80. **Urban forestry:** According to the CDM reforestation project in Humbo, Ethiopia,<sup>63</sup> a planted forest with a 50:50 mix of *Eucalyptus globulus* and *Grevillea robust* sequesters an average of 11.73 tCO<sub>2</sub>/ha/yr in the first 10 years. Another study has shown that *Eucalyptus globulus* planted in the Oromia Region (the location of Bishoftu and Adama) sequesters on average 11.2 tCO<sub>2</sub>/ha per year.<sup>64</sup> With GEF support, it is expected that around 14,658 ha of degraded or deforested urban and peri-urban land will be reforested (as shown in **TABLE 1**), resulting in approximately 79,000 tCO<sub>2e</sub> sequestration per year<sup>65</sup> (as shown in **Error! Reference source not found.**). This

<sup>61</sup>[https://cdm.unfccc.int/filestorage/6/J/B/6JB3U5TZDWEOP9NLQRAHV4MIC1X07F/EB81\\_repan13\\_ACM0022\\_ver02.0\\_281114\\_clean.pdf?t=azZ8bzFiODJnfDAyFvg4gVh01w7Di9DPt\\_A3](https://cdm.unfccc.int/filestorage/6/J/B/6JB3U5TZDWEOP9NLQRAHV4MIC1X07F/EB81_repan13_ACM0022_ver02.0_281114_clean.pdf?t=azZ8bzFiODJnfDAyFvg4gVh01w7Di9DPt_A3) – accessed 21 January 2016.

<sup>62</sup> It is assumed here that the quantity of compost currently produced by Green Vision in Bahir Dar is insignificant compared to the total volume of organic waste that is generated by households in 6 cities and towns.

<sup>63</sup> CDM Project Design Document (2009) *Humbo Ethiopia Assisted Natural Regeneration Project*, <https://cdm.unfccc.int/Projects/DB/JACO1245724331.7/view>.

<sup>64</sup> Bazezewet *et al.* (2015). 'Carbon stocks in Adaba-Dodola community forest of Danabe District, West-Arsi zone of Oromia Region, Ethiopia: an implication for climate change mitigation', *Journal of Ecology and the Natural Environment* 7(1): 14-22.

<sup>65</sup> Calculated using FAO's Ex-Ante Carbon balance Tool (EX-ACT) (<http://www.fao.org/tc/exact/ex-act-home/en/>).

carbon sequestration is equal to 1.58 MtCO<sub>2e</sub> over 20 years. A combination of fast-growing and endemic plant species will be selected for appropriate Agro-Ecological Zones (AEZs), based on the research work that is being carried out by the Wondo Genet College of Forestry and Natural Resource of Hawassa University.

81. **Generation of renewable biomass for fuelwood use:** The primary source of energy in the Regions of Ethiopia is fuelwood and waste.<sup>66</sup> The COMPOST project will enable the displacement of non-renewable biomass with renewable biomass obtained from urban and peri-urban forests. Assuming that 5.1 tonnes/ha of renewable biomass<sup>67</sup> can be collected from over 18,651 ha of managed urban forests per year (as shown in Table 6), the project will displace 95,000 tonnes of non-renewable biomass each year (as shown in Error! Reference source not found.).<sup>68</sup> This will result in emission reductions of approximately 227,000 tCO<sub>2e</sub> per year or 4.54 MtCO<sub>2e</sub> over 20 years.
82. Hence, the direct annual emission reductions from UGI initiatives and ISWM that can be expected at the end of the project life (i.e. 2021) are approximately 306,000 tCO<sub>2e</sub> and 132,321 tCO<sub>2e</sub>, respectively. By assuming a lifetime of 20 years for compost facilities and managed landfills as well as carbon sequestration UGI, the direct emission reductions generated by the project will be 8.33 MtCO<sub>2e</sub>, giving a GEF abatement cost of 0.80 US\$/tCO<sub>2e</sub>. This is considered to be a conservative estimate of mitigation cost as it excludes the indirect emission reductions associated with awareness-raising, capacity development and replication.
83. There will also be numerous environmental and adaptation benefits. The lifetime of landfills in the six cities and towns will be prolonged by diverting a total of about 151,600 tonnes of organic waste from these landfills annually. Increased frequency of household waste collection and heightened awareness of waste issues among the population will lead to reduced uncontrolled waste dumping that will improve public hygiene and protect the quality of waterways. The production of a total of approximately 45,500 tonnes of organic compost per year will directly contribute to soil and water resource conservation through the improvement of agricultural soil properties and meeting the fertiliser needs of urban farmers. Tree planting will play a significant role in improving urban air quality, enhancing urban watersheds and reducing the vulnerability to climate change by absorbing atmospheric pollutants such as ammonia and nitrogen dioxide and by countering the urban heat island effect. An estimated 785 new jobs are expected to be produced by the compost value chain, excluding jobs that will be created in downstream compost marketing activities. The gender-differentiated approach adopted in this project will ensure that at least 50% of jobs created will be for women and youth.

### 3.3 Partnerships

#### 3.3.1 Project partners

84. For the COMPOST project to meet its objectives, a number of project partners have been identified as a part of the project approach to adopt a multi-stakeholder process (MSP). Since the project is operating at several levels from the central government to urban households in Ethiopia, the importance of the MSP approach cannot be underestimated. Through adoption of the MSP, the COMPOST project will be implemented in a context where there are complementary baseline initiatives with which synergies must be forged to deliver

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<sup>66</sup> Energy supply is primarily based on biomass. With a share of 92.4% of Ethiopia's energy supply, waste and biomass are the country's primary energy sources.

<sup>67</sup> See Humbo Project Design Document, pg. 48. Assumed moisture content of this wood is 30%, leading to dry matter of 3.6 tonnes harvested.

<sup>68</sup> The continued use of non-renewable biomass is addressed under the risk "Illegal fuel wood collection of reforested areas", where the municipal government will be responsible for managing such areas with appropriate fencing (fencing for areas designated for firewood harvesting and peri-urban forestry areas where such harvesting is prohibited), and the monitoring of planted forests on a regular basis as part of an MRV system to be established under Outcome 3 (preparation of NAMAs). In addition, municipalities will be trained to enforce land use plans using cadastral maps as part of Output 1.3. The net result of these efforts would be to minimise leakage from the illegal harvesting of non-renewable biomass from peri-urban reforested areas.

maximum benefits productively (efficiently and effectively) to beneficiaries. **TABLE 4** provides a listing of these partners to achieve the intended results of the COMPOST project.

**TABLE 4. Contributions of project partners.**

Stakeholder	Contributions	Relevant project outputs
<p>Ministry of Urban Development and Housing (MUDH)</p>	<p>The MUDH is the principal federal Government organ responsible for UGI and ISWM and to provide coordinated support to urban centres to make them capable of influencing their surroundings in implementing UGI into ISWM initiatives. MUDH is the lead implementing body for the Government’s national initiative on Green Infrastructure. Its Urban Planning, Sanitation and Beautification Bureau manages urban waste and greenery initiatives. It also oversees land-cover and housing projects, and is active in supervising MSE activities. In the context of this project, MUDH will coordinate with competent authorities such as Regional Bureaus and City Administrations to undertake management of UGI/IWSM elements during project implementation.</p> <p>In addition, the Urban Planning, Sanitation and Beautification Bureau of the MUDH is responsible for overall project coordination – i.e. for sharing project reports, involve stakeholders to contribute at different stage of the project implementation, and to collaborate with stakeholders to find alternatives solutions if and when problems arise. It will also coordinate Government ministries and stakeholders in UGI/ISWM activities; and liaise with donors and potential participants in the voluntary carbon offset market. The MUDH will play a catalytic role in the implementation of the national voluntary carbon offset scheme through the provision of cash co-financing to operationalise it.</p> <p>MUDH will assure the social and environmental safeguards of the project are implemented in the intervention cities.</p>	<p>MUDH will be involved in all components of the project. Some of the most relevant project outputs are:</p> <p>Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.</p> <p>Output 3.3: Developed comprehensive technology baselines and prioritisation of technology options for ISWM and UGI.</p> <p>Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented – initially covering 6 regional cities and towns but with the potential for scale-up within Ethiopia.</p>
<p>Ministry of Finance and Economic Cooperation (MoFEC)</p>	<p>MoFEC oversees the Climate Resilient Green Economy (CRGE) Facility. The Facility has been established in order to channel international financing for the implementation of Ethiopia’s Green Economy Strategy. The project will work with the Ministry to better integrate ISWM and SWM into the CRGE Strategy.</p> <p>MoFEC will oversee project budget utilisation, integrating the MUDH MRV mechanism with that of the CRGE facility through MEFC. It will also be involved in the project phase-out period to assure sustainability of the project with MUDH’s day-to-day operations.</p>	<p>Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.</p>

Stakeholder	Contributions	Relevant project outputs
<p>Ministry of Environment, Forest and Climate Change (MEFCC)</p>	<p>MEFCC houses the GEF Operational Focal Point, the UNFCCC Focal Point and the REDD+ Focal Point. MEFCC will provide technical guidance on how to support solid waste management (based on its involvement in the SWM Proclamation) and urban greenery (due to its extensive experience in Addis Ababa). The Ministry's Forest Department experts will support the reforestation efforts to be undertaken in each of the 6 cities and towns.</p> <p>Additionally, MEFCC will be involved in linking the project MRV mechanism with the national MRV system that is expected to be designed during the project lifetime. MEFCC will be closely involved in the design and operationalisation of the national voluntary carbon offset scheme.</p>	<p>Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation.</p> <p>Output 3.1: Established standardised UGI and ISWM baselines for calculating emission reductions.</p> <p>Output 3.2: Developed MRV mechanisms for each of the 4 elements in Output 3.1.</p>
<p>Ministry of Agriculture and Natural Resources (MoANR)</p>	<p>The Ministry of Agriculture will provide technical guidance on sustainable urban agriculture and composting. The project will collaborate with the Ministry's Agricultural Transformation Agency during composting quality testing.</p> <p>The MoANR is also responsible for developing work owner/process for urban agriculture, investigating the soil condition of the urban area where horticultural products could be produced, promoting and creating market opportunities to sell the products; and providing extension services on composting.</p> <p>The project will link with MoANR under the Soil Fertility Department for wider dissemination of quality compost into urban and peri-urban agriculture. The MoANR will also be involved in establishing field trials on the use of compost in urban agriculture, and in the dissemination of the results to farmers. Its agricultural extension services will act as an outlet for marketing of compost in urban agriculture.</p>	<p>Output 2.3: Market outlets for compost generated by the municipal composting plants through long-term contracts with public (municipalities, city/town administrations), and private (landscapers, nurseries, farmers) institutions so as to support urban agriculture and peri-urban forestry on a large-scale.</p>
<p>Horn of Africa Regional Environment Centre (HoAREC)</p>	<p>HoAREC is a network of members and partners consisting of environmental CBOs, NGOs and higher learning institutes from six countries in the Horn of Africa. It is well placed to link the project to its regional members and partners for sharing of knowledge and lessons learned on UGI/ISWMS.</p> <p>HoAREC is managing the Ethiopian Climate Innovation Centre (CIC). It is also assisting Addis Ababa City Administration in an initiative to rehabilitate the Repi landfill into a recreational area with the support of the City of New York and the US EPA. It therefore has a key role in UGI/ISWM development programmes and will be involved in knowledge-sharing, especially relating</p>	<p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.</p>

Stakeholder	Contributions	Relevant project outputs
	to the rehabilitation of open waste sites (such as in Bishoftu).	
Technical Vocational Educational Training institutions (TVETs)	<p>TVETs will be supported by Government and donor financing through training (such as by building on UNDP’s Entrepreneurship Programme) to help MSEs establish businesses with the supply and demand opportunities associated with compost, which will enhance the entrepreneurship capacity of SMEs. TVETs will also certify SMEs working in the area of compost production.</p> <p>The MUDH will establish partnership agreement with TVETs through its project coordination office to organise and conduct training for SMEs in UGI/ISWM.</p>	Output 2.5: ISWM and UGI curriculum in education.
Ethiopian Standards Agency (ESA)	The ESA is the Government organisation responsible for developing standards for different products and services. It has already prioritised the development of standards for bio-fertilisers and compost. Because of lack of funding, standards have been developed for only four out of six bio-fertilisers to date; through the project, the ESA will develop standards for compost generated from MSW. It will also be involved in providing technical support, training and advisory services and assisting the project in the implementation of the standard for compost.	Output 1.4: An adopted national standard for organic compost with quality assurance systems (QAS) is in place at the regional (sub-national) level.
Wondo Genet College of Forestry and Natural Resource of Hawassa University	The College of Forestry and Natural Resource is carrying out a mapping of the most suitable plant species for UGI projects in the agro-ecological zones of Ethiopia. The COMPOST project will collaborate with the College to identify the most suitable plant species that will be used for UGI development in the six cities and towns. It will support the development of manuals for tree species for each city.	<p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.</p> <p>Output 4.3: Reforestation of 17,700 ha of degraded land in and around 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.</p>
GIZ	GIZ has had significant experience in implementing waste and urban greenery activities throughout Ethiopia. It has established a set of Standards for Urban Greenery (NUGIS) and for Solid Waste Management. Although GIZ is no longer supporting urban development activities, the COMPOST project will support the adoption and implementation of the two standards in the 6 target cities and towns.	Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.
World Bank	The World Bank is financing the Second Urban Local Government Development Programme (ULGDP II), which is being implemented by MUDH. This relevant programme will support ULGs to implement activities such as roads, water supply, sanitation, solid waste and greenery. The COMPOST project will build on ULGDP II and provide examples of opportunities for GHG emission reductions and compost market growth for other cities/towns to replicate.	Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented – initially covering 6 regional cities and towns but with the potential for scale-up within Ethiopia.

Stakeholder	Contributions	Relevant project outputs
<p>Agence Française de Développement (AfD)</p>	<p>AfD is active in the field of SWM and is providing technical and financial (debt financing) assistance to the Addis Ababa City Administration. It has supported the design and construction of a new sanitary landfill (located approximately 27 km from the centre of Addis Ababa) and two transfer stations. The sanitary landfill is also expected to receive MSW from neighbouring cities and towns in the region of Oromia. Discussions with AfD have revealed that although it does not expect to expand its activities in other cities and towns in the near future, the situation could change upon Government request. Since the urban NAMA stands to be replicated and scaled-up, the COMPOST project will maintain an open communication with AfD during implementation.</p>	<p>Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented – initially covering 6 regional cities and towns but with the potential for scale-up within Ethiopia.</p>
<p>Civil Society and Community-Based Organisations, Non-Governmental Organisations and Women's Organisations</p>	<p>The Clean and Green Initiative in Addis Ababa is a consortium of representatives from NGOs and the private sector that has been active with urban greenery and waste management initiatives in Addis Ababa. Women-based MSEs will be supported with nursery development and to bring awareness and knowledge of household sorting of organic waste. The selection and inclusion of CSO/CBO/NGOs/Women's organisations in technical working groups will take place on a city by city basis.</p>	<p>Output 2.1: A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance the occupational health and safety conditions of Micro &amp; Small Enterprises (MSEs) – especially in SWM – and to enhance the entrepreneurship skills of all MSEs.  Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.  Output 2.3: Market outlets for compost generated by the municipal composting plants through long-term contracts with public (municipalities, city/town administrations), and private (landscapers, nurseries, farmers) institutions so as to support urban agriculture and peri-urban forestry on a large-scale.  Output 4.1: Composting plant built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency's blending facilities to progressively complement blended chemical fertilisers with compost.  Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.  Output 4.3: Reforestation of 17,700 ha of degraded land in and around 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.</p>
<p>Private sector companies</p>	<p>During the project design and through participation in the validation workshop of the COMPOST project, several private companies such as Ethiopian Airlines and META Breweries have shown interest in participating in the national voluntary carbon offset scheme. For instance, Ethiopian Airlines is already spending several millions Ethiopian Birr each year to support tree planting but without any means of measuring, verifying and reporting its impacts in terms of GHG emission reductions or job</p>	<p>Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation.</p>

Stakeholder	Contributions	Relevant project outputs
	<p>creation. It is interested to continue to do the same through the COMPOST project and thereby benefit from a robust MRV system for GHG accounting and reporting. Hence, the COMPOST project will collaborate with these interested Corporate Social Responsibility (CSR) initiatives to participate in the voluntary carbon offset scheme. The carbon offset scheme will be linked to GHG emission reductions arising from composting; the plantation of peri-urban forests in the 6 cities/towns; and through the generation of renewable biomass from the managed forests for fuelwood. In the envisaged methodology, CSR initiatives will pay NGOs, firms or city/town councils in the 6 cities/towns to plant the appropriate number of trees to offset defined levels of emissions, thereby generating an income stream that can be re-invested in further compost production and reforestation.<sup>69</sup></p>	
<p>Micro-finance institutions (MFIs)</p>	<p>MFIs are delivering financial services in Ethiopia with particular emphasis on rural and urban poor households, the promotion of both credit and savings products, and a strong focus on sustainability.</p> <p>MFIs have the experience of providing financial support to MSEs carrying out urban solid waste collection at the household level. Discussions with one of the largest MFIs in the Region of Oromia<sup>70</sup> has revealed that it will be willing to lend to MSEs engaged in composting if the activity is supported by a sound financial and business model (as is the case with the COMPOST project).</p>	<p>Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.</p>
<p>Association of Micro-Finance Institutions</p>	<p>AEMFI advances best practices both among its member MFIs and for the industry as a whole. AEMFI also serves as both the voice and the support system for the industry. The Association serves as a forum through which MFIs can exchange information; enhance capacity through the provision of training, capacity building and funding negotiations, and strengthen the sector by providing research, advocacy, promotion and engagement to positively influence policies and practices. The AMFI will support the project by communicating the results of the project, especially those arising from Component 2, to its members that will help to increase the visibility of the project, as well as sharing of lessons learned that will be important for replication.</p>	<p>Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain</p>
<p>Federal Micro and Small Enterprise Development</p>	<p>The objective of FEMSEDA is to encourage, coordinate and assist institutions engaged in service provision to the development and</p>	<p>Output 2.2: An established financing mechanism to support the establishment of new MSEs and to</p>

<sup>69</sup> Compost is used in the substrate for planting tree seedlings. A typical mixture composition that is used in Ethiopian cities and towns is 1 compost : 1 sand : 2 forest soil (by volume).

<sup>70</sup> Meeting with the representatives of the Oromia Credit Savings Share Company (OCSSCO) on 1 February 2016.

Stakeholder	Contributions	Relevant project outputs
Agency (Ethiopia) FEMSEDA	expansion of Micro & Small Enterprises in the country. FEMSEDA will support the MSEs that are engaged in the solid waste value chain (particularly in compost making and urban greenery development) in the 6 target cities to have access to micro-credit.	support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain
Regional Bureaus for Urban Development	<p>Regional Bureaus for Urban Development and Land Use are the lead implementing bodies for the Government at the regional level with regard to urban planning, sanitation, beautification and land use. The Regional Bureaus have direct oversight of the municipal ISWM and UGI activities in terms of budgetary provisions, and monitoring and evaluation of performance. As can be seen in <b>FIGURE 6</b>, the implementation of regional activities under the coordination of Local Project Coordinators and technical input from the municipal Technical Committees will be carried out under the oversight of the Regional Bureaus.</p> <p>Bureaus will cascade developed standards, manuals, maps, guideline in the respective cities and towns.</p>	<p>Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.</p> <p>Output 1.5: A twinning programme with other cities and towns experienced in ISWM and UGI, and with institutions developing and implementing standards, to inspire and build capacities.</p>
The 6 urban cities	<p>The 6 cities and towns are the main beneficiaries of the COMPOST project. For instance, all of the investment under Component 4 – which accounts for 62% of all GEF funding – will take place in the urban cities and towns. The municipalities of Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle will be implementing ISWM and UGI initiatives. These municipalities will directly recruit MSEs to implement streamlined waste collection services, rearing of seedlings in nursery operations, and the plantation of seedlings for urban green shrubbery and trees in public areas.</p> <p>Further, each one of the 6 cities and town will integrate project activities with regional universities to undertake R&amp;D, capacity building and information sharing. These universities are: Adama University for the City of Adama and Bishoftu town; Wondogenet University for the City of Hawassa; Haramaya University for the City of Dire Dawa; Mekmelle University for Mekelle City and Bahir Dar University for Bahir Dar City. The cities and towns will also be responsible for selecting and providing incentives for source sorting of household waste; providing or facilitating the provision of licences to MSEs engaged in composting and UGI activities; and awareness creation at household level regarding ISWM, among others.</p>	<p>Output 1.5: A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard.</p> <p>Output 4.1: Composting plants built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency’s blending facilities to progressively displace chemical fertilisers with an organic blend.</p> <p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.</p> <p>Output 4.3: Reforestation of 33,309 ha of degraded land in and around the 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.</p>

Stakeholder	Contributions	Relevant project outputs
	A critical intervention of the cities and towns concerns the mapping and development of Resettlement Action Plans (RAPs) relating to illegal settlers on land forming part of the project boundary for UGI activities, as per the Social and Environmental Screening in <b>Annex F</b> .	
Households	Households are one of the main stakeholders in ISWM. They generate MSW and the project will rely on their participation through the segregation of organic waste from other solid wastes at the household level. They will be incentivised by the project for segregating household waste according to established guidelines.	Output 1.3: Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities
UNDP Country Office (UNDP CO)	<p>The UNDP Country Office (CO) has been supporting the Government of Ethiopia with strengthening institutional capacity for carrying out evidence-based policy planning to enhance the resilience of Ethiopia against shocks. The UNDP support is discussed below while drawing immediate links with the COMPOST project.</p> <p>UNDP will monitor the implementation of the COMPOST project, review progress in the realisation of the project outputs, and ensure the proper use of UNDP/GEF funds. Working in close cooperation with MUDH, the UNDP CO will provide support services to the project - including procurement, contracting of service providers, human resources management and financial services - in accordance with the relevant UNDP Rules and Regulations, Policies and Procedures and Results-Based Management (RBM) guidelines.</p> <p>UNDP CO also provides its services through technical advice, facilitating change processes, support to mechanisms for advocacy, networking and partnership building including intermediation for information, expertise and funds, and knowledge development and dissemination.</p> <p>It will also contribute directly to the implementation of several outputs through the provision of parallel financing.</p>	<p>Output 1.5: A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP's Displacement and Resettlement Standard.</p> <p>Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.</p>

85. The COMPOST project will also collaborate with a number of other ongoing government and donor agency projects in sustainable urban development. These are listed in the following paragraphs.
86. The *Second Urban Local Government Development Programme (ULGDP II, US\$ 53m 2015-2019, implementation by MUDH)* aims to enhance the institutional performance of 44 ULGs in the planning, delivery and sustained provision of urban services. The capital investment component for the 44 ULGs is US\$ 499.53 million (US\$ 176.53 million from the Government and US\$ 323 million from the International Development

Association (IDA)). Activities to be financed include core infrastructure investments in roads, water supply, sanitation, solid waste and greenery.

87. The *Climate Resilient Green Economy (CRGE) Fast-Track Projects*<sup>71</sup> (MUDH, approximately US\$ 424,000 for UGI projects and approximately US\$ 938,000 for waste management projects, 2014-2015) are financed by the Ministry of Finance and Economic Development (MoFED) using funding channelled through the CRGE Facility. Sixteen fast-track projects were implemented in the urban sector that will contribute to the triple objectives of economic growth, greenhouse gas emission reduction and resilience to the adverse effects of climate change. Six UGI projects are being implemented in Adama, Asossa, Butajera, Dire Dawa, Hawassa, and Shire, while a further 10 solid waste management (SWM) projects are being implemented in Addis Ababa (x2), Bishoftu, Butajera, Dessie, Gambella, Harar, Hawassa, Jigjiga and Logia. A total of US\$ 1.5 million has been allocated to this initiative, including a budget of US\$ 150,000 for coordination activities by MUDH. The projects were implemented during 2014 and 2015. The main features of the fast-track projects relevant to the COMPOST project are summarised in **Error! Reference source not found.** In addition, under the CRGE Facility, a Green Climate Fund (GCF) proposal is under development that aims to build upon and geographically expand the approach developed under the GEF-financed COMPOST project.
88. *Enhancing National Capacity for Agricultural Growth Programme (AGP)* (UNDP, US\$ 16m, 2011-2015): This project supports the Agriculture Transformation Agency (ATA) and aims to improve the livelihoods of smallholder farmers by fostering greater productivity. The construction of a series of fertiliser blending facilities<sup>72</sup> is being supported by the AGP to be able to remove dependencies on imported chemicals. Currently, inorganic fertiliser is one of the main inputs in agriculture in Ethiopia.<sup>73</sup> In 2013, some 700,000 tonnes of chemical fertiliser (mainly diammonium phosphate – DAP – and urea) were applied to more than 5.8 million ha of crop land. However, the rising price of artificial fertilisers (partly because of the removal of subsidies) and dwindling phosphate reserves have created a market opening for locally-sourced organic fertilisers from animal manure, human excreta and other bio-wastes. In response, ATA constructed a blending facility in the Oromia region in 2014 to support the Becho-Woliso Farmer’s Cooperative Union. ATA plans to increase the number of blending facilities to approximately 20.
89. The *Horn of Africa Regional Environment Centre and Network (HoAREC)* has been assisting Addis Ababa City Administration on an initiative to re-purpose the city’s Repi landfill – building on earlier work undertaken by UNDP – into a recreational area with the support of the New York City Administration, Washington DC, and the US EPA. A preliminary design has been completed but the final cost of the project has yet to be finalised. Discussions have also taken place for the technical support of the US EPA to train staff of the Addis Ababa City Administration on the management and operation of a new sanitary landfill.
90. The *Entrepreneurship Development Programme (EDP)* (UNDP, 8.6million US\$, 2015-2020) supports entrepreneurs and job creation by increasing the competitiveness and profitability of Ethiopia’s MSEs, especially those owned by women and youth. In 2013, an Entrepreneurship Development Centre was established to offer potential entrepreneurs and MSEs intensive training in entrepreneurship. Business Development Support (BDS) is also being provided to business owners to improve their business management and operational skills and capacity, and to potential entrepreneurs to establish new business start-ups.
91. MUDH and the Ethiopian Cities Prosperity Initiative (ECPI): Building Green, Resilient, Well-Governed Cities (MUDH & UN-Habitat, 2014-2025) involves development of the Cities Prosperity Index (CPI) for Ethiopian cities and towns. The CPI measures prosperity across five dimensions of prosperity — productivity, infrastructure, quality of life, equity and environmental sustainability.<sup>74</sup> The ECPI initiative will establish

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<sup>71</sup> Information obtained from Mr Zerihun, CRGE Facility, Ministry of Finance and Economic Cooperation.

<sup>72</sup> Discussions with the ATA have revealed that the facilities can blend chemical fertilisers only. The blended chemical fertilisers can then be mixed with organic compost prior to application in fields.

<sup>73</sup> Central Statistics Agency (2013), *Agricultural Sample Survey 2013/2014 – Vol III. Report on Farm Management Practices*.

<sup>74</sup> <http://unhabitat.org/urban-initiatives/initiatives-programmes/city-prosperity-initiative/>.

'urban observatories' at the municipal, regional and national level to become nodes where urban-related data are collated and analysed on an ongoing basis, thus building the foundation for a robust statistics database on urbanisation in Ethiopia that is critical for informed policy-making.

### **3.3.2 Stakeholder engagement**

92. The primary stakeholder beneficiaries to be engaged on the COMPOST Project will be the urban inhabitants of participating Ethiopian cities. This will include several classes of stakeholders, from central Government policymakers to municipal personnel and the MSEs collecting household waste. The primary driver to engage stakeholders with the COMPOST project is the decentralisation of governance responsibilities on UGI and ISWM to the local level. This will involve empowering local communities to manage their waste and biomass resources, and strengthening the capacity of local stakeholders to build partnerships between the public and private sectors for the collection of municipal and agricultural waste for the purposes of increasing supplies of compost materials.
93. More specifically, central Government policymakers will be engaged with the COMPOST project to strengthen the efforts of the GoE to fulfil the objectives of the GTP II Plan to promote significantly greater use of ISWM and UGI. For municipal personnel, their engagement with the COMPOST project will stem from the benefits they will derive from the project's capacity building efforts, which will enable municipal personnel to improve their abilities to service their clients in municipal waste collection and urban greening. For MSEs involved in municipal waste collection and the start-up and operation of nurseries and the plantation of vegetation for UGI initiatives, their engagement will be strengthened through the prospect of increased business opportunities through improvement of their efficiencies in waste collection and their capacities to increase composting of organic waste streams, through marketing and sales of compost for UGI initiatives and increasing urban agriculture, and in delivery of increased volumes of plants from nurseries involved in UGI initiatives.
94. Another element associated with stakeholder engagement is the GoE's intention to achieve the sustainable development goals of its GTP II Plan and CRGE Strategy through the creation of jobs. The creation of jobs is part of the Micro and Small Enterprises Development Strategy (MSEDS) of the GoE to develop an attitude of entrepreneurship among the youth and women. Details of the MSEDS are found in Para 92.
95. Lastly, peri-urban agricultural enterprises will be engaged with the COMPOST project to enable them to utilise increased supplies of compost from MSW that will provide them the opportunity to offset the use of costly chemical fertilisers. Through the partial substitution of chemical fertilisers with compost, low-income and subsistence farmers in peri-urban areas will be able to reduce their input costs. This will enable some of the more vulnerable sectors of this population, mainly women, to generate more income and improve their standard of living.

### **3.3.3 Mainstreaming gender**

96. The overarching objective of the GTP II (**Annex L**) is the realisation of Ethiopia's vision of becoming a lower middle income country by 2025. It aims to achieve an annual average real GDP growth rate of 11% within a stable macroeconomic environment while, at the same time, pursuing aggressive measures towards rapid industrialisation and structural transformation. One of the strategic pillars to achieve the objectives of the GTP II is to "promote women and youth empowerment, ensure their effective participation in the development and democratisation process and enable them to equitably benefit from the outcomes of development".
97. To support the GTP II, the Government of Ethiopia has developed a Micro and Small Enterprises Development Strategy (MSEDS)<sup>75</sup> for the creation of jobs and to develop an attitude of entrepreneurship among the youth

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<sup>75</sup> MUDHCo (2013). *Micro and Small Enterprises Development Strategy*.

and women. It is worth noting that the MSEDs singles out youth and women as the main cohorts of the population to drive the renaissance of Ethiopia through the establishment of MSEs and in exploiting the opportunities of the compost value chain. With project support, women – and, in particular, female-based MSEs – will be supported to have an active role in ISWM and UGI development and implementation, such as organic waste sorting at the household level, the production and marketing of compost, and tree seedling growth using compost in nurseries. MUDH has provided strict guidance that the COMPOST project should contribute to the overall strategy that 50% of all new jobs created will be for women.<sup>76</sup>

98. The financial model discussed in Section 4.5 (with details in **Annex O**) quantifies the number of direct jobs created from windrow composting of the organic component of MSW (i.e. excluding the marketing and distribution of compost). Based on existing baseline composting activities in Ethiopia, the number of direct jobs created through composting by the end of the project (i.e. 2021) will be 744. Hence, the COMPOST project will create at least 372 additional jobs for women in the 6 cities and towns from composting alone. Additional direct jobs will be created by the UGI activities of the project, such as in nurseries, and digging and planting of trees. These jobs will contribute to women increasing their asset base. Supporting this idea is a study carried out in Bishoftu by the city’s Women and Children Affairs Office. The study confirms that the involvement of women in urban greenery enables them to secure a sustainable income and better acceptance in society.<sup>77</sup>

### **3.3.4 South-South and Triangular Cooperation (SSTrC)**

99. As discussed above (Section 3.1.3), the 6 cities and towns supported by the COMPOST project will be twinned with experienced cities around the world (Output 1.6). Twinning will enable Ethiopian ULGs to share experiences and to garner knowledge.

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## **4. FEASIBILITY**

### **4.1 Cost efficiency and effectiveness**

100. The COMPOST project is designed to remove all identified obstacles and barriers towards achieving GHG emission reductions and strong sustainable urban development and adaptation co-benefits through the composting of organic MSW and the enhanced use of compost. While there have been a number of ongoing Government initiatives to improve the generation of compost from municipal solid waste for the purposes of increasing UGI activities in Ethiopian cities, the current volumes of compost being generated, and the volume of UGI activities in Ethiopian cities are not sufficient to meet the objectives of GTP II.
101. Key aspects to the strategy employed by the COMPOST project is to improve the integration of all ISWM and UGI activities that will strengthen the supply chain for compost from MSW and increase demand for this compost from higher volumes of UGI activities. Through achieving the 4 intended outcomes of this project, project stakeholders will have increased confidence in setting up and implementing more urban systems throughout all Ethiopian cities that will result in the enhancement of MSW management and the increased use of compost in UGI.
102. One of the outcomes includes the demonstration of a strengthened supply chain of compost from MSW and support for UGI activities using this compost in 6 cities in Ethiopia. On the basis of newly-designed MRV mechanisms to monitor the GHG emission reductions from these demonstrations, the COMPOST project will provide an incremental but cost-effective means for generation of GHG emission reductions.

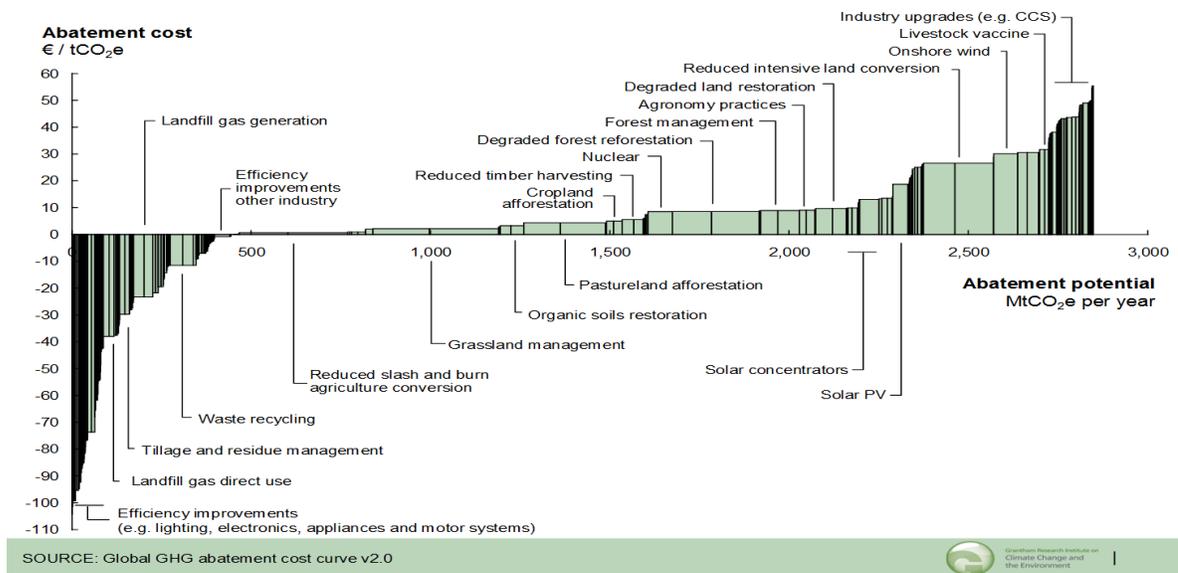
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<sup>76</sup> Discussions with His Excellency Mr Makruya Haile, Minister of MUDHCo during the PPG.

<sup>77</sup> Government of Ethiopia (2013). *Ethiopia Joint Flagship Programme on Gender Equality and Women’s Empowerment Phase 1. Evaluation - Final Report*.

103. Marginal GHG abatement cost curves are used to indicate the economic attractiveness of GHG mitigation options, along with the amount of GHG reductions achievable via those options. Economic attractiveness is measured in terms of unit cost of GHG reductions – i.e. by dividing the total cost associated with GHG abatement by the amount of GHG emissions reduced during the economic life of the GHG mitigation option or technology. **FIGURE 5** shows the marginal abatement cost curve (MACC) for Africa.<sup>78</sup> The negative abatement costs for waste recycling and waste management (e.g. methane avoidance and landfill gas capture etc.) demonstrate that such types of project are economically viable. The MACC shows that afforestation and reforestation projects have relatively low abatement costs, implying their cost-effectiveness.

### Africa abatement cost curve 2030



**FIGURE 5. Marginal abatement cost curve (MACC) for Africa over the 2030 time horizon.**

## 4.2 Risk Management

104. The risks associated with the project are detailed in **TABLE 5**. As per standard UNDP requirements, these risks will be monitored quarterly by the Project Manager. The Project Manager will report on the status of the risks to the UNDP Country Office, which will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. 5). Management responses to critical risks will also be reported to the GEF in the annual PIR.

<sup>78</sup> *Possibilities for Africa in Global Action on Climate Change* (Grantham Institute for Climate Change, 2009), pg. 19; *Impact of the financial crisis on carbon economics, version 2.1 of global greenhouse gas abatement cost Curve* (McKinsey & Company, 2010).

**TABLE 5. Project risks and mitigation measures.**

Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Lack of Government attention at the national level	Political	<p>Probability – Lack of political support from federal Government to support waste management, and/or the low level of integration between ISWM and UGI in the GTP II of the MUDH.</p> <p>Impact – Delay in project implementation</p> <p>P = 1 I = 2 Risk = 2 (Low)</p>	<p>The Government has paid close attention to climate change mitigation, as evidenced by playing a lead role in global climate change negotiations and being a forerunner in Africa in the building of a green economy. It has developed numerous green development strategies, including the National Growth and Transformation Plan and the Green Development Strategy. Such motivation is a good indicator of Ethiopia’s conviction to ensure sustainable growth. As discussed in Section 2, Ethiopia has recently reiterated its commitment to carry out large-scale GHG emission reductions in its INDC in a bid to become carbon-neutral in the medium-term. Areas that have been identified to deliver GHG emission reductions are: (1) agriculture; (2) forestry; and (3) buildings (covering waste management). These areas are squarely aligned with the integration of ISWM and UGI into an urban NAMA COMPOST project.</p>	Project Steering Committee, Project Manager, UNDP Country Director	No change
Lack of Regional support for the project	Political	<p>Probability – Lack of comprehensive understanding of the importance of the project at the regional (sub-national) level, including the linkages between ISWM and UGI.</p> <p>Impact – Delay in the commencement of the project</p> <p>P = 2 I = 2 Risk = 4 (medium)</p>	<p>The Regional Bureaus for Urban Development and Land Use that cover the four regions in which the six target cities are located have participated in the project design and validation of the Project Document. They are the lead implementing bodies for the Government at the regional level concerning urban planning, sanitation, beautification and land use. In order to mitigate the risk of lack of support, the Regionals Bureaus have been given an active role in project implementation. As can be seen in <b>FIGURE 6</b>, the implementation of regional activities under the coordination of Local Project Coordinators and technical input from the municipal Technical Committees will be carried out under the oversight of the Regional Bureaus.</p> <p>The Regional Bureaus have direct oversight of the municipal ISWM and UGI activities in terms of budgetary provisions, and monitoring and evaluation of performance. The letters of cofinancing provided by the 6 city administrations or municipalities that represent part of their recurrent budget</p>	Project Steering Committee, Regional Bureaus, Technical Committees in cities and towns, Project Manager.	No change

			over the next 5 years were done with the support of the Regional Bureaus.		
Lack of town / city administration engagement	Political	<p>Probability – Lack of political support for the implementation of the project activities at the city/town level.</p> <p>Impact – Delays in the implementation of the project</p> <p>P = 1 I = 4 Risk = 4 (Low)</p>	<p>The city and town administrations and municipalities have played a central role in the design, conceptualisation and formulation of the COMPOST project. They have also actively participated in the baseline assessments that were carried out to inform the project design. The commitment shown by the city and town administrations is also revealed by the participation of the same personnel (i.e. no turnover of personnel) over the 18-months period covering the PIF and PPG stages of project development. Since close to 75% of all funding is allocated for activities at the city and town level, the commitment of the city/town administrations is revealed in the key role of the Local Project Coordinators (LPCs in <b>FIGURE 6</b>) to safeguard the timely and productive implementation of the project activities in cities/towns. The LPCs will represent the interests of the cities and towns in the PSC.</p> <p>The commitment of the cities and towns is further revealed by their cofinancing that relates to their recurrent and capital budgets to 2021.</p>	Project Steering Committee, Project Manager, Local Project Coordinators, Technical Committees	No change
Low financial sustainability of compost production	Financial	<p>Probability – The economics of compost production is not attractive to support a market chain</p> <p>Impact – Low financial sustainability of composting</p> <p>P = 4 I = 4 Risk = 16 (high)</p>	<p>A detailed financial model has been developed (Section 4.6 and <b>Annex O</b>) to substantiate investments in composting of urban solid waste generated by households in the 6 target cities and towns. Under the justified assumptions used in the model, the financial performance indicators for investing in the composting of MSW are:</p> <ul style="list-style-type: none"> <li>• Net Present Value (<b>NPV</b>): ETB 1,497,898 (US\$ 69,347) (using a discount rate of 10% as per MoFEC guidelines)</li> <li>• Internal Rate of Return (<b>IRR</b>): 15.45%</li> <li>• The composting operations produce a positive cash flow in year 2021 equal to ETB 20,118,854 (US\$ 931,428).</li> </ul> <p>In the COMPOST project, the capital is a mixture of concessional loans and micro-finance with interest rates of 5% and 13% pa, respectively. Since the IRR is higher than the cost of capital (considered here as the interest rate on debt), the production of compost is considered to be financially viable. The financial viability of composting is further revealed</p>		

			<p>by the positive cash flow at the end of the project lifetime, and the positive NPV.</p> <p>In order to test the robustness of the financial model, sensitivity analyses (<b>Annex O</b>) have been carried out to investigate the influence of 5 key variables (out of the 13 used in the financial model) on the price of compost to deliver a project IRR similar to that in the Reference Scenario – i.e. 15.45%. The five variables are: price of carbon, compost distribution cost, transfer price of household organic waste, cost of windrow sheds, and cost of maintenance and repair. Considering all the conservative conditions tested in the sensitivity analyses, the maximum price of compost is around ETB 1 / kg. This is the price at which some municipalities are currently procuring compost from rural farmers. The sensitivity analyses further reveal the financial attractiveness of producing compost in urban centres.</p> <p>The technical assistance components of the COMPOST project will further ensure the financial sustainability of the project by putting in place the following (main ones only):</p> <ul style="list-style-type: none"> <li>• National standards and QAS for compost (Output 1.4) supported by capacity building of SMEs and city administrators (Output 2.1).</li> <li>• Micro-credit facilities to support the setting up of MSEs to carry out composting (Output 2.2).</li> <li>• Development and operationalisation of a national voluntary carbon offset scheme that will create a market “pull” for compost (Output 2.6).</li> <li>• Market outlets for compost generated by the municipal composting plants through long-term contracts with public (municipalities, city/town administrations), and private (landscapers, nurseries, farmers) institutions so as to support urban agriculture and peri-urban forestry on a large-scale (Output 2.3). The municipalities will be the first buyers of compost for use in municipal UGI activities such as nurseries, inner city beautification and peri-urban afforestation and reforestation.</li> <li>• Households will be incentivised to carry out sorting of their waste in order to reduce pre-composting waste</li> </ul>		
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			handling costs and to minimise or avoid contamination of the feedstock for composting (Output 1.3).		
Low level of cooperation between executing institutions at national and local levels	Political and Operational	<p>Probability – Unwillingness at sub-national level to collaborate with the national-level institutions to implement the project</p> <p>Impact – Failure of the project</p> <p>P = 2 I = 5 Risk = 10 (high)</p>	Existing strategies at the national and local levels, as well as legal frameworks, will provide a conducive environment to execute low-emission urban development. Project implementation will also ensure an inclusive, participatory approach at the local level, involving all key stakeholders including women and youth. As shown in <b>FIGURE 6</b> , the project will put in place an institutional arrangement that will facilitate coordination between the national, regional and local levels of government. All three levels of governance are captured in the organisational structure, as well as being represented in the Technical Committee (at the city/town level) and the PSC (federal level). As a risk mitigation strategy, each city/town will nominate a Local Project Coordinator (LPC) funded through in-kind contributions to oversee and coordinate the implementation of the project activities at the city/town level. The LPCs will also be members of the PSC and will be the focal points linking the Regional Bureaus and the MUDH.	Regional bureaus and municipalities / city administrations	No change
Contamination of organic waste with hazardous materials	Operational	<p>Probability – Household organic waste is contaminated with hazardous materials</p> <p>Impact – Limited end use of compost leading to failure of the project</p> <p>P = 2 I = 5 (risk = high)</p> <p>(Note: Please see <b>Annex F</b> for more details regarding the risk of contamination and its potential</p>	<p>There are multiple ways in which this risk will be mitigated.</p> <p>The socio-economic background of households in the urban areas is one mitigating factor. The mean income of households of these cities is low , and is not expected to change significantly during the project lifetime; as a result, most of the waste generated by these cities is predominantly from food sources and is not related to electronics, chemical products or other hazardous materials.<sup>79</sup></p> <p>Further, hazardous waste is mainly related to commercial waste. The COMPOST project will be applicable only at the household level, and it will not accept the handling of any hazardous waste. This will be a condition for the implementation of the project in the 6 target cities and towns.</p> <p>The compost will be used in UGI applications that do not all require the same level of quality. For instance, the highest</p>	Local administrations / municipalities, MUDH, MSEs	No Change

<sup>79</sup> This was reported by city/town representatives during the Project Document development validation workshop. Please see the SESP given in Annex F.

		impacts on the health and safety of waste handlers)	<p>and food-grade quality waste will be required for the application of compost in urban agriculture, whereas a lower quality compost can be used in afforestation and reforestation projects. The standards and QAS (Output 1.4) will be developed according to compost end-use. A risk mitigation approach built into the COMPOST project is initially to use compost generated from composting of household organic waste in afforestation and reforestation activities.</p> <p>The project will provide mandatory training to entrepreneurs and their personnel (i.e. MSEs) through certified TVET training and other participating academic institutions on the occupational safety hazards of waste management and proper handling of municipal solid waste from collection to composting (Outputs 2.1 and 2.5). This should address mitigation of exposure risks of MSE personnel to waste hazards.</p> <p>Additional ways in which the impact of waste hazards will be minimised or avoided are:</p> <ul style="list-style-type: none"> <li>• Carrying out sorting of waste by households under Output 1.3 based on the National Urban Solid Waste Management Standards (NUSWMS) that provides guidelines for sorting of waste at the household level, and</li> <li>• Using protective equipment by persons handling household waste, which the COMPOST project will insist on as a condition of its financial and technical assistance. MSEs involved in waste handling and composting activities in the project boundary will be audited periodically for their use of protective equipment.</li> </ul> <p>As part of the professionalisation of MSEs involved in the urban solid waste sector, the TVET-certified courses will be updated to include management plans regarding the handling of hazardous wastes.</p>		
Difficulties for municipalities to establish and maintain cost recovery	Financial and Operational	Probability – Low level of awareness of the benefits and business opportunities associated with the compost market on both the production and end-use sides	Capacity reinforcement will be provided to the cities and towns to be able to perform annual budgeting and accounting for all mitigation measures in the COMPOST project. Furthermore, the project will reinforce the capacities of municipalities to actively participate in the national voluntary	MUDH, Municipalities, Regional Authorities, MSEs	No change

mechanisms for waste collection / management may pose a challenge for them to collect service fees		causes stakeholders to lose trust in the production of compopst for urban solid waste  Impact – Limited sustainability of the project  P = 3 I = 3 Risk = 9 (medium to high)	carbon offset scheme that will generate revenues that can further support municipal UGI activities and create a market “pull” for compost. The carbon revenues can be used to partially offset any shortfalls in recovering waste collection service fees from households.		
Lack of nationally-available expertise and human resources	Operational	Probability – Difficulty in finding the human resources to implement activities due to insufficient public sector resources and poor training  Impact – Delay in the implementation of the project  P = 2 I = 2 (Risk = low)	Universities and TVET colleges will be supported in introducing ISWM and UGI into existing degree programmes or vocational training courses. Students will be trained in the most up-to-date urban practices in the context of their respective disciplines. After training, a fresh pool of technically-qualified recruits will facilitate diffusion of UGI and ISWM immediately in the 4 regions containing the 6 target cities and towns. The composting facilities that will be built under Output 4.1 will be used to provide practical training and work experience for new technicians and graduates through a learning-by-doing approach. MSEs will also be trained in compost production and marketing as well as basic concepts related to UGI and ISWM. The MSEs, through their professionalisation and entrepreneurship development (Output 2.1), will serve as additional change agents to upscale the composting scheme.	MUDH, MSEs	No change
Increase in the frequency and intensity of climate variability (extreme events) risks  Mekelle, Dire Dawa and Adama – high	Environmental	          P = 3 I = 5	The project will take into account city/town-specific climatic variability in the selection and choice of UGI interventions: see Annex XII.II for more details. The COMPOST project has considered the conclusions of the NAPA and the Ethiopia Programme of Adaptation to Climate Change (EPACC), which detail how climate risks are likely to result in a decline in agricultural productivity, dwindling water supply and urban waste accumulation. Similarly, the National Policy and Strategy on Disaster Risk Management (2013) discusses how floods, forests and bush fires are likely to increase in scale and intensity due to climate change in the future. As cities/towns will face an increased incidence of flooding, the	Municipal authorities	No change

<p>vulnerability to droughts</p> <p>Bishoftu, Bahir Dar and Hawassa – low vulnerability to droughts</p>		<p>(Risk = high)</p> <p>P = 2</p> <p>I = 2</p> <p>(Risk = low)</p>	<p>COMPOST project will collaborate with the Disaster Risk Management Council (DRM) and DRM coordination structures at regional, zonal and woreda levels to design project interventions to minimise implementation risks from climate change-related hazards.</p> <p>The project will provide training as a part of Output 2.1 to qualified personnel on the nurturing and care of UGI vegetation in peri-urban areas as well as urban areas. Personnel will be trained to recognise climate extremes that may affect newly planted seedlings as well as young trees and shrubs, and what actions to take that will extend the life of UGI vegetation through these climate extremes. These personnel will be able to take their skills into MSEs that provide services for care and nurturing of UGI vegetation.</p> <p>Where appropriate, plant species that are known to have higher resistance to extreme weather events will be used. These include, among others: <i>Lantana Camara</i>, which can resist extreme droughts; <i>Gravillia robusta</i>; and there is experience in Dire Dawa with <i>Acacia</i> species that are drought-resistant.</p> <p>Besides the choice of plant species, several techniques will be deployed that reduce the impacts of extreme weather events, including:</p> <ul style="list-style-type: none"> <li>• Physical conservation of soil and water that are used to conserve moisture levels;</li> <li>• Watershed management that provides a holistic approach to managing water resources;</li> <li>• Mulching (covering the soil with grass to hold moisture)</li> <li>• Area closure to reduce the impacts of anthropogenic activities</li> </ul>		
<p>Challenges in raising local awareness and in changing attitudes to</p>	<p>Operational</p>	<p>Probability – Behavioural change is not possible due to ineffective awareness and training campaigns on the benefits and opportunities associated with the compost market</p>	<p>The communication/stakeholder engagement plan and the information campaigns are planned to garner public buy-in. The awareness campaign will be supported by public incentives and an inter-sectoral communication plan. These efforts will be supported by the harmonisation of regulations and laws concerning ISWM and UGI at the federal and regional levels, as well as the implementation of the ISWM</p>	<p>Regional and municipal authorities, Project Manager and Project</p>	<p>No change</p>

support waste sorting		<p>Impact – Attaining project objectives is constrained, with potential contamination of the compost produced by MSEs.</p> <p>P = 3 I = 3 Risk = 9 (Medium)</p>	Standards that support sorting at source. Importantly, incentives (both financial and non-financial as discussed in Section 3.1.1) will be provided to households to carry out sorting of their waste.	Management Unit	
Illegal fuelwood collection of the reforested areas	Regulatory and Operational	<p>Probability – Lack of local governments’ commitment/capacity to enforce land use</p> <p>Impact – Reforestation efforts are rendered ineffective</p> <p>P = 3 I = 3 Risk = 9 (medium)</p>	<p>The risk of illegal fuelwood collection in reforested areas is real but manageable through the following measures: (1) the forested areas will be managed scientifically to generate renewable biomass that will be made available to local communities for fuelwood. Furthermore, (2) access to the forested areas will be limited through appropriate fencing. Monitoring of the planted forests by the local authority will be carried out on a regular basis as part of the MRV system that will be established under Outcome 3. Also, (3) city and town administrations will be empowered to enforce land use plans, such as by publicising cadastral maps (to be generated with financing in Outcome 1) and city plans, implying better capacity to minimise illegal fuelwood collection in reforested areas or the logging of trees for timber.</p>	Regional governments, MUDH	No change
Displacement and resettlement of illegal settlers from land earmarked for UGI activities within the project boundary	Regulatory and Operational	<p>Impacts</p> <p>Loss of livelihoods and economic opportunities</p> <p>I = 5 P = 3 or 4 (for details please see SESP in <b>Annex F</b>)</p>	Following the application of UNDP’s Social and Environmental Screening Procedure (SESP), presented in <b>Annex F</b> , the COMPOST project has been identified as being a potentially high-risk project because of the possibility of resettlement and displacement of illegal settlers within the project boundary. It has been estimated that up to 3,250 illegal households (or 16,250 persons) may be affected by the implementation of peri-urban reforestation, including on hillsides, lake shores and banks, and riparian corridors (Outputs 4.2 and 4.3). In the absence of any national or regional legislation or standard for the resettlement and displacement of illegal settlers, the COMPOST project has	Regional Administrations/ Municipalities, MUDH, UNDP	No change

			<p>been designed to ensure that the project will not result in ‘forced evictions’ that are prohibited by international law. Under Output 1.5, the project will develop a RAP for illegal settlers within its boundary according to UNDP’s DRS.</p> <p>As far as is practicable, the COMPOST project will provide opportunities for the illegal settlers to restore their livelihoods by participating and deriving economic benefits from the UGI activities that will be carried out under Outputs 4.2 and 4.3. In this case, illegal settlers will be trained or re-skilled to set up MSEs that will carry out UGI activities.</p> <p>For more details, please see the discussion given in <b>Section 3.1.1</b> related to Output 1.5.</p>		
Safety risks to local communities related to the construction and operation of composting plants	Operational	<p>Impacts</p> <p>Physical injuries to members of the local communities</p> <p>P = 2</p> <p>I = 2</p> <p>Risk = 4 (low)</p>	<p>Applicatio of the Social &amp; Environmental Safeguards (<b>Annex F</b>) has revealed that the COMPOST project may pose safety risks to local communities related to the construction and operation of composting plants.</p> <p>It should be noted that the composting plants in each city/town will be decentralised and will be built on previously unoccupied land owned by the local administration or municipality. Hence, the physical infrastructure is expected to be small-scale and liht weight. The decentralised nature of the operation implies that the quantity of waste transported to each site will be relatively small, and therefore, pose little risk to local communities.</p> <p>Although this risk is low, the project has taken steps to ensure that no harm is brought to local communities by the composting plants by putting in place Environmental Management Plans (EMPs) for the construction and operation of the composting plants in order to ensure that local communities are not inconvenienced by the composting activities.</p>	Regional Administrations/ Municipalilites, MSEs	No change

### 4.3 Social and environmental safeguards

105. UNDP’s Social and Environmental Screening Procedure (SESP) has been applied to the COMPOST project. The results are shown in **Annex F**, including an explanation of the different risks that have been identified and the mitigation measures that are proposed to mitigate them. The main results emanating from the SESP, including the risk of contamination of compost, displacement of population and the unwillingness of regional administrations to avail required land for reforestation, have been used to develop the risk management framework discussed in the previous section.
106. The project outputs that may potentially give rise to social and environmental grievances relate to on-the-ground implementation of project activities. **TABLE 6** identifies these outputs and describes the role of various parties in resolving any grievances.

**TABLE 6: Means of dealing with social and environmental grievances during project implementation.**

Project output	Grievance resolution mechanism and role of parties
<p>Output 1.3: Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities.</p> <p>Output 4.1: Composting plants built, equipped and implemented in 6 regional cities and towns.</p> <p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.</p> <p>Output 4.3: Reforestation of 33,309 ha of degraded land in 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.</p>	<p>All social and environmental grievances from individuals or households will be reported to the Local Project Coordinator (LPC) for further action. As far as is practicable, decisions regarding the most appropriate actions to take to remedy any grievance will be made by the Local Committee with the support of the PMU (see <b>FIGURE 6</b>) and the Regional Bureau for Urban Development. Matters of an extraordinary kind will be dealt with by the PSC.</p> <p>There will be two avenues for reporting grievances, namely to the kebele leaders and/or to directly to the Department of Urban Waste and Beautification (or similar) within the city administration. Being a member of the community, the kebele leader is ideally the first point of contact for the communication of grievances related to the implementation of the sorting of waste at the household level. The kebele leader will communicate any such grievances to the Waste and Beautification Department (or similar, depending on appellation in each city administration) through existing monthly meetings / committees that take place at the kebele level. The LPC, who is also the head of the Waste and Beautification Department, will then raise the issues at the level of the Local Committee that can be called up when such matters arise.</p> <p>In the event that the social and environmental grievances cannot be dealt with appropriately by the Local Committee, the LPC will refer the grievance to the PM for consideration and action by the PSC.</p> <p>The roles and responsibilities of the various parties and positions featuring in the organisational structure of the project are discussed in Section 7 and listed in <b>TABLE 4</b>.</p>

Environmental and social grievances will be reported to the GEF in the annual PIR.

#### 4.4 Sustainability and Scale-up

107. As outlined in Section 2 and **Annex L**, the COMPOST project is fully aligned with Ethiopia's sustainable development strategies, including the CRGE Strategy, the next phase of its Growth and Transformation Plan (GTP) as well as its Urban Development and its Micro and Small Enterprises Development Strategy. Besides directly supporting the national policies, strategies and action plans, an innovative aspect of the COMPOST project is to develop a financially viable, and therefore self-sustaining, compost value chain that links ISWM and UGI. Since the SWM and UGI systems currently in place in the cities and towns are not fully financially viable (see **Annex M**), a crucial element of the COMPOST project is to ensure that the market-based compost value chain will be financially self-sustaining. As discussed in Section 4.6, the compost component of the UNDP-implemented, GEF-financed project will have an IRR of 15.45% under the assumptions used in the financial model that is detailed in **Annex O**. The compost market price that needs to be practised to achieve this IRR is 0.6 ETB/kg (US\$ 2.6 cents/kg). This price is only 4.4% of the market price for chemical fertilisers that are currently used in urban agriculture. The liberalisation of the price of chemical fertilisers (i.e. removal of subsidies) has resulted in farmers using only half of the recommended quantity of chemical fertilisers. Against this baseline scenario, a compost price of 0.6 ETB/kg is expected to be competitive with chemical fertilisers. Since the IRR is higher than the cost of capital (Section 4.5 and **Annex O**),<sup>80</sup> the production of compost is considered to be financially sustainable.
108. The project will provide capacity reinforcement for composting production and marketing to MSEs, communities and regional authorities. The project also includes training for TVETS, vocational institutes and updates to relevant university programme curricula (see paragraph 56) to provide a fresh pool of technically-qualified recruits to facilitate sustainability and replication of composting, UGI development and ISWM throughout Ethiopia.
109. The principal driver of sustainability beyond the project lifetime is the establishment of a market 'pull' for compost in UGI (urban agriculture, nurseries, inner-city beautification and peri-urban forestry, among others). In order to maintain the ecological cycle of MSW, municipalities will buy compost for application in their nurseries and for inner-city beautification and peri-urban reforestation. The project will also ensure sustainability in Outcome 2 by establishing a carbon offset market that will be driven by the private sector. Similarly, MSEs will have access to credit or loan facilities through Micro-finance Institutions (MFIs) (Output 2.2) to participate in the ISWM-UGI value chain depicted in **FIGURE 2**. The project will also integrate households in the compost production chain, starting with source-sorting using a combination of public incentives and awareness-raising activities. An awareness campaign and communications strategy will engage civil society actors so that job opportunities and the benefits associated with the supply and demand sides of composting can be effectively publicised. Such an approach will reinforce public buy-in and increase participation in composting opportunities. As discussed in Section 3, a critical issue that the project will focus on is to ensure that the production of compost is of the quality required for application in UGI, especially in urban agriculture. A standard for compost generated from MSW will be developed under Outcome 1, as well as incentivising households to carry out segregation of waste at source in order to minimise contamination of the organic waste.
110. Innovative aspects of the COMPOST project that will support its sustainability include the following:
- Linking the urban greenery and solid waste management sectors by promoting the use of compost in peri-urban forestry and urban agriculture.

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<sup>80</sup> The cost of capital is a mixture of concessional loans and micro-finance with interest rates of 5% and 13% pa, respectively. The 5% interest rate relates to the concessional loan that MUDH has contracted under the ULGDP II and that is made available to the project in the form of co-financing. The micro-finance is provided at a fixed interest rate determined by the Development Bank of Ethiopia, and it will be provided under Output 2.2.

- Developing a holistic and integrated approach to reducing cities’ and towns’ greenhouse gas emissions.
  - Facilitating access to a carbon offsetting scheme to finance urban forest planting.
111. Twinning with other cities to enable Ethiopian local governments to share and garner knowledge on the use of compost, UGI and ISWM to support global low-emission and climate resilient development.
112. The urban NAMA will support scaling-up of composting and UGI activities to other Ethiopian cities and towns through the compilation and dissemination of lessons-learned. Furthermore, Outcome 2 will develop a knowledge management and replication plan for scaling-up composting in other cities and towns, including by detailing sustainable market investment plans. The scaling-up will also capitalise on the results of the technology assessments that are expected under Output 3.3.
113. Awareness campaigns in Outcomes 1 and 4 will provide communication material to explain how source-sorting works effectively to produce high-quality compost. Also, a twinning arrangement in Outcome 1 will enable Urban Local Governments (ULGs) from Ethiopia to work with other cities to share lessons-learned on developing a compost market and integrating UGI/ISWM to enhance mitigation benefits. Similarly, in Outcome 3, lessons-learned on the integrated urban NAMA will be compiled and disseminated. The MRV mechanism to be established to assist NAMA reporting will ensure that baselines are standardised and that targets and milestones are consistently monitored. By working with MUDH, data gathered during the NAMA process will contribute to the ECPI<sup>81</sup> and will be used by the urban observatories. From the grassroots work in Outcome 4, lessons-learned on compost plant construction and the production and use of compost will be gathered and stored in Output 2.6. Other cities and towns will be able to replicate and improve on composting strategies in the future. Similarly, Outcome 2 will develop a plan for cities and towns on how they can establish market outlets for compost and facilitate the implication of MSEs in the compost value chain.

#### 4.5 Financial analysis

114. A model has been built to investigate the conditions under which the production of compost from MSW will be financially viable. The model is customised based on two examples of composting currently being carried out in Bahir Dar (windrow composting) and Dire Dawa (pit composting) by MSEs. Most of the parameters used in the model are derived from the experience of Green Vision (Bahir Dar) using windrow composting to produce compost that is used exclusively in urban agriculture. The model offers the possibility of assessing the financial viability of composting by varying the 13 parameters listed in **TABLE 7**. The model also calculates the number of direct jobs created by composting using the labour coefficients that have been determined for the two baseline projects. The scenario that is discussed here is called the ‘Reference Scenario’, and it is used in the sensitivity analyses discussed in **Annex O** as the reference against which changes in key model parameters are assessed.

**TABLE 7: Adjustable parameters in the financial model for producing compost.**

Price of compost (ETB <sup>82</sup> /kg)	Maintenance cost (as a % of infrastructure cost)	Organic waste to compost conversion factor
Price of carbon (ETB/tCO <sub>2</sub> e)	Wage (ETB/month)	Windrow shed capacity (%)
Density of MSW (kg/m <sup>3</sup> )	Waste transfer price (to MSE carrying out composting) (ETB/kg)	Adjustment to windrow cost (%)
Inflation rate (% per annum)	Compost distribution cost (ETB/kg)	
Exchange rate (US\$ to ETB)	Water tariff (ETB/m <sup>3</sup> )	

<sup>81</sup> Ethiopian City Prosperities Index

<sup>82</sup> US\$ 1 = ETB 21.6.

115. Calculation of costs. The cost of the investment includes construction of windrow composting plants, procurement of waste handling equipment and tools, and either the retrofitting of existing pushcarts or the construction of new pushcarts. It is assumed that there are sufficient pushcarts for the collection of MSW at the beginning of the COMPOST project. The rate at which pushcarts are either retrofitted to carry source-sorted waste or are newly built depends on the quantity of MSW composted. In the model, investments in compost infrastructure, equipment and tools takes place according to the quantity of MSW composted as scheduled in **TABLE 8**. This investment schedule is applied to each of the six cities/towns participating in the project. The production of compost will be preceded or accompanied by several technical assistance activities such as the development of national standards and QAS for compost, setting up and training of MSEs, operationalising sorting of waste at the household levels, and coordination with UGI activities that will make use of compost. Taking the need to sequence these technical assistance activities, and the need to develop sound knowledge management, a pragmatic investment schedule that has a slower ramp up in the first two years has been proposed. The detailed calculation of investment costs, as well as the depreciation and amortisation of investments, is given in **Annex O**.

**TABLE 8: Investment schedule for composting of MSW.**

Year	2016	2017	2018	2019	2020	2021
Investment as a percentage of waste composted (%)	3%	15%	35%	60%	80%	100%
Incremental investment as a percentage of waste composted (%)	3%	12%	20%	25%	20%	20%

116. The costs of investment follow the fraction of MSW that is composted. In the model, the volume of MSW generated in each city and town is indexed to the city/town's annual population growth rate, which is kept constant at its 2015 annual growth rate for the entire analysis period (2015-2025). The calculation of MSW generated makes use of per capita waste generation that has also been assumed to be constant for the entire analysis period. The calculation of city-level waste generation is given in **Annex O**.

117. The model also considers the efficiency of waste collection in each city and town, as well as the efficiency of waste disposed, using parameters that were collected in each city and town. For instance, in 2015 the collection efficiency varied between 75% (Adama, Bishoftu, Bahir Dar, Hawassa) and 85% in Mekelle, while the disposal efficiency ranged from 50% (Adama) to 75% (Mekelle). In order to quantify the organic fraction of MSW, data were collected on the characteristics of MSW (i.e. composition of MSW) in each city and town. The cumulative (for all 6 cities and towns) amount of MSW by type of waste is summarised in **TABLE 9**.

**TABLE 9: Quantity of MSW generated and by type in all 6 target cities and towns.**

Parameter	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Population	1,595,455	1,652,695	1,711,995	1,773,428	1,837,073	1,903,007	1,971,315	2,042,082	2,115,397	2,191,351
Total MSW generated	198,688	205,854	213,279	220,973	228,946	237,207	245,767	254,637	263,828	273,352
MSW collected	156,389	166,676	177,503	188,896	200,881	213,486	223,648	234,266	245,360	256,951
MSW disposed	115,942	128,735	142,670	157,824	174,284	192,138	203,520	215,525	228,185	241,534
fraction organic disposed	86,796	96,268	106,579	117,787	129,955	143,147	151,629	160,574	170,007	179,954
fraction plastic disposed	23,317	25,974	28,873	32,030	35,463	39,192	41,513	43,961	46,542	49,264
fraction other disposed	5,829	6,494	7,218	8,007	8,866	9,798	10,378	10,990	11,636	12,316

118. Applying the investment schedule given in **TABLE 8** to the quantity of organic waste available for composting shown in **TABLE 9** gives the annual investments that are expected between 2016 and 2021 (see **TABLE 10**).

Under the assumptions used in the financial modelling, the total investments to 2021 will cost ETB 23.4 million (US\$ 1.08 million), and a total surface area of 30,380 m<sup>2</sup> will be used for windrow sheds in the six cities and towns.

**TABLE 10: Composting investment costs in ETB.**

Items	2016	2017	2018	2019	2020	2021	Total
Windrow Sheds	360,000	1,620,000	3,120,000	4,500,000	4,500,000	4,560,000	18,660,000
Tools (waste handling)	15,000	67,500	145,000	255,000	332,500	445,000	1,160,000
Pushcarts	29,160	129,600	246,240	359,640	1,279,800	1,451,520	3,495,960
<b>Total</b>	<b>404,953</b>	<b>1,817,100</b>	<b>3,511,240</b>	<b>5,114,640</b>	<b>6,112,300</b>	<b>6,456,520</b>	<b>23,416,753</b>

119. Over the same period of time, the cost of operations and maintenance has been calculated as shown in **TABLE 11**. The two main items of operation are transportation (75%) and training (19%). The training relates to the entire compost value chain, including: collection of segregated waste; building and operation of windrow sheds; handling of organic waste for windrow composting (including occupational health & safety); quality standards; and appropriate training to carry out composting in a scientific manner (i.e. establishing the optimum parameters, such as pH, temperature and humidity, for maximum yield). The cost of transportation weighs heavily in determining the financially viable price for selling compost. The sensitivity analysis section in **Annex O** provides more details. Details about the calculation of operational costs are also given in **Annex O**.

**TABLE 11. Summary of composting operational costs in ETB.**

Items	2016	2017	2018	2019	2020	2021	Total
Labour	11,745	61,857	158,166	299,106	439,263	580,986	1,551,123
Utilities (water)	3,379	18,706	48,238	91,235	133,996	177,419	472,974
Transportation <sup>83</sup>	433,205	2,398,018	6,183,815	11,695,924	17,177,697	22,744,276	60,632,933
Training	469,800	1,879,200	3,132,000	3,915,000	3,132,000	3,132,000	15,660,000
Repair & maintenance	11,675	52,488	100,987	145,789	173,394	180,346	664,679
Miscellaneous	58,680	234,719	391,198	488,997	391,198	391,198	1,955,988
<b>Total</b>	<b>988,483</b>	<b>4,644,987</b>	<b>10,014,403</b>	<b>16,636,051</b>	<b>21,447,548</b>	<b>27,206,224</b>	<b>80,937,697</b>

120. The investment and operational costs for carrying out composting are financed by grant and loan resources and internal revenues from sale of compost to users. An amount of ETB 50.5 M (US\$ 2.34 M) will be provided from the GEF grant, a 24.4 M (US\$ 1.13 M) grant will be provided by UNDP, and a 296.6 M (US\$ 13.73 M) loan and grant will be provided by MUDH and local governments. The internal revenue generated from sales of compost is forecasted to reach ETB 231.6 M (US\$ 10.72 M) over the period 2016 – 2020. The loan has two components: (1) the component from MUDH is at a concessional rate of 5% per annum; and (2) the component for micro-financing for MSEs is at a rate of 13% per annum. The amortisation period is five years. The total interest on capital for the project is forecasted to reach ETB 45.3 M (US\$ 2.10 M).

121. Revenues. Revenue accrues from the sales of compost and the pricing on carbon emission reductions that will be traded through the national voluntary carbon offset scheme that is discussed in Section 3.1.2. The calculations of emission reductions are detailed in Section 3.2 and **Annex Q**. The selling price of 1kg of compost is set at ETB 0.6 (US\$ 2.6 cents) for the forecast period, which is less than one-twentieth the market price of chemical fertiliser. An average price of carbon equal to 64.8 ETB/tCO<sub>2e</sub> (i.e. 3 US\$/tCO<sub>2e</sub>) has been used for the forecast period, and the justifications are given in **Annex O**. In addition to the above-mentioned

<sup>83</sup> It is assumed that transportation takes place within a radius of 10 km from composting sites.

revenue streams, a terminal value of ETB 19.3 M (US\$ 0.89 M) has been allocated in the last year of the investment period. Details are given in **Annex O**.

122. Under these conditions, the financial performance indicators for investing in the composting of MSW are:
- Net Present Value (**NPV**): ETB 1,497,898 (US\$ 69,347) (using a discount rate of 10% as per MOFEC guideline)
  - Internal Rate of Return (**IRR**): 15.45%
  - The composting operations produce a positive cash flow in year 2021 equal to ETB 20,118,854 (US\$ 931,428).
123. In the COMPOST project, the capital is a mixture of concessional loans and micro-finance with interest rates of 5% and 13% pa, respectively. The 5% interest rate relates to the concessional loan that MUDH has contracted under the ULGDP II and that is made available to the project in the form of co-financing. The micro-finance is provided at a fixed interest rate set by the Development Bank of Ethiopia, and it will be provided under Output 2.2. Since the IRR is higher than the cost of capital, the production of compost is considered to be financially sustainable. The financial viability of composting is further revealed by the positive cash flow at the end of the project lifetime, and the positive NPV.
124. The influence of the main model parameters on the financial metrics is discussed in the sensitivity analysis section of **Annex O**.

## 5. PROJECT RESULTS FRAMEWORK

**TABLE 12: Project results framework.**

<b>Intended Outcome as stated in the UNDAF/Country Programme Results and Resources Framework:</b>					
<i>By 2020, the governance systems, use of technologies and practices, and financing mechanisms that promote low carbon climate-resilient economy and society are improved at all levels.</i>					
<b>Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets:</b>					
<i>UNDAF Outcome 2: By 2020 private-sector driven industrial and service sector growth is increasingly inclusive, sustainable, competitive and job-rich.</i>					
<i>UNDAF Outcome 5: By 2020 key Government institutions at federal and regional levels, including cities, are able better to plan, implement and monitor priority climate change mitigation and adaptation actions and sustainable resource management.</i>					
<i>UNDAF Outcome 13: By 2020, national and sub-national institutions apply evidence-based, results-oriented and equity-focused decision-making, policy formulation, programme design, monitoring, evaluation and reporting.</i>					
<b>Applicable Outputs from the 2014 – 2017 UNDP Strategic Plan:</b>					
<i>Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.</i>					
<b>Applicable Output Indicators from the UNDP Strategic Plan Integrated Results and Resources Framework:</b>					
<i>Output 1.3 indicator 1.3.1: Number of new partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystem services, chemicals and waste at national and/or subnational level.</i>					
<i>Output 1.3 indicator 1.3.2: a) Number of additional people benefitting from strengthened livelihoods through solutions for management of natural resources, ecosystems services, chemicals and waste; b) Number of new jobs created through solutions for management of natural resources, ecosystem services, chemicals and waste.</i>					
	<b>Objective and Outcome Indicators</b>	<b>Baseline<sup>84</sup></b>	<b>Mid-term Target</b>	<b>End of Project Target</b>	<b>Assumptions<sup>85</sup></b>
<b>Project Objective:</b> <i>To promote significantly greater use of Integrated Solid Waste Management (ISMW) and Urban Green Infrastructure (UGI) approaches in Ethiopian cities and towns in alignment with the National Growth and Transformation Plan for the urban sector</i>	<i>Direct project CO<sub>2</sub> emission reductions from the range of interventions proposed by the project, kilotonnes CO<sub>2</sub><sup>86</sup></i>	0	50	438 <sup>87</sup>	<i>Continued political commitment to integrate best practices for ISWM and UGI into development planning and implementation.</i>  <i>The successful implementation of the project is premised on the assumptions that: (a) waste sorting is effective and results in good-quality compost</i>

<sup>84</sup> Baseline, mid-term and end of project levels must be expressed in the same neutral unit of analysis as the corresponding indicator.

<sup>85</sup> Risks must be outlined in the Feasibility section of this project document.

<sup>86</sup> GHG reduction measures of the project include diversion of organic waste from landfills, urban forestry and planting of trees for the use of renewable biomass for fuel wood. The calculation of GHG emission reduction emanating from urban forestry is based on 20-year average, while noting that the initial sequestration and fuel wood production will be low.

<sup>87</sup> This would include GHG emission reductions accumulated from avoided methane production and landfills through diversion of MSW to produce compost (132,321 tonnes CO<sub>2e</sub>/yr) and urban forestry and generation of renewable biomass for fuel wood use (306,000 tonnes CO<sub>2e</sub>/yr).

					<p><i>feedstock; (b) the organic feedstock can be composted and is not contaminated; and (c) farmers and municipal governments agree to use the compost.</i></p> <p><i>Project MRV reports are completed on specific project interventions from the 6 cities, including organic waste diversion from landfills, urban forestry and use of renewable biomass for fuel wood.</i></p>
	<i>Cumulative weight of organic waste diverted from landfills for composting, tonnes<sup>88</sup></i>	0	60,100	404,000	<p><i>Project MRV reports are completed on specific project interventions from the 6 cities, including organic waste diversion from landfills.</i></p> <p><i>High level of uptake of organic waste sorting by households.</i></p>
	<i>Number of gender-disaggregated jobs created from the establishment of an enhanced compost value chain<sup>89</sup></i>	0	205 (of which at least 50% for women)	744 (of which at least 50% for women)	<i>Project reports are completed on environmental and social impact analysis of project interventions.</i>
<b>Outcome 1</b> <i>Regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting national policy environment for integrating ISWM and UGI within urban systems</i>	<i>Number of transposed standards (1 SWM and 1 UGI) for use by local and regional governments</i>	0	10 <sup>90</sup>	10	<p><i>Support for transposed standards received at all levels of government (i.e. federal, regional bureaus and municipalities).</i></p> <p><i>Documentation for transposed ISWM and UGI standards for 6 cities and 4 regional governments.</i></p>

<sup>88</sup> As shown in Table O.2 in Annex O, the quantity of organic waste available for composting depends to the collection efficiency and the disposal efficiency that vary between 50% and 91%.

<sup>89</sup> The numbers are direct jobs created in composting activities only. Jobs created have been calculated for each city/town in Table O.8 in **Annex O**. Composting activities are not expected to generate job loss among scavengers on landfills who predominantly rely on dry recyclables.

<sup>90</sup> The target is the number regional governments (the 4 Regional Bureaus by Year 1) and municipalities (the 6 cities by Year 2) that are recipient of the transposed SWM and UGI Standards.

	<i>Number of households source-sorting domestic waste<sup>91</sup></i>	0	<i>45% of households in each target city/town (~163,000 households)</i>	<i>90% of households in each target city/town (~355,000 households)</i>	<i>Local government ordinances define incentives for source-sorting of waste at households.</i>
	<i>Tonnes of organic waste produced according to adopted standards</i>	0	<i>~22,500 tonnes</i>	<i>~45,000 tonnes</i>	<i>Organic compost standards</i>
<b>Outcome 2</b> <i>A market-based system is developed, and participating micro and small enterprises (MSEs) are supported professionally to ensure financial sustainability of compost production and utilisation</i>	<i>Number of established MSEs in the ISWM-UGI value chain</i>	0	6	12 <sup>92</sup>	<i>Proof of the existence of legal MSE business licences within the ISWM-UGI supply chain.<sup>93</sup></i>  <i>ISWM and UGI curricula of TVET institutions and local universities and colleges are adopted.</i>
	<i>Value (US\$) of long-term contracts between composting MSEs and public entities and private companies for the supply of compost and non-organic recycled waste<sup>94</sup></i>	0	<i>US\$ 2.2 million</i>	<i>US\$ 3.6 million</i>	<i>Long-term contracts between composting MSEs and public entities and private companies for the supply of compost and non-organic recycled waste.</i>
	<i>Number of established voluntary carbon offset agreements with private companies to support ISWM and UGI initiatives</i>	0	2	6	<i>Official documentation of voluntary offset scheme Registry that will be managed by MEFCC, and agreements to support ISWM and UGI initiatives.</i>
<b>Outcome 3</b> <i>A NAMA is designed and implemented to catalyse transformation of integrated urban systems to generate large emission reductions</i>	<i>Number of established standardised baselines for calculating emission reductions</i>	0	1	3 <sup>95</sup>	<i>Availability of reliable and accurate data.</i> <i>Documentation of the 3 established standardised baselines and MRV mechanisms.</i>

<sup>91</sup> The targets are set in equivalence of % households that will carry out source-sorting, and will need to be converted into absolute numbers based on the demographic statistics produced by the municipalities. The targets are set in accordance with the investment plan for composting given in Table 12 of the Project Document and the collection efficiency that are expected to be achieved at the mid-term and end of the project.

<sup>92</sup> This assumes 2 MSEs per city involved either in composting or recycling of dry waste streams or UGI activities (e.g. tree planting and forest management).

<sup>93</sup> To be established as a business, these MSEs will have had access to technical and financing support (credit lines and loans) from the project as well as from micro-finance institutions.

<sup>94</sup> The value is calculated as the product of quantity of compost produced and the market price for compost used in the financial analysis given in Section 4.5 and Annex O of the Project Document. It is assumed that long-term contracts of 3 years will be sought. The mid-term value preempts the further scaling up composting activities, and is therefore more than half of the end of project value.

<sup>95</sup> This will include the establishment of the following standardised baselines by the end of Year 3: (i) compost production using the organic fraction of landfill waste; (ii) urban and peri-urban reforestation of degraded land; and (iii) displacement of non-renewable fuel wood with renewable biomass generated by managed forests.

	<i>Gender-disaggregated population covered by a registered UNFCCC NAMA for national ISWM/UGI initiatives<sup>96</sup></i>	0	0	<i>Total population of the 6 cities/towns in 2021 (approximately 1.97 million)<sup>97</sup></i>	<i>NAMA registration is documented.  There are local experts with sufficient expertise and understanding of concepts to develop the NAMA.</i>
<b>Outcome 4</b> <i>Operational urban systems that integrate ISWM and UGI with quantified GHG emission reductions within the NAMA framework</i>	<i>Capacity (tonnes of compost produced per year) of operational composting plants<sup>98</sup></i>	0	22,500 tonnes	45,000 tonnes	<i>Physical verification of operational plants.</i>
	<i>Area (ha) of degraded sites transformed into green space<sup>99</sup></i>	0	1	4 <sup>100</sup>	<i>Physical verification of green space transformed.</i>
	<i>Number of hectares of reforested degraded land supported by compost-grown seedlings produced by nurseries</i>	0	15,500	33,309	<i>Reports on peri-urban reforestation and firewood plantation programmes in each of the 6 cities.</i>

<sup>96</sup> This indicator will be measured as the male and female population of each of the 6 cities.

<sup>97</sup> This NAMA will initially cover six regional cities but will have potential for scale-up within Ethiopia. It is envisaged that this scale-up will be facilitated with GCF support.

<sup>98</sup> Composting plants will be modular and their capacities will be scaled up in proportion of compost produced.

<sup>99</sup> Including rehabilitation of open waste dumps, open spaces and riparian corridors.

<sup>100</sup> Assuming rehabilitation of the open waste dump located in Bishoftu into green space.

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## 6. MONITORING AND EVALUATION (M&E) PLAN

125. Project-level monitoring and evaluation will be undertaken in compliance with standard UNDP requirements as outlined in the [UNDP POPP](#) and [UNDP Evaluation Policy](#). Though these UNDP requirements are not detailed in this section of the project document, the UNDP Country Office will ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. The additional and mandatory GEF-specific M&E requirements as outlined in this section will be undertaken in accordance with the [GEF M&E policy](#) and GEF guidance materials. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management, and the exact role of project target groups and other stakeholders in project M&E activities, will be finalised during the Inception Workshop and will be detailed in the Inception Report.
126. **Oversight and monitoring responsibilities:** The primary responsibility for day-to-day project implementation and regular monitoring rests with the Project Manager. The Project Manager will develop annual work plans based on the multi-year work plan included in the annexes, including annual targets at the output level to ensure the efficient implementation of the project. The Project Manager will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for reporting (i.e. GEF PIR), and reporting to the Project steering Committee (PSC) at least once a year on project progress. The Project Manager will inform the PSC and the UNDP Country Office of any delays or difficulties as they arise during implementation, including the implementation of the M&E plan, so that the appropriate support and corrective measures can be adopted. The Project Manager will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results.
127. The UNDP Country Office will support the Project Manager as needed, including through annual supervision missions. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; and updating the UNDP gender marker on an annual basis based on progress reported in the GEF PIR and UNDP ROAR reporting. Any quality concerns flagged by the process must be addressed by project management. Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Unit as needed. The project target groups and stakeholders, including the GEF Operational Focal Point, will be involved as much as possible in project-level M&E.
128. **Audit Clause:** The project will be audited according to UNDP Financial Regulations and Rules, and applicable audit policies on NIM-implemented projects.

### 6.1 Additional GEF monitoring and reporting requirements

129. **Inception Workshop and Report:** A project inception workshop will be held after the project document has been signed by all relevant parties to: a) re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation; b) discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms; c) review the results framework and discuss reporting, monitoring and evaluation roles and responsibilities and finalise the M&E plan; d) review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; e) plan and schedule PSC meetings and finalise the first year annual work plan. The Project Manager will prepare the inception report no later than one month after the inception workshop. The final inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Advisor, and will be approved by the PSC.

130. GEF Project Implementation Report (PIR): The Project Manager, the UNDP Country Office and the UNDP-GEF Regional Technical Advisor will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Manager will ensure that the indicators included in the project results framework are monitored annually well in advance of the PIR submission deadline and are reported on accordingly in the PIR. The PIR that is submitted to the GEF each year must also be submitted in English and shared with the PSC. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR. The project's terminal 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 PSC during an end-of-project review meeting to discuss lessons-learned and opportunities for scaling-up.
131. GEF Focal Area Tracking Tools: In line with its objective and the corresponding GEF Focal Area (Climate Change Mitigation), this project will prepare the following GEF Tracking Tool: Climate Change Mitigation Tracking Tool. The baseline/CEO Endorsement GEF Focal Area Tracking Tool – submitted in Annex to this project document – will be updated by the Project Manager/Team and shared with the mid-term review consultants and terminal evaluation consultants before the required review/evaluation missions take place. The updated GEF Tracking Tool will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.
132. Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the final MTR report will be submitted to the GEF in the same year as the third PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the final MTR report will follow the standard templates and guidance available on the [UNDP Evaluation Resource Center \(ERC\)](#). Additional quality assurance support is available from the UNDP-GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Advisor, and approved by the PSC.
133. Terminal Evaluation (TE): An independent terminal evaluation (TE) will take place before operational closure of the project. The Project Manager will remain on contract until the TE report and management response have been finalised. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance available on the [UNDP Evaluation Resource Center](#). Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Advisor, and will be approved by the PSC. The TE report will be publically available in English on the UNDP ERC.
134. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP Independent Evaluation Office will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF Independent Evaluation Office along with the project terminal evaluation report.
135. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office and/or the GEF Independent Evaluation Office.

**GEF M&E Requirements and M&E Budget:**

**TABLE 13: GEF M&E requirements and M&E budget.**

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>101</sup> (US\$)		Time frame
		GEF grant	Co-financing	
<b>Inception Workshop</b>	UNDP Country Office	US\$ 6,000	None	Within two months of project document signature
<b>Inception Report</b>	Project Manager	None	None	Within two weeks of inception workshop
<b>Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP</b>	UNDP Country Office	None	None	Quarterly, annually
<b>Monitoring of indicators in project results framework</b>	Project Manager and Administrative Assistant	To be carried out as part of the Annual Work Plan's preparation.	None	Annually
<b>GEF Project Implementation Report (PIR)</b>	Project Manager and UNDP Country Office and UNDP-GEF team	None	None	Annually
<b>NIM Audit as per UNDP audit policies</b>	UNDP Country Office	Per year: US\$ 3,500 (i.e. a total of US\$ 17,500)	None	Annually or other frequency as per UNDP Audit policies
<b>Supervision missions</b>	UNDP Country Office	None <sup>102</sup>	US\$ 10,000 (i.e. total of US\$ 50,000)	Annually
<b>Oversight missions</b>	UNDP-GEF team	None <sup>102</sup>	US\$ 10,000 (i.e. total of US\$ 50,000)	Troubleshooting as needed (assumed annually)
<b>Knowledge management (spread around the four outcomes as explained in the project approach – Section II)</b>	Project Manager supported by the Administrative Assistant	To be carried out as part of the Annual Work Plan's preparation.	None	On-going
<b>GEF Secretariat learning missions/site visits</b>	Project Manager and UNDP-GEF team	None	None	To be determined
<b>Mid-term GEF Tracking Tool to be updated</b>	Project Manager and External Consultants	To be completed as part of the MTR	None	Before mid-term review mission takes place
<b>Independent Mid-term Review (MTR)</b>	UNDP Country Office and Project team; UNDP-GEF team and External Consultants	US\$ 40,000	None	Between 2 <sup>nd</sup> and 3 <sup>rd</sup> PIR.
<b>Final GEF Tracking Tool to be updated</b>	Project Manager and External Consultants	To be completed as part of the TE	None	Before terminal evaluation mission takes place
<b>Independent Terminal Evaluation (TE) included in UNDP evaluation plan</b>	UNDP Country Office and Project team and UNDP-GEF team	US\$ 40,000	None	At least three months before operational closure
<b>Monitoring and evaluation of Resettlement Action Plans in 6 cities/towns according to ESMP</b>	UNDP Country Office and Project team and UNDP-GEF team	None	US\$ 20,000	Annually

<sup>101</sup> Excluding project team staff time and UNDP staff time and travel expenses.

<sup>102</sup> The costs of UNDP Country Office and UNDP-GEF's participation and time are charged to the GEF Agency Fee.

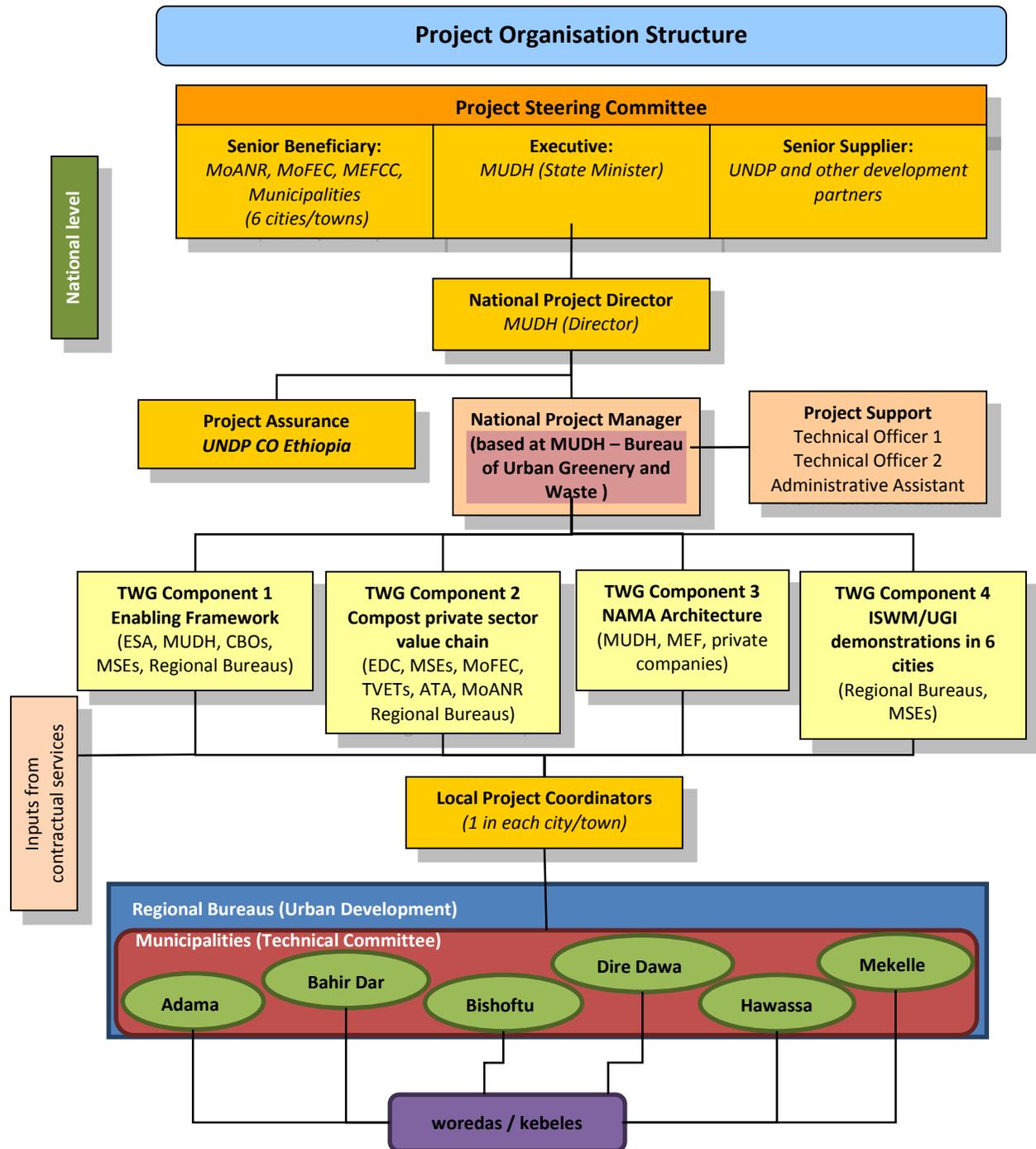
GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>101</sup> (US\$)		Time frame
		GEF grant	Co-financing	
			(i.e. total of US\$ 100,000)	
<b>TOTAL indicative COST</b> Excluding project team staff time, and UNDP staff and travel expenses		US\$ 103,500	US\$ 200,000	

## 7. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

### 7.1 Roles and responsibilities of the project's governance mechanism

136. The project will be implemented following UNDP's national implementation modality (NIM), according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the Government of Ethiopia, and the Country Programme Action Plan (CPAP). The **Implementing Partner** for this project is the Ministry of Urban Development and Housing (MUDH). The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources.
137. The project organisation structure is shown in **FIGURE 6**.
138. The **Project Steering Committee** is responsible for making by consensus, management decisions when guidance is required by the Project Manager, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Steering Committee decisions should be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Steering Committee, the final decision shall rest with the UNDP Programme Manager. The terms of reference for the Project Steering Committee are contained in **Annex E**. The Project Steering Committee is comprised of the representatives of the following institutions: the PSC will be chaired by the State Minister (or delegate thereof) of MUDH. The PSC will comprise the Ministry of Environment, Forest and Climate Change, the Ministry of Finance and Economic Cooperation, the Ministry of Agriculture and Natural Resources, selected representatives from Regional Bureaus, one local project coordinator from each city/town, a representative of the private sector (to be determined), and a representative of MSEs, as well as the Project Manager. If required, representatives of the project stakeholders such as AfD and WB, can be invited to the PSC meetings at the discretion of the PSC. UNDP will participate as the GEF Implementing Agency. Other members can be invited at the decision of the PSC on an as-needed basis, but taking due regard that the PSC remains sufficiently lean to be operationally effective. The final list of PSC members will be completed at the outset of project operations and presented in the Inception Report by taking into account the envisaged role of different parties in the PSC. The Project Manager will participate as a non-voting member in the PSC meetings and will also be responsible for compiling a summary report of the discussions and conclusions of each meeting.
139. The **Project Manager** will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board. The Project Manager function will end when the final project terminal evaluation report, and other documentation required by the GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).

140. Since the PSC and the PMU will be based at the federal level, and while several outputs and activities, including all investments in the COMPOST project, will take place at the regional level, the organisational structure shown in **FIGURE 6** makes use of **Local Project Coordinators** (LPCs) to make the liaison between the city administrations and the PMU/PSC. Each city/town will designate an LPC based on the terms of reference given in **Annex E**, and the position will be part of the in-kind contribution provided by each city/town. The LPC will have oversight over the implementation of all elements of the COMPOST project at the city/town level. He/She will chair the Technical Committee at the city/town level, and will represent the city/town on the PSC.
141. The **project assurance** role will be provided by the Energy and Low Carbon Development Analyst, UNDP CO.



**FIGURE 6: Project organisation structure.**

142. Governance role for project target groups. The composition of the PSC has been determined so that all target groups are represented in the highest governance structure of the project. While recognising that not all interested target audience can be represented on the PSC, the project makes space for a larger number of individuals from target groups to participate in the project implementation through the four technical working groups (TWGs) that will be established for each component of the project. The TWGs will be set up to review the operational policies and progress on project outputs, provide project assurance, and provides

regular reports to the PSC. In this capacity, the TWGs will support the PSC in monitoring functions and delivery of project outputs, ensuring that the project is on-track towards achieving the overall outcomes. AS shown in **FIGURE 6**, different target groups are represented in TWGs depending on their involvement in the project. Also, the TWGs (and PSC) will be constituted from the cohort of stakeholders listed in **TABLE 4 Error! Reference source not found.** (see Section 3.3.1). Additional specific responsibilities of the TWGs will include, but are not limited to, ensuring: beneficiary needs and expectations are being met or managed; risks are being controlled; the project remains viable; internal and external communications are working; quality management procedures are properly followed; and that the PSC decisions are followed and revisions are managed in line with procedures laid-down in the project implementation manual.

143. Further, a Technical Committee will be established in each city or town to oversee and coordinate local activities. The Technical Committee will be comprised of MSEs involved in SWM, composting and UGI, as well as selected representatives from woredas/kebeles.

## **7.2 UNDP Direct Project Services as requested by Government**

144. UNDP will maintain the oversight and management of the overall project budget. It will be responsible for monitoring project implementation, timely reporting of the progress to the UNDP Regional Service Centre in Addis Ababa and the GEF, as well as organising mandatory and possible complementary reviews, financial audits and evaluations on an as-needed basis. It will also support the implementing partner in the procurement of the required expert services and other project inputs and administer the required contracts. Furthermore, it will support the coordination and networking with other related initiatives and institutions in the country. A Letter of Agreement (**Annex R**) describes all additional services required of UNDP beyond its role in oversight between the IP and UNDP. The direct project costs requested of UNDP are also detailed in the Total Budget Work Plan.

## **7.3 Agreement on intellectual property rights and use of logo on the project's deliverables**

145. In order to accord proper acknowledgement to the GEF for providing 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.

## **7.4 Project management**

146. A Project Management Unit (PMU) under the overall guidance of the National Project Director operating on behalf of the Project Steering Committee will carry out the day-to-day management of the project. The PMU will be established within MUDH and will coordinate its work with the PSC. The Project Manager will report to UNDP, the implementing partner and the PSC. The PMU will be supported by two Technical Officers and an Administrative Assistant. The Terms of Reference of the key project personnel are presented in **Annex E**. The project personnel will be selected on a competitive basis in accordance with the relevant UNDP rules and procedures and in consultation with the UNDP-GEF Regional Technical Advisor.
147. The project manager will be supported by international and national experts taking the lead in the implementation of specific technical assistance components of the project. Contacts with experts and institutions in other countries that have already gained experience in developing and implementing renewable energy policies and financial support mechanisms are also to be established.
148. At the regional level, each city/town will designate a Local Project Coordinator who will also represent that city/town on the Project Steering Committee. Depending on the particular output of the project, activities will be implemented at different levels: for instance, starting from the national (or federal) level for regulatory reforms, to the municipalities for development of cadastral maps and composting, to woredas/kebeles for source-sorting of waste.

149. For successfully reaching the objective and outcomes of the project, it is essential that the progress of different project components be closely monitored, both by the key local stakeholders and authorities as well as by the project’s international experts, starting with the finalisation of the detailed, component-specific work plans and implementation arrangements and continuing through the project’s implementation phase. The purpose of this monitoring is to facilitate early identification of possible risks to successful completion of the project together with adaptive management and early corrective action, when needed.

## 8. FINANCIAL PLANNING AND MANAGEMENT

150. The total cost of the project is *US\$ 53,780,011*. This is financed through a GEF grant of *US\$ 6,667,123*<sup>103</sup>, *US\$ 3,704,000* in cash co-financing to be administered by UNDP and *US\$ 43,408,888* in additional co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP’s bank account only.
151. Co-financing. The planned co-financing will be used as shown in **TABLE 14. Annex J** shows the letters of co-financing. The actual realisation of project co-financing will be monitored during the mid-term review and terminal evaluation process, and will be reported to the GEF.

**TABLE 14: Co-financing and risk mitigation measures.**

Co-financing source	Co-financing type	Co-financing amount	Planned Outputs	Risks	Risk Mitigation Measures
Recipient Government - National	In-kind	7,628,164	<p><u>Output 1.1:</u> Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.</p> <p><u>Output 1.4:</u> An adopted national standard for organic compost with quality assurance systems (QAS) is in place at the regional (sub-national) level.</p> <p><u>Output 2.2:</u> An established financing mechanism to support the establishment of new MSEs and to support the skills and technological enhancement of existing MSEs in the ISWM-UGI value chain.</p> <p><u>Output 2.6:</u> An established voluntary carbon offset scheme to support urban and peri-urban reforestation.</p> <p><u>Output 3.1:</u> Established standardised UGI and ISWM baselines for calculating emission reductions.</p> <p><u>Output 3.2:</u> Developed MRV mechanisms for each of the 3 elements in Output 3.1.</p>	Low level of cooperation between institutions at national and local levels	The project has developed an effective stakeholder’s engagement strategy to ensure broad buy-in at all levels (federal, regional and local) that is expected to support project success during implementation. Project results will be monitored by the PSC. The Project Manager will be responsible for implementing the project stakeholder management strategy and,

<sup>103</sup> This grant excludes the GEF Agency Fee of *US\$ 633,377*.

			Output 3.3: Developed comprehensive technology baselines and prioritisation of technology options for ISWM and UGI.		where relevant, will escalate issues and risks to the PSC to mitigate adverse impacts.
Recipient Government - National	Grant	15,810,000	Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented – initially covering 6 regional cities and towns but with the potential for scale-up within Ethiopia.	Weak reporting and information exchange mechanism	The Project Manager will ensure the implementation, as well as the effectiveness, of the communication management strategy for the project and parallel interventions for ISWM and UGI interventions.
Recipient Government - Regional	In-kind	7,523,426	Output 1.2. Tools and protocols for the enforcement of legal ISMW/UGI jurisdictions and the adoption of best practices for sustainable land management regarding urban greenery, waste management and IUWM. Output 1.4: An adopted national standard for organic compost with quality assurance systems (QAS) is in place at the regional (sub-national) level. Output 2.1: A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance the occupational health and safety conditions of Micro & Small Enterprises (MSEs) – especially in SWM – and to enhance the entrepreneurship skills of all MSEs. Output 2.3: Market outlets for compost generated by the municipal composting plants through long-term contracts	Low implementation capacity at regional level	The capacity development interventions of the COMPOST project and ULGDP II will bridge identified capacity implementation gap at regional level.

			<p>with public (municipalities, city/town administrations), and private (landscapers, nurseries, farmers) institutions so as to support urban agriculture and peri-urban forestry on a large-scale.</p> <p><u>Output 2.4:</u> Market outlets for the non-organic recycled waste processed by the municipal sorting plant through long-term contracts with recycling firms.</p> <p><u>Output 2.5:</u> Integrated SWM and UGI Standards in curriculum in education.</p> <p><u>Output 4.1:</u> Composting plants built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency’s blending facilities to progressively complement blended chemical fertilisers with compost.</p>		
Recipient Government - Regional	Grant	9,900,279	<p><u>Output 1.3:</u> Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities.</p> <p><u>Output 1.5:</u> A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard.</p> <p><u>Output 1.6:</u> A twinning programme with other cities and towns experienced in ISWM and UGI, and with institutions developing and implementing standards, to inspire and build capacities.</p> <p><u>Output 4.2:</u> Rehabilitated and cleaned open green spaces and riparian corridors.</p> <p><u>Output 4.3:</u> Reforestation of 33,309 ha of degraded land in 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.</p>	Weak institutional coordination at regional level	The project coordinator at regional level will be instrumental in resolving weak institutional coordination at regional level and may escalate significant weaknesses to the national Project Manager.

Civic Society , Multilateral organizations	In-kind	2,347,019	<u>Output 1.6:</u> A twinning programme with other cities and towns experienced in ISWM and UGI, and with institutions developing and implementing standards, to inspire and build capacities. <u>Output 2.1:</u> A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance the occupational health and safety conditions of Micro & Small Enterprises (MSEs) – especially in SWM – and to enhance the entrepreneurship skills of all MSEs.	Weak commitment and engagement	The Project Manager will assess the effectiveness of the stakeholder management strategy and will mobilise civil society in support of the project objectives.
Civic Society , Multilateral organizations	Grant	3,704,000	<u>Output 1.5:</u> A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard.	De-prioritizations of some of ISW or UGI interventions	The Project Manager will work with the responsible development partner organisations to look for mutual solutions to mitigate the impact on project results.
Private Sector	In-kind	200,000	<u>Output 4.1:</u> Composting plants built, equipped and implemented in 6 regional cities and towns and linked with the Agricultural Transformation Agency’s blending facilities to progressively complement blended chemical fertilisers with compost. <u>Output 4.3:</u> Reforestation of 33,309 ha of degraded land in 6 cities and towns, including support for existing nurseries to produce compost-grown seedlings.	Weak commitment and engagement	The Project Manager will assess the effectiveness of the stakeholder management strategy and will mobilise MDLGS in support of the project objectives.

152. Budget Revision and Tolerance. As per the UNDP requirements outlined in the UNDP POPP, the Project Steering Committee can 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 PSC. Should the following deviations occur, the Project Manager and UNDP Country Office will seek the approval of the UNDP-GEF team as these are

considered major amendments by 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.

153. Project Closure. Project closure will be conducted as per the UNDP requirements outlined in the UNDP POPP (see <https://info.undp.org/global/popp/ppm/Pages/Closing-a-Project.aspx>). On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.
154. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed including the final clearance of the Terminal Evaluation Report that must be available in English, and after the final Project Steering Committee meeting. The Implementing Partner, through a Project Steering Committee decision, will notify the UNDP Country Office when the operational closure has been completed. The relevant parties will then agree on the disposal of any equipment that is still the property of UNDP.
155. Financial completion: 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; and d) UNDP and the implementing partner have certified a final Combined Delivery Report (which serves as final budget revision).
156. The project will be financially completed within 12 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 is financially closed in Atlas by the Country Office.
157. Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

## 9. TOTAL BUDGET AND WORK PLAN

Total Budget and Work Plan			
Atlas Proposal or Award ID:	00096338	Atlas Primary Output Project ID:	00100275
Atlas Proposal or Award Title:	Urban NAMA: COMPOST		
Atlas Business Unit	ETH10		
Atlas Primary Output Project Title	Urban NAMA: COMPOST		
UNDP-GEF PIMS No.	5541		
Implementing Partner	Ministry of Urban Development and Housing		

GEF Outcome/Atlas Activity	Responsible Party/Implementing Agent	Fund ID	Don or Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (US\$)	Amount Year 2 (US\$)	Amount Year 3 (US\$)	Amount Year 4 (US\$)	Amount Year 5 (US\$)	Total (US\$)	Budget Note	
OUTCOME 1: The regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting the national policy environment for integrating ISWM and UGI within urban systems.	MUDH	62000	GEF	71200	International Consultants	57,775	45,525	0	0	0	103,300	1	
				71300	Local Consultants	83,680	50,880	26,280	8,280	8,280	177,400	2	
				71400	Service contract	4,800	4,800	4,800	4,800	4,800	24,000	3	
				72200	Equipment and Furniture	67,080	67,080	67,080	67,080	67,080	335,400	4	
				72500	Office supplies	49,420	6,120	5,520	5,520	5,520	72,100	5	
				71600	Travel	43,190	36,310	0	0	0	79,500	6	
				74200	Printing and Publication Costs	2,100	5,500	0	0	0	7,600	7	
				75700	Workshops and Meetings	35,260	32,160	2,760	17,760	2,760	90,700	8	
		<b>sub-total GEF</b>	<b>343,305</b>	<b>248,375</b>	<b>106,440</b>	<b>103,440</b>	<b>88,440</b>	<b>890,000</b>					
	MUDH	4000	UNDP										
				71200	International Consultants	50,000	0	0	0	0	50,000	9	
				71300	Local Consultants	24,000	10,000	0	0	0	34,000	10	
				71600	Travel	7,000	3,000	0	0	0	10,000	11	
				75700	Workshops and Meetings	4,000	2,000	0	0	0	6,000	12	
				<b>sub-total UNDP</b>	<b>85,000</b>	<b>15,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>100,000</b>			
	<b>sub-total outcome 1</b>	<b>428,305</b>	<b>263,375</b>	<b>106,440</b>	<b>103,440</b>	<b>88,440</b>	<b>990,000</b>						
MUDH	62000	GEF	71200	International Consultants	165,879	56,245	12,860	0	0	234,984	13		

OUTCOME 2: A market-based system is developed and participating Micro & Small Enterprises (MSEs) are supported professionally to ensure financial sustainability of compost production and utilisation.				71300	Local Consultants	83,560	56,560	35,290	25,520	25,520	226,450	14
				71400	Service contract	4,800	4,800	4,800	4,800	4,800	24,000	15
				71600	Travel	22,409	16,615	9,780	5,820	5,820	60,444	16
				72500	Office supplies	21,850	0	0	0	0	21,850	17
				74200	Printing and Publication Costs	13,850	13,850	13,850	13,850	13,850	69,250	18
				75700	Workshops and Meetings	20,030	20,030	14,280	14,280	14,280	82,900	19
					<b>sub-total GEF</b>	<b>332,378</b>	<b>168,100</b>	<b>90,860</b>	<b>64,270</b>	<b>64,270</b>	<b>719,878</b>	
				71300	Local Consultants	13,200	13,200	21,395	16,995	10,710	75,500	20
				71600	Travel	3,300	3,300	4,235	3,135	1,530	15,500	21
				75700	Workshops and Meetings	0	0	2,970	2,970	3,060	9,000	22
					<b>sub-total UNDP</b>	<b>16,500</b>	<b>16,500</b>	<b>28,600</b>	<b>23,100</b>	<b>15,300</b>	<b>100,000</b>	
					<b>sub-total outcome 2</b>	<b>348,878</b>	<b>184,600</b>	<b>119,460</b>	<b>87,370</b>	<b>79,570</b>	<b>819,878</b>	
OUTCOME 3: A coherent climate mitigation framework is established for the development of a NAMA to catalyse the transformational capacity of integrated urban systems to generate large emission reductions.	MUDH	62000	GEF	71200	International Consultants	172,982	105,786	28,875	75,250	56,000	438,893	23
				71300	Local Consultants	49,423	45,349	17,325	47,550	36,000	195,648	24
				71600	Travel	9,885	9,420	3,675	7,450	5,000	35,430	25
				74200	Printing and Publication Costs	0	3,295	0	1,750	2,000	7,045	26
				75700	Workshops and Meetings	0	18,224	1,750	3,500	4,000	27,474	27
					<b>sub-total GEF</b>	<b>232,290</b>	<b>182,074</b>	<b>51,625</b>	<b>135,500</b>	<b>103,000</b>	<b>704,489</b>	
	MUDH	4000	UNDP	71200	International Consultants		10,000				10,000	28
				71300	Local Consultants	0	20,000	10,000	5,000	0	35,000	29
				75700	Workshops and Meetings	0	2,500	2,500	0	0	5,000	30
					<b>sub-total UNDP</b>	<b>0</b>	<b>32,500</b>	<b>12,500</b>	<b>5,000</b>	<b>0</b>	<b>50,000</b>	
	<b>sub-total outcome 3</b>	<b>232,290</b>	<b>207,074</b>	<b>67,625</b>	<b>144,500</b>	<b>103,000</b>	<b>754,489</b>					
OUTCOME 4: Proof-of-concept urban systems integrating ISWM and UGI are operationalised with quantified GHG	MUDH	62000	GEF	71200	International Consultants	81,665	81,665	74,900	40,882	27,255	306,367	31
				71300	Local Consultants	72,474	77,612	82,751	83,799	86,891	403,527	32
				71600	Travel	18,976	20,518	22,059	21,622	22,174	105,349	33
				72200	Equipment and Furniture	518,826	698,954	734,408	648,822	619,021	3,220,031	34

emission reductions in a NAMA framework.					<b>sub-total GEF</b>	<b>691,941</b>	<b>878,749</b>	<b>914,118</b>	<b>795,125</b>	<b>755,341</b>	<b>4,035,274</b>	
					<b>sub-total outcome 4</b>	<b>691,941</b>	<b>878,749</b>	<b>914,118</b>	<b>795,125</b>	<b>755,341</b>	<b>4,035,274</b>	
PROJECT MANAGEMENT UNIT	MUDH	62000	GEF	71400	Service Contract	27,600	27,600	27,600	27,600	27,600	138,000	35
				71200	International Consultants			30,800		31,600	62,400	36
				75700	Workshops and Meetings	6,000					6,000	37
				71600	Travel			8,400		9,200	17,600	38
				74598	Direct Project Costs	15,196	15,196	15,196	15,196	15,198	75,982	39
				74100	Audit	3,500	3,500	3,500	3,500	3,500	17,500	40
					<b>Total Management GEF</b>	<b>52,296</b>	<b>46,296</b>	<b>85,496</b>	<b>46,296</b>	<b>87,098</b>	<b>317,482</b>	
<b>PROJECT TOTAL (GEF)</b>						<b>1,652,210</b>	<b>1,523,594</b>	<b>1,248,539</b>	<b>1,144,631</b>	<b>1,098,149</b>	<b>6,667,123</b>	
<b>PROJECT TOTAL (UNDP)</b>						<b>101,500</b>	<b>64,000</b>	<b>41,100</b>	<b>28,100</b>	<b>15,300</b>	<b>250,000</b>	
<b>PROJECT TOTAL (GEF + UNDP)</b>						<b>1,753,710</b>	<b>1,587,594</b>	<b>1,289,639</b>	<b>1,172,731</b>	<b>1,113,449</b>	<b>6,917,123</b>	

**Budget notes:**

<b>OUTCOME 1</b>	
1	<p>GEF funding is not used to provide technical assistance related to Output 1.5 (development of RAPs), which is covered exclusively using UNDP funding (budget notes 9 to 12).</p> <p>Only Outputs 1.1 to 1.3 involve International Consultants. Since these outputs have been frontloaded, technical assistance is required in Year 1 and Year 2 only. The allocation of the total budget between the three outputs is: Output 1.1 – US\$ 24,500 (75% in Year 1 and 25% in Year 2); Output 1.2 – US\$ 51,200 (50% in each year); Output 1.3 – US\$ 27,600 (50% in each year). The International Consultants are expected to train the local consultants in all technical areas related to these outputs. One of the main outcomes of the COMPOST project is the transfer of maximum knowhow and expertise to local stakeholders in all areas through a learning-by-doing approach. The capacity building of local stakeholders is a cross-cutting issue that permeates all the project activities.</p>
2	<p>In contrast to the limited use of International Consultants, local consultants will be used to accompany project stakeholders over the entire project lifetime. The spread of the total budget between Outputs 1.1 to 1.6 (excluding Output 1.5) is: Output 1.1: US\$ 28,000 (Year 1: 40%; Year 2&amp;3: 30%); Output 1.2: US\$ 48,000 (Year 1&amp;2: 40%; Year 3: 20%); Output 1.3: US\$ 41,400 (20% per year); Output 1.4: US\$ 50,000 (Year 1: 70%; Year 2: 30%); Output 1.6: US\$ 10,000 (Year 1 only).</p>
3	<p>Since the profiles of the TOs are technical in nature (see Annex E), fifty percent (i.e. US\$ 24,000) of their salaries are covered under Outcome 1. The remaining 50% is covered under Outcome 2 at budget note 15.</p>
4	<p>GEF funding is used to support sorting of household waste through the distribution of sorting bins and bin linings in the 6 target cities and towns as specified by the National Urban Solid Waste Management Standards. The budget is spread evenly over the project lifetime.</p>
5	<p>Office supplies are used to cover the costs of computers (X5 @ US\$ 2,500) and printers (X4 @ US\$ 3,000). This budget line should be read in conjunction with budget line at budget note 17. Together, there will be a total of 10 computers out of which one will go to each of the six Local Project Coordinators and the remaining 4 to the staff of the PMU. Provision is also made for each City Administration / Municipality to have one printer (i.e. 6 in total), with the remaining one allocated for the PMU. An annual amount of US\$ 5,520 has been allocated for covering the costs of replacing printer cartridges, any repair work for printers and computers after the expiry of warranties, and office stationery. In addition, an amount of US\$ 2,000 is allocated as office supplies for Output 1.4 for supporting the ESA to develop Standards for compost in Years 1 and 2.</p>
6	<p>All travels covered by GEF funds are used in Years 1 and 2. The largest share (US\$ 60,000) is allocated to Output 1.6 under which study tours will be organized. This amount will also be used to cover all administrative expenses related to the setting up of twinning programmes. The remaining amount of US\$ 19,500 will be used to cover the travel expenses of International and Local Consultants.</p>
7	<p>Since the outputs of Outcome 1 have been front loaded in Years 1 and 2 in order to provide the enabling environment for investments in composting and UGI activities to take place, all costs related to printing and publication of regional SWM Standards and guidelines, brochures about the compost project and Standards for compost will be completed by Year 2. This is the reason why ~72% of the total costs (related mainly to publication cost) are allocated in Year 2.</p>
8	<p>The successful implementation of the COMPOST project rests on the effective coordination of stakeholders at three levels: federal, regional (Bureaus) and local (City Administration and Municipalities). Since most the work is completed in Years 1 and 2, ~74% of all the expenses for workshops and meetings are used in Years 1 and 2. A dedicated budget of US\$ 40,000 (US\$ 28,000 in Year 1; US\$ 12,000 in Year 2) is allocated for Output 1.4 in Year 1 due to the extensive cross-sectoral stakeholder meetings that are required to develop new Standards. An annual budget of US\$ 2,760 is provided for coordinating (including capacity building at the level of kebeles) local stakeholders to establish household sorting of waste. Since more emphasis is provided to review progress at the mid-term, a budget of US\$ 15,000 has been allocated to organise meetings at the regional/local level to internalise the recommendations of the mid-term review in each city/town plan.</p>
9	<p>UNDP funding is used to develop Resettlement Action Plans (RAPs) in the 6 target cities and towns. The RAPs will be developed under Output 1.5 and will cost at total of US\$ 100,000, of which half (i.e. US\$ 50,000) will be used to cover the fees of an international consultant. The RAPs are expected to be completed by the end of Year 1 using UNDP's Displacement and Resettlement Standard. The other budget lines related to development of RAPs are 10, 11 and 12 below.</p>
10	<p>Local consultants will be used to support the international consultant for developing RAPs for a total cost of US\$ 34,000 (Year 1 – US\$ 24,000; Year 2 – US\$ 10,000). The budget for Year 2 is for following up on the implementation of the RAPs.</p>
11	<p>The total budget for travels related to development of RAPs is US\$ 10,000, with 70% spent in Year 1 to cover the air fare(s) of the International Consultant and field trips in the 6 target cities and towns. The remaining 30% of travel expenses are allocated in Year 2.</p>

12	A total of US\$ 6,000 has been earmarked for covering the costs of workshops and meetings spread over Year 1 (US\$ 4,000) and Year 2 (US\$ 2,000). While most meetings will take place in the 6 target cities and towns, it is expected that a kick-off meeting involving all City Administrations/Municipalities and Regional Bureaus will be carried out in Addis Ababa at the beginning of Year 1.
<b>OUTCOME 2</b>	
13	<p>International Consultants will be used in the first three years only and they will train the Local Consultants for carrying on with technical assistance in Years 4 and 5.</p> <p>To support the activities of Output 2.1, the budget allocation for International Consultants is: Year 1: US\$ 39,825; Year 2: US\$ 13,275. The budget allocation for Output 2.2 is US\$ 58,500 in Year 1. For developing market outlets for compost, International Consultants have been allocated as follows: Year 1 &amp; 2: US\$ 13,200 each; Year 3: US\$ 8,160. Output 2.4 that seeks to develop a market chain for dry recyclables will make use of International Consultants as follows: Year 1 &amp; 2: US\$ 9,400 each; Year 3: US\$ 4,700. For Output 2.5, a budget of US\$ 17,250 has been allocated in Year 1 and Year 2 each.</p> <p>For setting up and operationalising the national voluntary carbon offset scheme (Output 2.6), a budget of US\$ 24,584 has been earmarked in Year 1. The follow up work will be carried out by Local Consultants as per budget note 20.</p>
14	Local Consultants play a significant role in accomplishing the outputs related to Outcome 2, and are used throughout the entire project lifetime. To support the professionalisation and entrepreneurial skills of MSEs involved in composting and UGI activities (Output 2.1), an annual budget of US\$ 15,750 has been allocated for technical assistance from Local Consultants. For Output 2.2, a budget of US\$ 27,000 has been earmarked in Year 1 only. The budget allocation for Output 2.3 is: Year 1 & 2: US\$ 18,030; Year 3: US\$ 12,020; Year 4 & 5: US\$ 6,010. For Output 2.4, the allocated budget is: Year 1 & 2: US\$ 11,280; Year 3: US\$ 7,520; Year 4 & 5: US\$ 3,760. For Output 2.5, a budget of US\$ 11,500 has been allocated for each of Year 1 & 2.
15	Since the profiles of the TOs are technical in nature (see Annex E), fifty percent (i.e. US\$ 24,000) of their salaries are covered under Outcome 2. The remaining 50% is covered under Outcome 1 at budget note 3.
16	This budget will cover the travel expenses of the consultants as follows: Output 2.1: US\$ 4,500 per year over 5 years; Output 2.2: US\$ 4,500 in Year 1 only; Output 2.3: US\$ 5,950 in Year 1 & 2; US\$ 3,400 in Year 3; and US\$ 850 in each of Year 4 and 5; Output 2.4: US\$ 3,290 in Year 1 & 2; US\$ 1,880 in Year 3; and US\$ 470 in each of Year 4 and 5; Output 2.5: US\$ 2,875 in each of Year 1 & 2; Output 2.6: US\$ 1,294 in Year 1 only.
17	This budget line is for purchasing computers (5 @ US\$ 2,500) and printers (3 @ US\$ 3,000), and should be read in conjunction with the budget line at budget note 5.
18	An annual amount of US\$ 13,850 is allocated for covering the cost of printing materials for marketing compost and other recycled products. There will also be the publication of TVET training manuals and courses for SWM and UGI Standards.
19	Because most activities related to the outputs are covered in the first 2 years of the project, the budget for coordinating national, regional and local stakeholders is correspondingly higher in the first 2 years. For Outputs 2.1, 2.3 and 2.4, fixed annual budgets of US\$ 9,000, US\$ 3,400, and US\$ 1,880, respectively, have been allocated over the 5 years of the project. The budget for Output 2.5 is US\$ 5,750 in each of Year 1 and 2.
20	UNDP's funding will be used for providing technical assistance on Outputs 2.5 and 2.6. The technical assistance supported by UNDP will make exclusive use of Local Consultants in Years 3 to 5, and it will complement the technical support provided using GEF-funding in Years 1 and 2. For Output 2.5, the yearly allocation is: Year 3: US\$ 10,395; Year 4: US\$ 10,395; and Year 5: US\$ 10,710. Similarly, the UNDP support for technical assistance on Output 2.6 will complement the technical assistance provided by an International Consultant in Year 1 (see budget note 13). For Output 2.6, the yearly allocation is: Year 1: US\$ 13,200; Year 2: US\$ 13,200; Year 3: US\$ 11,000; Year 4: US\$ 6,600.
21	The travel budget is for covering the travel costs of the Local Consultants working in Outputs 2.5 and 2.6 in the 6 target cities and towns. The travel budget allocation for Output 2.5 is: Year 3: US\$ 1,485; Year 4: US\$ 1,485; and Year 5: US\$ 1,530. The travel budget allocation for Output 2.6 is: Year 1: US\$ 3,300; Year 2: US\$ 3,300; Year 3: US\$ 2,750; Year 4: US\$ 1,650.
22	Budget is for coordination meetings of the local and national stakeholders for Output 2.5 in Years 3 to 5, and will complete the GEF-financed activities in Years 1 and 2.
<b>OUTCOME 3</b>	
23	International Consultants will be used to support the implementation of activities for Outputs 3.1, 3.2, 3.3 and 3.4. The learning-by-doing capacity building approach implies that the International Consultants will also train local staff, including the Local Consultants. Outputs 3.1 and 3.2 that are crucial for monitoring GHG emission reductions accruing from the project activities will be completed by Year 2, with the bulk of the work completed in Year 1. The allocation of the budget for International Consultants working on Outputs 3.1 and 3.2 is: Output 3.1 (Year 1: US\$ 94,232; Year 2: US\$ 31,411); Output 3.2 (Year 1: US\$ 78,750; Year 2: US\$ 26,250). Regarding Output 3.3, the technology action plans will be developed between Years 2 and 4, and the mitigation action plans will be tailored to the specific SWM and UGI activities in the 6 target cities and towns. The allocation of the budget for

	International Consultants is as follows: Year 2: US\$ 48,125; Year 3: US\$ 28,875; Year 4: US\$ 19,250. The mitigation technology action plans will also include carrying baseline studies in other cities and towns that will provide an opportunity for scaling up GHG emission reductions. Sectoral NAMAs will be developed using the mitigation technology action plans during Years 4 (US\$ 56,000) and 5 (US\$ 56,000) for submission and registration with the NAMA Registry.
24	The National Consultants will provide in-country technical support for Outputs 3.1 to 3.4. The allocation of the budget follows the logic explained at budget note 23. The budget allocation for these outputs is: Output 3.1: (Year 1: US\$ 26,923; Year 2: US\$ 8,974); Output 3.2: (Year 1: US\$ 22,500; Year 2: US\$ 7,500); Output 3.3 (Year 2: US\$ 28,875; Year 3: US\$ 17,325; Year 4: US\$ 11,550); and Output 3.4 (Year 4: US\$ 36,000; Year 5: US\$ 36,000).
25	The travel budget is for covering the travel costs of International and National Consultants. The allocation with respect to the outputs is: Output 3.1: (Year 1: US\$ 5,385; Year 2: US\$ 1,795); Output 3.2: (Year 1: US\$ 4,500; Year 2: US\$ 1,500); Output 3.3 (Year 2: US\$ 6,125; Year 3: US\$ 3,675; Year 4: US\$ 2,450); and Output 3.4 (Year 4: US\$ 5,000; Year 5: US\$ 5,000).
26	Costs will be born for the publication of the MRV mechanisms, including the standardised baselines in Year 2; the mitigation technology action plans in Year 4; and the sectoral NAMAs in Year 5.
27	Workshops will be carried out for the dissemination of the MRV mechanisms and standardised baselines at the federal level in Year 2. It is anticipated that their development will be carried out mainly in Year 1 in close collaboration with the MEFCC, and is not expected to require cross-sectoral coordination. In contrast, being context specific, the development of mitigation technology action plans (Output 3.3) will require the cross-sectoral coordination of local stakeholder in the 6 target cities and towns (and additional selected towns and cities). The budget for in-city/town meetings is US\$ 1,750 in Years 2 and 3. A national meeting for validating and disseminating the final mitigation technology action plan in Year 4. A national meeting for validating the sectoral NAMAs (Output 3.4) emanating from the technology action plans will be held in Year 5 (US\$ 4,000).
28	UNDP's support for technical assistance is related to Output 3.3 that is concerned with the development of technology action plans for alternative SWM options and UGI activities in the 6 target cities and towns. The funding for International and Local Consultants will support the GEF-financed activities related to Output 3.3.
29	The International Consultant will train the Local Consultants who will then continue the in-country work. The bulk of the work is expected to be completed in Years 2 and 3, with a minimum level of follow ups in Year 4.
30	Aligned with the timeframe for completing the technology actions plans, UNDP will fund workshops and meetings in the 6 cities and towns related to Output 3.3 in Years 2 and 3.
<b>OUTCOME 4</b>	
31	The services of International Consultants will be required for Outputs 4.1 (US\$ 272,547) and 4.2(US\$ 33,820), which are considered to be less mature in Ethiopia and requiring technology transfer assistance and support using international best practices. The relative share of consultancy fees between these outputs is consistent with the absolute levels of corresponding investments in infrastructure (see budget note 34). The need for consultancy decreases over time. For Output 4.2, 25% of budget is allocated in each of Years 1-3; 15% in Year 4; and 10% in Year 5. For Output 4.1, 40% of budget is allocated in each of Years 1 and 2; and 20% in Year 3.
32	National Consultants are used to support the International Consultants, and MSEs involved in composting and UGI activities. Because of the in-depth expertise in afforestation and reforestation that exists in the 4 Regions, technical support under Output 4.3 is exclusively from local consultants (US\$ 171,273). The yearly allocation of local consultant consultancy fees for Output 4.3 follows the annual percentage allocation of investments discussed at budget note 34. For Output 4.1, a budget of US\$ 194,676 is allocated evenly over 5 years. For Output 4.2, US\$ 37,578 is allocated with 30% expected to be spent in each of Years 1-3, while the remaining 10% is spent in Year 4.
33	Travel costs are associated with the air fares of International Consultants and field trips in the 6 target cities and towns. In order to minimise travel expenditure, local consultants will be recruited in the 4 Regions as far as practicable. The breakdown between Outputs 4.1, 4.2 and 4.3 are US\$ 38,935; US\$ 15,031; and US\$ 51,382, respectively. For Output 4.1, there is an equal allocation over 5 years, while it is proportional to the annual percentage investment in UGI infrastructure given at budget note 34 for Output 4.3. For Output 4.2, 30% of the travel budget is allocated in each of Years 1 to 3, and 10% is allocated in Year 4.
34	48% of total GEF funds are invested in composting and UGI activities. The costs of implementing composting infrastructure are detailed in Section 4.5 and Annex O to this Project Document. Under Output 4.1, investment in composting infrastructure is expected to be US\$ 1,440,605 and spread in equal quantum over five years. A budget of US\$ 289,349 is earmarked for the rehabilitation of the green spaces (old open waste dump site) in Bishoftu (Output 4.2). Afforestation and reforestation activities have been allocated a budget of US\$ 1,181,786 (Year 1 = 13%; Year 2 = 16%; Year 3 = 19%; Year 4 = 24%; Year 5 = 28%). To support these UGI activities, the seedling production capacity of nurseries will be increased through an annual investment of US\$ 77,073 in each of Years 1 to 4 (i.e. total of US\$ 308,292).
<b>PROJECT MANAGEMENT COST (PMC)</b>	
35	Includes the full salaries of the Project Manager (US\$ 54,000) and Administrative Assistant (US\$ 36,000), and 50% of the salaries of two Technical Officers (US\$ 48,000). The profiles and well as salaries are given in the terms of references in Annex E.

36	This budget line is for international consultant fees for carrying out the mid-term review (US\$ 30,800) and terminal evaluation (US\$31,600) as per M&E requirements and budget detailed in TABLE 13.
37	US\$ 6,000 has been earmarked for organizing the Inception Workshop as per M&E requirements and budget detailed in TABLE 13. The budget covers the travel and accommodation costs of participants representing 4 Regional Bureaus and 6 City Administrations/Municipalities.
38	The budget is for covering travel costs (international airfare and field visits to 6 target cities and towns) associated with the mid-term review (US\$ 8,400 ) and the terminal evaluation (US\$ 9,200).
39	Direct project costs totaling US\$ 75,982 have been included in the project management costs. The calculation of the total direct project cost is given in Annex R, which also contains the LOA between the Government of Ethiopia and the UNDP.
40	The project budget includes an annual audit cost US\$ 3,500 as per M&E requirements and budget detailed in TABLE 13.

### Breakdown of GEF and UNDP funds

Items	GEF (US\$)	UNDP (US\$)
DPC	75,982	
Audit	17,500	
International consultants	1,145,943	60,000
National consultants	1,003,025	144,500
Travel	298,322	25,500
Printing & publication	83,895	
Equipment	3,555,431	
Workshop	207,074	20,000
Service contract	186,000	
Office supplies	93,950	
<b>TOTAL</b>	<b>6,667,123</b>	<b>250,000</b>

### Summary of Funds:<sup>104</sup>

	Amount Year 1 (US\$)	Amount Year 2 (US\$)	Amount Year 3 (US\$)	Amount Year 4 (US\$)	Amount Year 5 (US\$)	Total (US\$)
GEF	1,652,210	1,523,594	1,248,539	1,144,631	1,098,149	<b>6,667,123</b>
UNDP (TRAC)	101,500	64,000	41,100	28,100	15,300	<b>250,000</b>
UNDP (cash)	863,500	863,500	690,800	690,800	345,400	<b>3,454,000</b>
UNDP (in-kind)	410,000	410,000	410,000	410,000	410,000	<b>2,050,000</b>
National Government (cash)	2,371,500	3,162,000	3,952,500	3,162,000	3,162,000	<b>15,810,000</b>
National Government (in-kind)	1,520,425	1,790,143	1,999,860	1,158,868	1,158,868	<b>7,628,164</b>
Regional Government (cash)	1,485,042	1,980,055	2,475,070	1,980,056	1,980,056	<b>9,900,279</b>
Regional Government (in-kind)	1,128,514	1,504,685	1,880,857	1,504,685	1,504,685	<b>7,523,426</b>
CSO (in-kind)	59,404	59,404	59,403	59,404	59,404	<b>297,019</b>
Private Sector (in-kind)	40,000	40,000	40,000	40,000	40,000	<b>200,000</b>
<b>TOTAL</b>	<b>9,632,095</b>	<b>11,397,381</b>	<b>12,798,129</b>	<b>10,178,544</b>	<b>9,773,862</b>	<b>53,780,011</b>

<sup>104</sup> Summary table should include all financing of all kinds: GEF financing, co-financing, cash, in-kind, etc.

ALLOCATION OF BUDGET AT NATIONAL AND REGIONAL LEVELS

GEF Outcome/Atlas Activity	Donor Name	ATLAS Budget Description	MUDH	Adama	Bishoftu	Hawassa	Bahir dar	Mekelle	Dire Dawa	Total (US\$)
<p><b>OUTCOME 1:</b> The regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting the national policy environment for integrating ISWM and UGI within urban systems.</p>	<p><b>GEF</b></p>	International Consultants	44,520	6,720	7,088	10,10,675	13,604	13,904	14,789	111,300
		Local Consultants	73,520	11,097	11,705	17,629	22,466	22,961	24,423	183,800
		Equipment and Furniture	138,000	20,829	21,971	33,090	42,169	43,098	45,843	345,000
		Office supplies	28,840	4,353	4,592	6,915	8,813	9,007	9,581	72,100
		Travel	31,800	4,800	5,063	7,625	9,717	9,931	10,564	79,500
		Printing and Publication Costs	7,600							7,600
		Workshops and Meetings	36,280	5,476	5,776	8,699	11,086	11,330	12,052	90,700
	<b>sub-total GEF</b>	<b>360,560</b>	<b>53,273</b>	<b>56,196</b>	<b>84,633</b>	<b>107,855</b>	<b>110,231</b>	<b>117,252</b>	<b>890,000</b>	
	<p><b>UNDP</b></p>	International Consultants		9,186	4,169	7,327	10,096	10,486	8,737	50,000
		Local Consultants		6,247	2,835	4,982	6,865	7,130	5,941	34,000
		Travel		1,837	834	1,465	2,019	2,097	1,747	10,000
		Workshops and Meetings		1,102	500	879	1,212	1,258	1,048	6,000
		<b>sub-total UNDP</b>		<b>18,373</b>	<b>8,337</b>	<b>14,653</b>	<b>20,192</b>	<b>20,971</b>	<b>17,474</b>	<b>100,000</b>
<b>sub-total outcome 1</b>		<b>360,560</b>	<b>71,646</b>	<b>64,533</b>	<b>99,286</b>	<b>128,047</b>	<b>131,202</b>	<b>134,726</b>	<b>990,000</b>	
<p><b>OUTCOME 2:</b> A market-based system is developed and participating Micro &amp; Small Enterprises (MSEs) are supported professionally to ensure financial</p>	<p><b>GEF</b></p>	International Consultants	95,934	14,480	15,274	23,003	29,315	29,960	31,869	239,834
		Local Consultants	98,240	14,828	15,641	23,556	30,020	30,681	32,635	245,600
		Travel	24,178	3,649	3,849	5,797	7,388	7,551	8,032	60,444
		Office supplies	8,740	1,319	1,392	2,096	2,671	2,730	2,903	21,850
		Printing and Publication Costs	69,250							69,250

GEF Outcome/Atlas Activity	Donor Name	ATLAS Budget Description	MUDH	Adama	Bishoftu	Hawassa	Bahir dar	Mekelle	Dire Dawa	Total (US\$)
sustainability of compost production and utilisation.		Workshops and Meetings	33,160	5,005	5,280	7,951	10,133	10,356	11,016	82,900
		<b>sub-total GEF</b>	<b>329,501</b>	<b>39,280</b>	<b>41,436</b>	<b>62,403</b>	<b>79,526</b>	<b>81,277</b>	<b>86,455</b>	<b>719,878</b>
		Local Consultants	30,200	4,558	4,808	7,241	9,228	9,432	10,032	75,500
		Travel	6,200	936	987	1,487	1,895	1,936	2,060	15,500
		Workshops and Meetings	9,000							9,000
		<b>sub-total UNDP</b>	<b>45,400</b>	<b>5,494</b>	<b>5,795</b>	<b>8,728</b>	<b>11,123</b>	<b>11,368</b>	<b>12,092</b>	<b>100,000</b>
		<b>sub-total outcome 2</b>	<b>374,901</b>	<b>44,774</b>	<b>47,231</b>	<b>71,131</b>	<b>90,649</b>	<b>92,645</b>	<b>98,547</b>	<b>819,878</b>
<b>OUTCOME 3:</b> A coherent climate mitigation framework is established for the development of a NAMA to catalyse the transformational capacity of integrated urban systems to generate large emission reductions.	GEF	International Consultants	175,557	26,497	27,951	42,095	53,646	54,827	58,319	438,892
		Local Consultants	78,259	11,812	12,460	18,765	23,914	24,441	25,997	195,648
		Travel	14,172	2,139	2,256	3,398	4,331	4,426	4,708	35,430
		Printing and Publication Costs	7,045							7,045
		Workshops and Meetings	10,990	1,659	1,750	2,635	3,358	3,432	3,651	27,474
		<b>sub-total GEF</b>	<b>286,023</b>	<b>42,107</b>	<b>44,417</b>	<b>66,893</b>	<b>85,248</b>	<b>87,126</b>	<b>92,676</b>	<b>704,489</b>
		International Consultants	10,000							10,000
		Local Consultants		6,430	2,918	5,129	7,067	7,340	6,116	35,000
		Workshops and Meetings	2,000	551	250	440	606	629	524	5,000
		<b>sub-total UNDP</b>	<b>12,000</b>	<b>6,982</b>	<b>3,168</b>	<b>5,568</b>	<b>7,673</b>	<b>7,969</b>	<b>6,640</b>	<b>50,000</b>
		<b>sub-total outcome 3</b>	<b>298,023</b>	<b>49,089</b>	<b>47,585</b>	<b>72,461</b>	<b>92,921</b>	<b>95,095</b>	<b>99,316</b>	<b>754,489</b>
		<b>OUTCOME 4:</b> Proof-of-concept urban systems integrating ISWM and UGI are	GEF	International Consultants	122,547	15,188	37,300	27,313	28,865	39,349
Local Consultants	161,411			20,004	49,130	35,975	38,019	51,829	47,160	403,527
Travel	42,139			5,223	12,826	9,392	9,926	13,531	12,312	105,348

GEF Outcome/Atlas Activity	Donor Name	ATLAS Budget Description	MUDH	Adama	Bishoftu	Hawassa	Bahir dar	Mekelle	Dire Dawa	Total (US\$)
operationalised with quantified GHG emission reductions in a NAMA framework.		Equipment and Furniture		266,049	653,403	478,449	505,637	689,294	627,199	3,220,031
		<b>sub-total GEF</b>	<b>326,097</b>	<b>306,464</b>	<b>752,659</b>	<b>551,129</b>	<b>582,446</b>	<b>794,003</b>	<b>722,475</b>	<b>4,035,274</b>
		<b>sub-total outcome 4</b>	<b>326,097</b>	<b>306,464</b>	<b>752,659</b>	<b>551,129</b>	<b>582,446</b>	<b>794,003</b>	<b>722,475</b>	<b>4,035,274</b>
<b>PROJECT MANAGEMENT UNIT</b>	<b>GEF</b>	Service Contract	202,000							202,000
		Workshops and Meetings	6,000							6,000
		Travel	16,000							16,000
		Direct Project Costs	75,982							75,982
		Audit	17,500							17,500
		<b>Total Management</b>	<b>317,482</b>							
<b>PROJECT TOTAL (GEF)</b>			<b>1,619,663</b>	<b>441,124</b>	<b>894,708</b>	<b>765,058</b>	<b>855,075</b>	<b>1,072,637</b>	<b>1,018,858</b>	<b>6,667,123</b>
<b>PROJECT TOTAL (UNDP)</b>			<b>57,400</b>	<b>30,848</b>	<b>17,300</b>	<b>28,949</b>	<b>38,988</b>	<b>40,308</b>	<b>36,206</b>	<b>250,000</b>
<b>PROJECT TOTAL (GEF + UNDP)</b>			<b>1,677,063</b>	<b>471,972</b>	<b>912,008</b>	<b>794,007</b>	<b>894,063</b>	<b>1,112,945</b>	<b>1,055,064</b>	<b>6,917,123</b>

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## 10. LEGAL CONTEXT

158. This document, together with the CPAP signed by the Government and UNDP, which is incorporated by reference, constitute together a Project Document as referred to in the SBAA. All CPAP provisions apply to this document.
159. Consistent with Article III of the Standard Basic Assistance Agreement, 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.
160. The implementing partner shall:
- Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried out;
  - Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.
161. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.
162. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by the UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

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## 11. MANDATORY ANNEXES

- Annex A: Multi-year Workplan
- Annex B: Monitoring Plan
- Annex C: Evaluation Plan;
- Annex D: GEF Tracking Tool at baseline
- Annex E: Terms of Reference for Project Board, Project Manager, Chief Technical Advisor and other positions as appropriate
- Annex F: UNDP Social and Environmental and Social Screening Template (SESP)
- Annex I: Capacity Assessment of MUDH and HACT Micro Assessment
- Annex J: Co-Financing Letters
- Annex K: Detailed Rationale for ISWM and UGI for Ethiopian Cities
- Annex L: Details of Applicable Legislation and Ongoing Government Initiatives to Encourage UGI and ISWM in Ethiopian Cities
- Annex M: Detailed Barrier Analysis
- Annex N: Theory of Change Diagram
- Annex O: Financial Analysis for the Production of Compost
- Annex P: UGI City Profiles
- Annex Q: UNDP Direct Project Support Services

## ANNEX A: MULTI YEAR WORK PLAN

### MULTI-YEAR WORK PLAN 2017-21

Project title: Ethiopian NAMA: Creating Opportunities for Municipalities to Produce and Operationalise Solid waste Transformation (COMPOST)

Project ID: 00100275

EXPECTED OUTPUTS	PLANNED ACTIVITIES	PROJECT YEAR 20--					RESPONSIBLE PARTY	PLANNED BUDGET		
		16	17	18	19	20		Funding Source	Budget Description	Amount
<b>Outcome 1: Regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting national policy environment for integrating ISWM and UGI within urban systems</b>										
Output 1.1: Developed ISWM and UGI standards that are transposed to the regional level.	Activity 1.1.1: Review of existing and endorsed ISWM and UGI standards such as the UGI standards, the solid waste management proclamation, and the urban development strategy	x					MUDH	GEF	71200, 71300	\$15,675
Indicator 1.1: Number of transposed ISWM and UGI standards for use by local and regional governments	Activity 1.1.2: Plans for consulting with for regional bureaus and six municipal governments	x	x				MUDH	GEF	71200, 71300, 71600, 72500, 74200	\$31,925
Baselines (2017): There are no approved and enforced standards to encourage ISWM and UGI standards within local and regional governments	Activity 1.1.3: Workshops and meetings on transposing federal UGI and ISWM standards to the regional bureaus and municipal governments		x	x			MUDH	GEF	71200, 71300, 74200, 75700	\$9,400
Targets (2018):: 10 ISWM and UGI standards transposed to for regional bureaus and six municipalities	Activity 1.1.4: Assistance in documentation of UGI and ISWM standards to target bureaus and governments		x	x				GEF	71200, 71300, 72500, 74200	\$13,000

Output 1.2: Tools and protocols for the enforcements of legal ISM W/UGI jurisdictions and the adoption of best practices for sustainable land management regarding urban greenery, waste management and IUWM.	Activity 1.2.1: Planning of workshops for technical assistance to utilize existing cadastral maps and satellite imagery as an enforcement tool to protect UGI/ISWM jurisdictions	x	x				MUDH	GEF	71200, 71300, 72500, 74200	\$26,000
Indicator 1.2: Number of tools and mechanisms developed for encouraging the integration of ISWM and UGI in urban systems	Activity 1.2.2: Conducting workshops on the use of cadastral maps and satellite imagery to protect UGI/ISWM jurisdictions, and integrating aspects of integrated urban water management (IU WM) to address issues of dumping of solid and liquid waste into sensitive bodies	x	x	x			MUDH	GEF	71200, 71300, 71600, 72500, 74200, 75700	\$58,000
Baselines (2017): There are no tools or mechanisms developed for encouraging the integration of ISWM and UGI in urban systems	Activity 1.2.3: Demonstration on the use of cadastral maps and satellite imagery as a tool to legally protect UGI/ISWM jurisdictions	x	x				MUDH	GEF	71200, 71300, 72500, 74200,	\$30,960
Targets (2018):: 6 tools for safeguarding legal UGI and ISWM jurisdictions for 6 cities	Activity 1.2.4: Guidance to local and urban councils in devising or updating policies to implement IUWM (including the acquisition and training of decision-support and scoping models for IUWM)		x	x			MUDH	GEF	71200, 71300, 71600, 72500, 74200	\$23,920
	Activity 1.2.5: Development of monitoring mechanism for UGI, ISWM, and IUWM in line with CRGE strategy that mandates MRV systems		x	x			MUDH	GEF	71200, 71300, 72500, 74200	\$21,120
Output 1.3: Incentives for and promotion of source sorting by households in all kebeles in selected municipalities.	Activity 1.3.1: Preparing proposals for the institutionalization of waste sorting at the household level using existing institutional arrangements	x	x	x	x	x	MUDH	GEF	71200, 71300	\$96,600
Indicator 1.3: Number of tools and mechanisms developed for encouraging the integration of ISWM and UGI in urban systems	Activity 1.3.2: Consultation meetings with six cities to confirm approaches on implementing waste segregation at the household level	x	x	x	x	x	MUDH	GEF	71600, 75700	\$18,400

<p>Baselines (2017): There are no incentives for promoting source sorting by households in any municipality in Ethiopia</p> <p>Targets (2018): 1 mechanism in the form of an incentive (for source sorting of waste at households) for each of the 6 cities in the Project</p>	<p>Activity 1.3.3: Kebele-level technical assistance on practical exercises of waste segregation using agreed upon approaches</p>	x	x	x	x	x	MUDH	GEF	72200	\$345,000
<p>Output 1.4: National standard for organic compost with quality assurance systems (QAS) at the regional level.</p> <p>Indicator 1.4: Number of standards adopted for organic compost</p> <p>Baselines (2017): There are no national standards for organic compost in Ethiopia</p> <p>Targets (2018):: An adopted national standard for organic compost with quality assurance systems in each city</p>	<p>Activity 1.4.1: Review of composting standards similar to European compost network for applicability to the Ethiopian environment</p>	x					MUDH	GEF	71300, 75700	\$15,000
	<p>Activity 1.4.2: Drafting of national composting standards (Ethiopian Standards Agency)</p>	x					MUDH	GEF	71300, 72500	\$15,000
	<p>Activity 1.4.3: Design of QAS including quality labelling by the Ethiopian Standards Agency</p>	x	x				MUDH	GEF	71300, 74200	\$35,000
	<p>Activity 1.4.4: Transposition of QAS for composting to 6 cities</p>	x	x				MUDH	GEF	71300, 71600, 74200, 75700	\$35,000
<p>Output 5: A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP's Displacement and Resettlement Standard.</p> <p>Indicator 1.5: Number of RAPs developed</p> <p>Baselines (2016): No legislation regarding the resettlement of illegal settlers and no RAPs developed</p> <p>Targets (2021): RAPs developed and illegal settlers compensated and integrated in COMPOST project with jobs</p>	<p>Activity 1.5.1. A social assessment is carried out in each city/town in order to provide adequate data to develop the RAPs</p>	x					MUDH	UNDP	71200, 71300, 71600	\$20,000
	<p>Activity 1.5.2: Develop a Resettlement Action Plan (RAP), including an Environmental and Social Monitoring Plan (ESMP) for illegal settlers within its boundary according to UNDP's Displacement and Resettlement Standard (DRS)</p>	x					MUDH	UNDP	71200, 71300, 71600, 75700	\$60,000
	<p>Activity 1.5.3: Develop plan to integrate illegal settlers in UGI activities</p>	x	x				MUDH	UNDP	71200, 71300, 71600, 75700	\$20,000

<p>Output 6: A twinning programme with other cities experienced in ISWM and UGI, and with institutions developing and implementing standards, to inspire and build capacities.</p> <p>Indicator 1.6: Number of twinning agreements with other cities</p> <p>Baselines (2017): There are no twinning agreements with other cities on ISWM and UGI initiatives</p> <p>Targets (2021):: Twinning agreements with 3 cities (possibly New York City, or other cities in Uganda, India or Australia)</p>	<p>Activity 1.6.1: Preliminary discussions with potential twinning cities</p>	x					MUDH	GEF	71300, 75700	\$10,000	
	<p>Activity 1.6.2: Agreement on scope of urban issues to be covered under the twinning programme</p>	x	x		x		MUDH	GEF	71300	\$20,000	
	<p>Activity 1.6.3: Organization of information exchange forums on ISWM and UGI issues (such as workshops, seminars, webinars and study tours)</p>	x	x		x		MUDH	GEF	71300, 71600, 75700	\$70,000	
<b>TOTAL FOR COMPONENT 1</b>											<b>\$990,000</b>
<b>Outcome 2: A market-based system is developed and participating micro and small Enterprises (MSEs) are supported professionally to ensure financial sustainability of compost production and utilization</b>											
<p>Output 2.1: A developed capacity building programme in conjunction with the Entrepreneur Development Centre (EDC) to enhance OSHA conditions of MSEs especially in ISWM and to enhance the entrepreneurship skills of all MSEs.</p> <p>Indicator 2.1: Number of participating MSEs in capacity building programme with EDC</p> <p>Baselines (2017): No capacity building programs for MSEs involved with ISWM</p> <p>Targets (2021): 12 MSEs participating in capacity building programme for entrepreneurship skills focusing on ISWM</p>	<p>Activity 2.1.1: Meetings with EDC to set up OSHA courses for MSEs on municipal solid waste collection</p>	x					MUDH	GEF	71300	\$10,000	
	<p>Activity 2.1.2: Screening of MSEs for participation in EDC capacity building programme</p>	x	x				MUDH	GEF	71300, 71600	\$18,750	
	<p>Activity 2.1.3: Inputs from an expert agronomist to conduct field trials and participatory exercises for MSEs and local authorities on windrow composting production cycle</p>	x	x				MUDH	GEF	71200	\$56,250	
	<p>Activity 2.1.4: Training for MSEs on the collection and transport of waste to composting sites including the use of protective equipment and best practices on hygiene</p>	x	x	x	x	x	MUDH	GEF	71300, 71600, 74200, 75700	\$70,000	
	<p>Activity 2.1.5: Training for designated regional authorities on protocols for monitoring compost quality</p>	x	x	x	x	x	MUDH	GEF	71300, 71600, 74200, 75700	\$70,000	

Output 2.2: An established financing mechanism to support the establishment of new MSEs and to support the skill and technological enhancement of existing MSEs in the ISWM-UGI value chain.	Activity 2.2.1: Discussions with Ethiopian Development Bank and other financial institutes on programme to support MSEs for waste collection and operation of composting facilities	x					MUDH	GEF	71200, 71300	\$15,000
Indicator 2.2: Number of MSEs accessing credit lines and loans from financing mechanism	Activity 2.2.2: Screening of pilot MSEs for financial support from participating financial institutions	x					MUDH	GEF	71200, 71300, 71600	\$15,000
Baselines (2017): There are no existing financial mechanisms to assist MSE startups Targets (2018): 12 MSEs receiving assistance from established financial mechanism (2 per city)	Activity 2.2.3: Assistance in the preparation of business plans for participating MSEs for the business of collecting and sorting of organic waste to composting plants, and the setup operation, and sale of compost	x					MUDH	GEF	71200, 71300, 71600	\$60,000
Output 2.3: Market outlets for compost generated by municipal composting plants.	Activity 2.3.1: Marketing analysis of compost produced by project including a profile of competitor products and prices	x	x				MUDH	GEF	71200, 71300, 71600	\$20,000
Indicator 2.3: Number of market outlets for compost generated by municipal composting plants Baselines (2017): There are no market outlets for compost from MSW Targets (2021):: 6 market outlets for compost generated by municipal composting plants	Activity 2.3.2: Analysis with ATA on the complementarity of blended fertilizers with locally produced compost	x	x				MUDH	GEF	71200, 71300, 71600	\$15,000
	Activity 2.3.3: Report on the advantages of blended compost with chemical fertilizers along with a review of market outlets with local markets, restaurants and other significant generators of organic waste	x	x				MUDH	GEF	71200, 71300, 71600, 74200, 75700	\$25,000
	Activity 2.3.4: Marketing to wholesalers, public sector entities, and private sector users of compost (i.e. private nurseries, flower greenhouses, vegetable farmers)		x	x	x	x	MUDH	GEF	71200, 71300, 71600, 74200, 75700	\$55,000
	Activity 2.3.5:Preparation and finalization of long-term contracts between composting MS ease and public and private sector companies with demand for compost material		x	x	x	x	MUDH	GEF	71200, 71300, 71600, 74200, 75700	\$55,000

Output 2.4: Market outlets for nonorganic recycled waste.	Activity 2.4.1: Report on survey of the content of non-organic waste from MSW in six cities and potential for recycling	x	x				MUDH	GEF	71200, 71300, 71600, 74200	\$20,000
Indicator 2.4: Number of market outlets for non-organic recycled waste	Activity 2.4.2: Discussions with private sector recycling companies on their uptake of nonorganic waste from MSW for recycling	x	x	x	x	x	MUDH	GEF	71200, 71300, 71600, 74200, 75700	\$40,000
Baselines (2017): There are no no market outlets for non-organic recycled waste from the municipal sorting plant	Activity 2.4.3: Preparation and finalization of long-term contracts between city and private sector recycling companies for the supply of recyclable nonorganic waste		x	x	x	x	MUDH	GEF	71200, 71300, 71600, 74200	\$34,000
Targets (2018): 6 market outlets for nonorganic recycled waste generated from municipal sorting plants										
Output 2.5: ISWM and UGI curriculum in education.	Activity 2.5.1: Recruitment of an international lead assessor for ISWM and UGI	x					MUDH	GEF	71300	\$4,000
Indicator 2.5: Number of vocational institutes and universities with ISWM and UGI curriculum	Activity 2.5.2: Design of "training of trainers" (ToT) certification for ISWM and UGI for TVET	x	x				MUDH	GEF	71200, 71300, 74200, 75700	\$34,000
Baselines (2017): No ISWM and UGI curriculum in any vocational institutes and universities in Ethiopians	Activity 2.5.3: Delivery of ToT curriculum and certification process to selected vocational institutes and universities in collaboration with TVET		x	x	x	x	MUDH	GEF	71200, 71300, 71600, 74200, 75700	\$50,000
Targets (2018): 12 educational institutes (6 vocational institutes and 6 universities) have ISWM and UGI courses in their curricula				x	x	x	MUDH	UNDP	71300, 71600, 75700	\$25,000
	Activity 2.5.4: Delivery of curriculum and certification of trainers for ISWM and UGI			x	x	x	MUDH	GEF	71300, 74200, 75700	\$27,000
				x	x	x	MUDH	UNDP	71300, 71600, 75700	\$20,000
Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation.	Activity 2.6.1: Preparation of documentation of voluntary carbon offset schemes complete with MRV mechanisms	x					MUDH	GEF	71200, 71600	\$12,000
Indicator 2.6: Number of established voluntary carbon offset agreements with private companies to support ISWM and UGI initiatives	Activity 2.6.2: Follow-up discussions with private sector companies with CSR initiatives an interest in carbon offset schemes	x					MUDH	GEF	71200, 71600	\$13,878
		x	x	x	x		MUDH	UNDP	71300, 71600	\$20,000

Baselines (2017): There are no existing voluntary carbon offset schemes for ISWM and UGI initiatives  Targets (2019 and 2021): 2 agreements by 2019 and a total of 6 agreements by 2021	Activity 2.6.3: Finalized agreements for the purchase of carbon offsets from periurban forestry (generated from Output 4.4)	x	x	x	x			MUDH	UNDP	71300, 71600	\$35,000
<b>TOTAL FOR COMPONENT 2</b>											<b>\$819,878</b>
<b>Outcome 3: A NAMA is designed and implemented to catalyze transformation of integrated urban systems to generate large emission reductions</b>											
Output 3.1: Established standardised UGI and ISWM baselines for calculating emission reductions  Indicator 3.1: Number of established standardised baselines for calculating emission reductions  Baselines (2017): No established standardised baselines for calculating emission reductions  Targets (2021): 4 established UGI and ISWM standardised baselines	Activity 3.1.1: Preparation of standardized baseline for compost production using the organic fraction of landfill waste	x	x					MUDH	GEF	71200, 71300, 71600	\$45,000
	Activity 3.1.2: Preparation of standardized baseline for substitution of fertilizers for compost or urban greenery	x	x					MUDH	GEF	71200, 71300, 71600	\$45,000
	Activity 3.1.3: Preparation of standardized baseline for urban and peri-urban reforestation of degraded land	x	x					MUDH	GEF	71200, 71300, 71600	\$45,000
	Activity 3.1.4: Preparation of standardized baselines for displacement of nonrenewable fuel wood with renewable biomass generated by managed forests	x	x					MUDH	GEF	71200, 71300, 71600	\$44,489
Output 3.2: Developed MRV mechanisms for each of the 4 elements in Output 3.1.  Indicator 3.2: Number of MRV mechanisms developed for ISWM and UGI  Baselines (2017): No MRV mechanisms developed for ISWM and UGI  Targets (2021): 4 MRV mechanisms developed for elements from Output 3.1	Activity 3.2.1: Preparation of MRV mechanism for baseline developed under Activity 3.1.1	x	x					MUDH	GEF	71200, 71300, 71600	\$37,500
	Activity 3.2.2: Preparation of MRV mechanism for baseline developed under Activity 3.1.2	x	x					MUDH	GEF	71200, 71300, 71600	\$37,500
	Activity 3.2.3: Preparation of MRV mechanism for baseline developed under Activity 3.1.3	x	x					MUDH	GEF	71200, 71300, 71600	\$37,500
	Activity 3.2.4: Preparation of MRV mechanism for baseline developed under Activity 3.1.4	x	x					MUDH	GEF	71200, 71300, 71600	\$37,500

Output 3.3: Developed comprehensive technology baselines and prioritisation of technology options for ISWM and UGI.	Activity 3.3.1: Conduct a study linking specific waste streams from MSW, agriculture and livestock management with technologies or measures that utilize waste		x	x	x			MUDH	GEF	71200, 71300, 71600	\$87,500
Indicator 3.3: Number of technology baselines and technology options for ISWM and UGI	Activity 3.3.2: Consultations with public and private stakeholders on the feasibility of these technologies and measures		x	x	x			MUDH	GEF	74200, 75700	\$87,500
Baselines (2017): No technology baselines and options for ISWM and UGI	Activity 3.3.3: Conduct detailed studies on best technology options (such as biogas production from waste generated by abattoirs) that can be included within the NAMA proposed for Output 3.4		x	x	x			MUDH	UNDP	71200, 71300, 75700	\$50,000
Targets (2021): Two detailed studies (first on biogas production from abattoir waste, and second on organic solid waste for the production of furic and fumeric acid used as a binder by ATA for blending in organic fertilisers)											
Output 3.4: NAMA registered on the UNFCCC NAMA Registry and implemented initially covering 6 regional cities but with potential for scale-up within Ethiopia.	Activity 3.4.1: Preparation of NAMA documentation and submitted to Government for feedback				x	x		MUDH	GEF	71200, 71300, 75700	\$50,000
Indicator 3.4: Number of cities covered under a registered NAMA	Activity 3.4.2: National workshop for finalizing NAMA submission for ISWM and UGI				x			MUDH	GEF	71300, 74200, 75700	\$50,000
Baselines (2017): No cities covered under a NAMA for ISWM and UGI initiatives	Activity 3.4.3: Finalization of NAMA documentation that includes replication plan in other cities and other technology options (as identified in Output 3.3) to address ISWM and UGI				x	x		MUDH	GEF	71200, 71300, 71600, 74200	\$75,000
Targets (2021): 6 cities covered under a registered NAMA	Activity 3.4.4: Support to government on responses to NAMA submission to UNFCCC					x		MUDH	GEF	71200, 71300, 71600	\$25,000
<b>TOTAL FOR COMPONENT 3</b>											<b>\$754,489</b>
<b>Outcome 4: ISWM and UGI with quantified GHG emission reductions within the NAMA framework</b>											
Output 4.1: Operational municipal composting plants that are linked with the ATA blending facilities to progressively complement blended chemical fertilisers with compost.	Activity 4.1.1: Assistance in planning and preparing for the installation of composting plants in each city complete with ATA experience with fertilizer blending	x	x	x				MUDH	GEF	71200, 71300, 71600	\$88,000

<p>Indicator 4.1: Number of operational composting plants linked with ATA blending scheme</p> <p>Baselines (2017): No operational composting plants linked with ATA blending scheme</p> <p>Targets (2019, 2021): Two operational composting plants in 2019 (linked with CR GEF fast-track proposals for Hawassa and Bishoftu)</p>	<p>Activity 4.1.2: Organization of supervisory staff to oversee installation of composting plants</p>	x	x	x			MUDH	GEF	71200, 71300, 71600	\$92,000
	<p>Activity 4.1.3: Installation and completion of composting plants according to Environmental Management Plan (EMP)</p>	x	x	x			MUDH	GEF	72200	\$1,440,605
	<p>Activity 4.1.4: Assistance to operational staff of composting plants in the operations of the plant and securitization of the organic waste streams</p>	x	x	x	x		MUDH	GEF	71200, 71300, 71600	\$216,958
	<p>Activity 4.1.5: Monitoring of operations of composting plants to ensure sustained compost production and sales of compost according to set standards and Environment Management Plan (EMP)</p>	x	x	x	x	x	MUDH	GEF	71200, 71300, 71600	\$109,200
<p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors.</p> <p>Indicator 4.2: Number of hectares of rehabilitated and cleaned open green spaces and riparian corridors</p> <p>Baselines (2017): 0 ha of rehabilitated land after 2017</p> <p>Targets (2021): To be determined in collaboration with the 6 participating cities during Inception workshop</p>	<p>Activity 4.2.1: Assistance to 6 cities in the planning of planting of greenery for degraded open spaces and riparian corridors as determined by the municipalities including assessment of the existing capacity of nurseries to provide seedlings</p>		x	x			MUDH	GEF	72200	\$289,349
	<p>Activity 4.2.2: Organization and coordination of MSEs and city personnel prior to implementation of plantation of vegetation in degraded lands and riparian corridors(including old Bishoftu landfill site)</p>	x	x	x			MUDH	GEF	71200, 71300, 71600	\$28,000
	<p>Activity 4.2.3: Oversight of operations for plantation of vegetation for degraded lands and riparian corridors</p>		x	x	x		MUDH	GEF	71200, 71300, 71600	\$28,000
	<p>Activity 4.2.4: Monitoring of inputs to ensure survival of replanted vegetation</p>		x	x	x		MUDH	GEF	71200, 71300, 71600	\$30,429
<p>Output 4.3: Reforested degraded land in the vicinity of the 6 cities.</p>	<p>Activity 4.3.1: Assistance to the 6 cities in the planning of areas for peri-urban reforestation</p>	x	x	x	x	x	MUDH	GEF	72200	\$1,181,786

Indicator 4.3: Number of hectares of reforested degraded land  Baselines (2017): 0 ha of degraded land after 2017  Targets (2021): 33,309 ha of reforested degraded land	Activity 4.3.2: Organization and coordination of MSEs and city personnel prior to implementation of reforestation activities	x	x				MUDH	GEF	71200, 71300, 71600	\$177,000
	Activity 4.3.3: Environmental Management Plans developed and implemented regarding fast growing invasive species used for renewable fuelwood production	x	x	x	x	x	MUDH	GEF	71200, 71300, 71600	\$176,947
	Activity 4.3.4: Monitoring of inputs to ensure survival of peri-urban reforestation		x	x	x	x	MUDH	GEF	71200, 71300, 71600	\$177,000
<b>TOTAL FOR COMPONENT 4</b>										<b>\$4,035,274</b>
<b>Admin and Management</b>										
	PSC Meetings	x	x	x	x	x		GEF	75700	\$6,000
	Salary of Project staff (Accountant, Assistant/Interpreter)	x	x	x	x	x		GEF	71400	\$202,000
	Direct Project Costs	x	x	x	x	x		GEF	74599	\$75,982
	Project Audits	x	x	x	x	x		GEF	74100	\$17,500
	Travel			x		x		GEF	71600	\$16,000
<b>Total for Admin and Management</b>										<b>\$317,482</b>
<b>TOTAL FOR THE YEAR 2017-21</b>										<b>\$6,917,123</b>

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## **ANNEX B: MONITORING PLAN**

**Monitoring Plan:** The Project Manager will collect results data for the indicators given in the Project Results Framework (Section 5) and the Multi-Year Work Plan (Annex A). The Monitoring & Evaluation Plan given in Section 6 will be used.

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions and Risks
<b>Project objective:</b> To promote significantly greater use of Integrated Solid Waste Management (ISWM) and Urban Green Infrastructure (UGI) approaches in Ethiopian cities and towns in alignment with the National Growth and Transformation Plan for the urban sector	Kilotonnes of CO <sub>2</sub> reduced	This will be the annual GHG emission reductions generated from: a) avoided methane production in landfills through diversion of MSW to produce compost; and b) from trees planted to establish peri-urban forestry and generation of renewable biomass for fuel wood use.	Data on the tonnage of waste diverted from landfill to a composting facility will be collected with an appropriate conversion factor applied for CO <sub>2</sub> emissions avoided  UGI data will be collected through monitoring of seedling plantation progress in UGI areas by MSEs, reports from MSEs on the displacement of chemical fertilisers with compost, reports of fuel wood harvesting from city personnel, and a scientific approach to measuring the growth of peri-urban forests under the guidance of the Project Manager and using best international practices.	Quarterly  Reported annually in DO tab of the GEF PIR	ISWM Technical Officer and UGI Technical Officer with oversight from the Project Manager	Actual weight tickets of MSW delivered to composting facility.  Project MRV reports completed on specific project interventions from the 6 cities, including organic waste diversion from landfills, urban forestry and use of renewable biomass for fuel wood.	Assumption: Continued political commitment to integrate best practices for ISWM and UGI into development planning and implementation.  Assumption: Successful implementation is premised on: (a) waste sorting is effective and results in good-quality compost feedstock; (b) the organic feedstock can be composted and is not contaminated; and (c) farmers and municipal governments agree to use the compost.
	Tonnes of organic waste diverted from landfills for composting	This will be the cumulative weight of organic waste diverted from landfills for composting.	<i>As above on tonnage of waste diverted from landfill</i>	<i>As above</i>	<i>As above but applying only to the ISWM Technical Officer</i>	Actual weight tickets of MSW delivered to composting facility	
	Number of jobs created (gender-disaggregated)	These are the jobs created from the establishment of an enhanced compost value chain, and gender-disaggregated.	Data from the MSEs that are providing jobs	Quarterly	ISWM Technical Officer and UGI Technical Officer with oversight from the Project Manager	BTOR reports by both ISWM and UGI Technical Officers on data collected during monitoring trips to each city.	Project reports are completed on environmental and social impact analysis of project interventions.

<p><b>Outcome 1:</b> Regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting national policy environment for integrating ISWM and UGI within urban systems</p>	<p><b>Indicator 1:</b> Number of transposed standards</p>	<p>These are number of standards that are transposed for use by participating local and regional governments. For each city, there will be 1 standard for ISWM and 1 for UGI</p>	<p>Discussions and meetings with MUDH personnel on the progress of the transposition of the standards</p>	<p>Reported annually in DO tab of the GEF PIR</p>	<p>Project Manager</p>	<p>Documentation for transposed ISWM and UGI standards for 6 cities and 4 regional governments</p>	<p>Assumption: Support for transposed standards received at all levels of government (i.e. federal, regional bureaus and municipalities).</p>
	<p><b>Indicator 2:</b> Number of incentives developed</p>	<p>These will be incentives developed for encouraging source-sorting by households in kebeles.</p>	<p>Discussions and meetings with 6 cities on incentives that could consist of awarding those active in UGI activities (e.g. urban agriculture and tree planting) with free compost (in proportion to how much organic waste they provide to the compost production facilities)</p>	<p>As above</p>	<p>As above</p>	<p>Local government ordinances define incentives for source-sorting of waste at households</p>	
	<p><b>Indicator 3:</b> Number of standards adopted for organic compost</p>	<p>Number of standards adopted for organic compost.</p>	<p>Discussions and meetings with ESA on development and adoption of compost standards</p>	<p>Annually up to Year 2.</p>	<p>As above</p>	<p>Organic compost standards</p>	
<p><b>Outcome 2:</b> A market-based system is developed, and participating micro and small enterprises (MSEs) are supported professionally to ensure financial sustainability of compost production and utilisation</p>	<p><b>Indicator 1:</b> Number of established MSEs in the ISWM-UGI value chain</p>	<p>These established MSEs are operational within the ISWM-UGI value chain.</p>	<p>Discussions and meetings with participating cities on development of ISWM-UGI value chain</p>	<p>Semi-annually</p>	<p>ISWM Technical Officer and UGI Technical Officer with oversight from the Project Manager</p>	<p>Existence of legal MSE business licenses within ISWM-UGI supply chain and access to technical and financing support from the project as well as from micro-finance institutions</p>	<p>Assumption: ISWM and UGI curricula of TVET institutions and local universities and colleges are adopted</p>
	<p><b>Indicator 2:</b> Number of market outlets for compost</p>	<p>This will be for market outlets selling compost generated by municipal composting plants to the public</p>	<p>As above</p>	<p>As above</p>	<p>As above</p>	<p>Long-term contracts between composting MSEs and public entities and private companies for the supply of compost and non-organic recycled waste</p>	

	<b>Indicator 3:</b> Number of agreements	These will be established voluntary carbon offset agreements with private companies to support ISWM and UGI initiatives	Discussions and meetings with MEFCC and private companies with carbon offset agreements.	<i>As above</i>	Project Manager	Official documentation of voluntary offset scheme Registry that will be managed by MEFCC, and agreements to support ISWM and UGI initiatives.	
<b>Project Outcome 3</b> A NAMA is designed and implemented to catalyse transformation of integrated urban systems to generate large emission reductions	<b>Indicator 1:</b> Number of established standardised baselines	These are established standardised baselines for calculating emission reductions that will be generated by ISWM and UGI activities piloted by the project	Meetings with Technical Working Groups	Annually by end of Year 3	ISWM Technical Officer and UGI Technical Officer with oversight from the Project Manager	Documentation of the 3 established standardised baselines and MRV mechanisms including: (i) compost production using the organic fraction of landfill waste; (ii) urban and peri-urban reforestation of degraded land; and (iii) displacement of non-renewable fuel wood with renewable biomass generated by managed forests	Assumption: Availability of reliable and accurate data.
	<b>Indicator 2:</b> Number of mechanisms developed	These are mechanisms developed for MRV of emission reductions from integrated urban systems such as ISWM and UGI	Meetings with Technical Working Groups	Annually	ISWM Technical Officer and UGI Technical Officer with oversight from the Project Manager	Documentation of the 3 established standardised baselines and MRV mechanisms	
	<b>Indicator 3:</b> Number of cities	This is for cities that are to be covered under a registered UNFCCC NAMA for national ISWM/UGI initiatives	Meetings with Technical Working Groups and	Annually	Project Manager	Documented NAMA registration	Assumption: There are local experts with sufficient expertise and understanding of concepts to develop the NAMA

<b>Project Outcome 4</b> Operational urban systems that integrate ISWM and UGI with quantified GHG emission reductions within the NAMA framework	<b>Indicator 1:</b> Number of operational composting plants	There will be at least one operational composting plant in each one of the 6 cities on the project	Physical verification of operational plants	Semi-annually	ISWM Technical Officer	Physical verification of operational plants	
	<b>Indicator 2:</b> Number of degraded sites transformed into green space	Degraded sites transformed into green space can include rehabilitation of open waste dumps, open spaces and riparian corridors	Physical verification of green space transformed.	Semi-annually	UGI Technical Officer	Physical verification of green space transformed.	
	<b>Indicator 3:</b> Number of hectares of reforested land	This will include reforested degraded land supported by compost-grown seedlings produced by nurseries that are peri-urban forestry and forests for fuelwood harvesting	UGI activity will be measured through monitoring of seedling plantation progress in UGI areas by MSEs, reports of fuel wood harvesting and plantation from city personnel.	Annually starting Year 3	UGI Technical Officer	Reports on peri-urban reforestation and firewood plantation programmes in each of the 6 cities	
<b>Mid-term GEF Tracking Tool</b>	N/A	N/A	Standard GEF Tracking Tool available at <a href="http://www.thegef.org">www.thegef.org</a> . Baseline GEF Tracking Tool included in Annex.	After 2 <sup>nd</sup> PIR submitted to GEF	Project consultant	Completed GEF Tracking Tool	
<b>Terminal GEF Tracking Tool</b>	N/A	N/A	Standard GEF Tracking Tool available at <a href="http://www.thegef.org">www.thegef.org</a> . Baseline GEF Tracking Tool included in Annex.	After final PIR submitted to GEF	Project consultant	Completed GEF Tracking Tool	
<b>Mid-term Review</b>	N/A	N/A	To be outlined in MTR inception report	Submitted to GEF same year as 3 <sup>rd</sup> PIR	<i>Independent evaluator</i>	Completed MTR	
<b>Environmental and Social risks and management plans, as relevant.</b>	N/A	N/A	Updated SESP and management plans	Annually	Project Manager UNDP CO	Updated SESP	



## ANNEX C: EVALUATION PLAN

### Evaluation Plan:

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants <sup>105</sup>	Other budget (i.e. travel, site visits etc.)	Budget for translation
Mid-term Review (MTR)	April 2019	July 2019	Mandatory	US\$ 30,800	US\$ 9,200	
Terminal Evaluation	October 2021	November 2021	Mandatory	US\$ 31,600	US\$ 8,400	
<b>Total evaluation budget</b>				US\$ 80,000		

<sup>105</sup> The budget will vary depending on the number of consultants required (for full size projects should be two consultants); the number of project sites to be visited; and other travel related costs. Average # total working days per consultant not including travel is between 22-25 working days.

## ANNEX D: GEF TRACKING TOOL AT BASELINE



### Tracking Tool for Climate Change Mitigation Projects (For CEO Endorsement)

#### Special Notes: reporting on lifetime emissions avoided

**Lifetime direct GHG emissions avoided:** Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made **during the project's supervised implementation period**, totaled over the respective lifetime of the investments.

**Lifetime direct post-project emissions avoided:** Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds.

**Lifetime indirect GHG emissions avoided (top-down and bottom-up):** Indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication.

Please refer to the following references for Calculating GHG Benefits of GEF Projects.

[Manual for Energy Efficiency and Renewable Energy Projects](#)

[Revised Methodology for Calculating Greenhouse Gas Benefits of GEF Energy Efficiency Projects \(Version 1.0\)](#)

[Manual for Transportation Projects](#)

For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years is deemed appropriate. For emission or removal factors (tonnes of CO<sub>2</sub>eq per hectare per year), use IPCC defaults or country specific factors.

General Data	Target at CEO Endorsement	Notes
Project Title	Ethiopian NAMA: Creating Opportunities for Municipalities to Produce and Operationalize Solid waste Transformation (COMPOST)	
GEF ID	9048	
Agency Project ID	5541	
Country	Ethiopia	
Region	AFR	
GEF Agency	UNDP	
Date of Council/CEO Approval	April 28, 2015	Month DD, YYYY (e.g., May 12, 2010)
GEF Grant (US\$)	6,667,123	
Date of submission of the tracking tool		Month DD, YYYY (e.g., May 12, 2010)
Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC?	1	Yes = 1, No = 0
Is the project linked to carbon finance?	1	Yes = 1, No = 0
Cofinancing expected (US\$)	47,112,888	

<b>Objective 4: Transport and Urban Systems</b>		
<b>Please specify if the project targets any of the following areas</b>		
Bus rapid transit		Yes = 1, No = 0
Other mass transit (e.g., light rail, heavy rail, water or other mass transit; excluding regular bus or minibus)		Yes = 1, No = 0
Logistics management		Yes = 1, No = 0
Transport efficiency (e.g., vehicle, fuel, network efficiency)		Yes = 1, No = 0
Non-motorized transport (NMT)		Yes = 1, No = 0
Travel demand management		Yes = 1, No = 0
Comprehensive transport initiatives (Involving the coordination of multiple strategies from different transportation sub-sectors)		Yes = 1, No = 0
Sustainable urban initiatives	1	Yes = 1, No = 0
Policy and regulatory framework	3	0: not an objective/component 1: no policy/regulation/strategy in place 2: policy/regulation/strategy discussed and proposed 3: policy/regulation/strategy proposed but not adopted 4: policy/regulation/strategy adopted but not enforced 5: policy/regulation/strategy enforced
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	4	0: not an objective/component 1: no facility in place 2: facilities discussed and proposed 3: facilities proposed but not operationalized/funded 4: facilities operationalized/funded but have no demand 5: facilities operationalized/funded and have sufficient demand
Capacity building	3	0: not an objective/component 1: no capacity built 2: information disseminated/awareness raised 3: training delivered 4: institutional/human capacity strengthened 5: institutional/human capacity utilized and sustained
Length of public rapid transit (PRT)		km
Length of non-motorized transport (NMT)		km
Number of lower GHG emission vehicles		
Number of people benefiting from the improved transport and urban systems	1,600,000	between 1.65 and 1.97 million persons in 6 target cities and towns
Lifetime direct GHG emissions avoided	2,205,243	tonnes CO2eq (see Special Notes above)
Lifetime direct post-project GHG emissions avoided		tonnes CO2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (bottom-up)	3,307,865	tonnes CO2eq (see Special Notes above)
Lifetime indirect GHG emissions avoided (top-down)	2,366,664	tonnes CO2eq (see Special Notes above)
<b>Objective 5: LULUCF</b>		
<b>Area of activity directly resulting from the project</b>		
Conservation and enhancement of carbon in forests, including agroforestry		ha
Conservation and enhancement of carbon in nonforest lands, including peat land		ha
Avoided deforestation and forest degradation		ha
Afforestation/reforestation	33,309.00	ha
Good management practices developed and adopted		0: not an objective/component 1: no action 2: developing prescriptions for sustainable management 3: development of national standards for certification 4: some of area in project certified 5: over 80% of area in project certified
Carbon stock monitoring system established	3	0: not an objective/component 1: no action 2: mapping of forests and other land areas 3: compilation and analysis of carbon stock information 4: implementation of science based inventory/monitoring system 5: monitoring information database publicly available
Lifetime direct GHG emission avoided	4,540,000	tonnes CO2eq (see Special Notes above)
Lifetime indirect GHG emission avoided	9,080,000	tonnes CO2eq (see Special Notes above)
Lifetime direct carbon sequestration	1,580,000	tonnes CO2eq (see Special Notes above)
Lifetime indirect carbon sequestration	3,160,000	tonnes CO2eq (see Special Notes above)
<b>Objective 6: Enabling Activities</b>		
<b>Please specify the number of Enabling Activities for the project (for a multiple country project, please put the number of countries/assessments)</b>		
National Communication	-	
Technology Needs Assessment	-	
Nationally Appropriate Mitigation Actions	1	
Other	-	
Does the project include Measurement, Reporting and Verification (MRV) activities?	1	Yes = 1, No = 0

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## **ANNEX E: TERMS OF REFERENCE FOR KEY PROJECT POSITIONS**

The proposed terms of reference are only indicative. They are to be further developed in more detail before tendering.

### **Government counterparts**

#### **Project Steering Committee (PSC)**

##### *Duties and responsibilities:*

The Project Steering Committee (PSC) is the principal body supervising project implementation in accordance with UNDP rules and regulations, and referring to the specific objectives and the outcomes of the project with their agreed performance indicators. The main functions of the PSC are:

- General monitoring of project progress in meeting its objectives and outcomes, and ensuring that they continue to be in line with national development objectives;
- Facilitating co-operation between the different Government entities, whose inputs are required for successful implementation of the project, ensuring access to the required information and resolving eventual conflict situations arising during project implementation when trying to meet its outcomes and stated targets;
- Supporting the elaboration, processing and adoption of the required institutional, legal and regulatory changes to support the project objectives, and overcoming the related barriers;
- Facilitating and supporting other measures to minimise the identified risks to project success, remove bottlenecks and resolve eventual conflicts;
- Approval of the annual work plans and progress reports, the first plan being prepared at the outset of project implementation;
- Approval of the project management arrangements; and
- Approval of any amendment to be made in the project strategy that may arise from a change in circumstances, after careful analysis and discussion of the ways to solve problems.

##### *PSC Structure and Reimbursement of Costs*

The PSC will be chaired by the State Minister (or delegate thereof) of MUDH. The PSC will comprise the Ministry of Environment, Forest and Climate Change, the Ministry of Finance and Economic Cooperation, the Ministry of Agriculture, selected representatives from Regional Bureaus, one local project coordinator from each city/town, a representative of the private sector (to be determined), and a representative of MSEs, as well as the Project Manager. If required, representatives of the project stakeholders or other co-financing partners such as AfD and WB can be invited to the PSC meetings at the discretion of the PSC. UNDP will participate as the GEF Implementing Agency. Other members can be invited at the decision of the PSC on an as-needed basis, but taking due regard that the PSC remains sufficiently lean to be operationally effective. The final list of the PSC members will be completed at the outset of project operations and presented in the Inception Report by taking into account the envisaged role of different parties in the PSC. The Project Manager will participate as a non-voting member in the PSC meetings and will also be responsible for compiling a summary report of the discussions and conclusions of each meeting.

The costs of the PSC's work, except the work of the Project Manager, shall be considered as the Government's or other project partners' voluntary in-kind contribution to the project and shall not be paid separately by the project. Members of the PSC are also not eligible to receive any monetary compensation for their work as experts or advisers to the project.

##### *Meetings*

It is suggested that the PSC will meet at least once a year. A tentative schedule of the PSC meetings will be agreed to as a part of the annual work plans, and all representatives of the PSC should be notified again in writing 14 days prior to the agreed date of the meeting. The meeting will be organised provided that the executing agency, UNDP and at least two-thirds of the other members of the PSC can confirm their attendance. The Project Manager shall distribute all materials associated with the meeting agenda at least 5 working days prior to the meeting.

#### **National Programme Director, NPD**

As a representative of the Government and the project's implementing agency, the NPD has the principal responsibility of ensuring that the project is executed in accordance with the Project Document and the UNDP guidelines for nationally-implemented (NIM) projects. The NPD will be the Director, Urban Development, MUDH.

His/her main duties and responsibilities include:

- Coordinating and guiding the work of the Project Manager with the work of the national implementing agency through meetings at regular intervals to receive project progress reports and provide guidance on policy issues;
- Certifying the annual and, as applicable, quarterly work plans, financial reports (Combined Delivery Reports), audit reports and inventory of the equipment, and ensuring their accuracy and consistency with the project document and its agreed amendments;
- Taking the lead in developing links with the relevant authorities at the national, provincial and local levels, and supporting the project in resolving any institutional- or policy-related conflicts that may emerge during its implementation.

### **Local project Staff**

#### **Project Manager – Local consultant (full-time)**

##### *Duties and responsibilities:*

Operational project management in accordance with the Project Document and the UNDP guidelines and procedures for nationally-implemented projects, including:

- General coordination, management and supervision of project implementation;
- Ensuring the delivery of project results and leading the implementation process for the 3 project outcomes;
- Developing the terms of reference for the technical studies required in the project;
- Management of the procurement and the project budget under the supervision of UNDP to ensure timely involvement of local and international experts, organisation of training and public outreach, purchase of required equipment etc., in accordance with UNDP rules and procedures;
- Submission of quarterly progress reports and provision of inputs for the Annual Project Implementation Reviews to the PSC, Executing Agency and UNDP in accordance with the "Monitoring Framework and Evaluation" section of the Project Document;
- Guide and coordinate the review of the Project Results Framework, including:
  - a. Provide technical advice for the revision of performance indicators.
  - b. Identify sources of data, collection methods, who collects data, how often, cost of collection and who analyses the data.
  - c. Facilitate annual review of risks.
- Ensuring effective dissemination of, and access to, information on project activities and results, including regular participation in relevant selected networks;
- Provision of technical inputs in technical assistance outputs of the project;
- Oversight and coordination of the contracts of the international and local consultants working for the project; and
- Ensuring otherwise successful completion of the project in accordance with the stated outcomes and performance indicators summarised in the project's log-frame matrix and within the planned schedule and budget.

##### *Expected Qualifications:*

- Advanced university degree and at least 7 years of professional experience, or a university degree with 10 years of professional experience, in the specific areas the project is dealing with, including solid knowledge of the urban waste and greenery sector in Ethiopia and climate change mitigation (ideally including NAMAs);
- Experience in managing or participating in projects of similar complexity and nature, including a demonstrated capacity to actively explore new, innovative implementation and financing mechanisms to achieve the project objectives;
- Demonstrated experience and success in the engagement of, and working with, the private sector and NGOs, creating partnerships for activities of common interest;
- Good analytical and problem-solving skills and the related ability to adaptively manage with prompt action on the conclusion and recommendations coming out from the project's regular monitoring and self-assessment activities as well as from periodic evaluations;

- Ability and demonstrated success to work in a team, to effectively organise it, and to motivate its members and other project counterparts to effectively work toward the project's objectives and expected outcomes;
- Good communication skills and competence in handling project's external relations at all levels; and
- Fluent knowledge of English;
- Familiarity and prior experience with UNDP and GEF requirements and procedures are considered an asset.

*Allocated Budget: US\$ 54,000*

#### **Administrative Assistant – Local consultant (full-time)**

A project administration assistant will be recruited on a full-time basis to support project implementation, track contracts and budget delivery, liaise with UNDP Ethiopia's Administrative and Finance units to facilitate project implementation, and prepare administrative and financial reports as part of the M&E framework of the project. The following will also be covered:

- Establish the overall results-based M&E strategy in accordance with M&E plans outlined in the project document.
- Design a system for collecting information on project lessons to be used in annual progress meetings.
- Guide and coordinate the review of the Project Results Framework, including:
  - a. Provide technical advice for the revision of performance indicators.
  - b. Identify sources of data, collection methods, who collects data, how often, cost of collection and who analyses the data.
  - c. Facilitate annual review of risks by the PM.
- Prepare reporting formats and support the NPD to prepare the required reports. Guide project task teams in preparing their progress reports and perform quality assurance in accordance with the approved reporting formats. This includes quarterly progress reports, annual project reports, field visit reports, inception reports and ad-hoc technical reports.
- Foster participatory planning and monitoring by advising the training institutions on content for participatory monitoring and evaluation of activities.
- Assist the NPD to collate technical reports and other documents from the project.
- Develop a communication strategy to share the outcomes of the project with stakeholders.

#### *Expected Qualifications:*

- University degree and at least 2 years of professional experience in project management, administration, communication or related field;
- Prior experience with M&E framework for project management;
- Demonstrated accounting skills;
- Advanced computer software knowledge, including database management and accounting software;
- Demonstrated ability to work in a team;
- Good communication skills and competence in handling the project's external relations at all levels; and
- Fluent knowledge of English.

*Allocated Budget: US\$ 36,000*

#### **ISWM Technical Officer – Local consultant (full-time)**

##### *Duties and responsibilities:*

Under the direct supervision of UNDP and the PM, the ISWM Technical Officer will be assigned to assist the PM and stakeholders at the regional and kebele levels in a number of ISWM and composting facility development activities that includes planning, development, monitoring and evaluation of pilot ISWM operations and composting facilities to the coordination and monitoring of scale-up of their operations under the supervision of the PM. S/he will be responsible specifically for:

- Coordination of specific activities with regards to transposing ISWM standards, development of tools and protocols for enforcement instruments, and stakeholder consultations on household waste sorting;
- Coordination of the capacity building programme for potential ISWM MSEs;
- Assistance in identification of market outlets for compost generated by municipal composting facilities that will include public and private sector outlets;
- Provide inputs into the ISWM curriculum in collaboration with project experts and TVET Colleges;

- Monitoring and collection of data from the 6 cities on:
  - The development of waste collection efficiencies, notably the household-level separation of organic waste, and the tonnage of waste diverted from landfill to a composting facility;
  - Compost generation in tonnes produced each month at each composting facility;
  - Sale of compost to public and private enterprises;
- Assistance to the PM in the formulation of NAMA documentation, including inputs into the MRV mechanisms for ISWM-related baselines; and
- Participation in information dissemination activities on ISWM.

*Expected Qualifications:*

- Minimum Master's degree in energy/environment or other relevant academic disciplines from a recognised university;
- Minimum of three (3) years hands-on experience in urban waste sector, where past experience in monitoring and evaluation of projects would be considered an asset;
- Ability to plan, design and implement an effective M&E system for ISWM, the logical framework approach and other strategic planning approaches, training in M&E development and implementation and/or facilitating learning-oriented analysis sessions of ISMW data with multiple stakeholders, data and information analysis and analytical report writing;
- Willingness to undertake regular field visits and interact with different stakeholders, especially primary stakeholders;
- Computer proficiency in MS Office (Word, Excel and PowerPoint) and other common software is a prerequisite. Computer literacy in graphic design software will be appreciated;
- Fluency in both written and spoken English is essential.

*Allocated Budget: US\$ 48,000*

**UGI Technical Officer – Local consultant (full-time)**

*Duties and responsibilities:*

Under the direct supervision of UNDP and the PM, the UGI Technical Officer will be assigned to assist the PM and stakeholders at the regional and kebele levels in UGI development and implementation activities that includes planning, development, monitoring and evaluation of pilot UGI projects, and the coordination and monitoring of UGI areas under the supervision of the PM. S/he will be responsible specifically for:

- Coordination of specific activities with regard to transposing UGI standards, development of tools and protocols for enforcement instruments, and stakeholder consultations on how the improved green spaces are to be used including the harvesting of fuel wood;
- Coordination of capacity building programme for potential MSEs involved with nurseries, tree plantations and urban agriculture;
- Assistance in blending operations of compost with chemical fertiliser in conjunction with ATA;
- Provide inputs into the UGI curriculum in collaboration with project experts and TVET Colleges;
- Monitoring and collection of data from the 6 cities on:
  - The vegetation growth of degraded areas proposed for UGI activities of the project;
  - Progress of seedling plantation in UGI areas, including the amounts of blended compost used during the course of the project;
  - Monitoring of harvesting of fuel wood, growth of peri-urban forests and displacement of chemical fertilisers with compost in pilot UGI areas using best practices and under the guidance of the PM;
- Assistance to PM in the formulation of NAMA documentation, including inputs into the MRV mechanisms for UGI-related baselines and utilising the experience from monitoring UGI activities of the project; and
- Participation in information dissemination activities on UGI.

*Expected Qualifications:*

- Minimum Master's degree in energy/environment or other relevant academic disciplines from a recognised university;
- Minimum of three (3) years hands-on experience in urban green initiatives, where past experience in monitoring and evaluation of projects would be considered an asset;

- Ability to plan, design and implement an effective M&E system for UGI, training in M&E development and implementation and/or facilitating learning-oriented analysis sessions of UGI data with multiple stakeholders, data and information analysis and analytical report writing;
- Willingness to undertake regular field visits and interact with different stakeholders, especially primary stakeholders;
- Computer proficiency in MS Office (Word, Excel and PowerPoint) and other common software is a prerequisite. Computer literacy in graphic design software will be appreciated.
- Fluency in both written and spoken English is essential.

*Allocated Budget: US\$ 48,000*

**Local Project Coordinator – Head of Solid Waste and Beautification Department (or delegate thereof) (part-time)**

In the project management structure shown in **FIGURE 6**, each city administration will nominate an existing staff member as a Local Project Coordinator (LPC). The position of the LPC will not be funded by the COMPOST project but will form part of the in-kind contribution from the local government.

*Duties and responsibilities:*

The LPC will have oversight over the implementation of all elements the COMPOST project at the city/town level. He/she will chair the Technical Committee at the city/town level, and will represent the city/town on the PSC. More specifically, the responsibilities of the Local Project Coordinator will include:

- General coordination, management and supervision of project implementation at the city/town level;
- Support the delivery of project results for the 4 project outcomes;
- Contribute in developing the terms of references for the technical studies required in the project;
- Ensure and coordinate timely release and use of co-financing from city administration for project implementation;
- Provide support to the PMU regarding the management of procurement, especially when sourced at the regional level;
- Provide inputs for drafting of quarterly progress reports;
- Provide guidance based on local expertise to the review of the Project Results Framework, including:
  - a. Provide technical advice for the revision of performance indicators.
  - b. Identify sources of data, collection methods, who collects data, how often, cost of collection and who analyses the data.
  - c. Facilitate annual review of risks relevant at the city/town level.
- Support the effective dissemination of information on project activities and results among regional stakeholders; and
- Provision of technical inputs in technical assistance outputs of the project through chairing of city/town level Technical Committee, and ensuring that the concerns of local stakeholders are addressed by the project;

*Expected Position:*

- It is proposed that the LPC will be the Head of the Solid Waste and Beautification Department (or similar) or a delegate thereof;
- The qualifications of the LPC will be commensurate with this position, as per the scheme of duty established by the local government;
- Notwithstanding the scheme of duty of the LPC, he/she will have the following skills:
  - Experience in managing or participating in projects of similar complexity and nature, including a demonstrated capacity to actively explore innovative implementation to achieve the project objectives;
  - Demonstrated experience and success in the engagement of, and working with, the private sector and NGOs, creating partnerships for activities of common interest;
  - Good analytical and problem-solving skills and the related ability to adaptively manage with prompt action on the conclusion and recommendations coming out from the project’s regular monitoring and self-assessment activities as well as from periodic evaluations;
  - Ability and demonstrated success to work in a team, to effectively organise it, and to motivate its members and other project counterparts to effectively work toward the project’s objectives and expected outcomes;
  - Good communication skills and competence in handling project’s external relations at all levels; and
  - Fluent/good knowledge of English.

*Allocated Budget: Position will be funded as co-financing from each local government.*

## ANNEX F: UNDP SOCIAL AND ENVIRONMENTAL AND SOCIAL SCREENING (SESP)

### Project Information

<b>Project Information</b>	
1. Project Title	Ethiopian Urban NAMA: Creating Opportunities for Municipalities to Produce and Operationalise Solid Waste Transformation (COMPOST)
2. Project Number	PIMS 5194
3. Location (Global/Region/Country)	Ethiopia

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

<b>QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?</b>
<p><b><i>Briefly describe in the space below how the Project mainstreams the human-rights based approach</i></b></p> <p>The objective of the GEF COMPOST project is to promote significantly greater use of Integrated Solid Waste Management (ISWM) and Urban Green Infrastructure (UGI) approaches in 6 Ethiopian cities and towns in alignment with the Government’s national Growth and Transformation Plan II (GTP II) for the urban sector. The project reinforces decentralisation of governance responsibilities to the local level, empowers local communities to manage their waste and biomass resources, and strengthens the capacity of local stakeholders to build partnerships between the public and private sectors. It offers different segments of societal participation in the urban solid waste management and urban greenery infrastructure elements of the project. A participatory and consultative approach has been adopted throughout project preparation.</p> <p>Other ways in which the COMPOST project supports the mainstreaming of a human rights-based approach are:</p> <ul style="list-style-type: none"> <li>• First, the outcomes of the COMPOST project will lead towards the human right of provision of a safe and secure living environment. Through the plantation of urban greenery, the project will strive to improve the livability of urban areas by reducing flood risks, reducing the risks of water scarcities, and mitigating the adverse impacts of urban heat islands. It will also help in reducing the transmission of disease vectors through increased efficiency of urban solid waste collection;</li> <li>• Second, the project outcomes will increase employment opportunities that will reinforce the human right to work and protect against unemployment. This will be achieved through project activities with extensive involvement of numerous stakeholders in urban areas of the project. Their involvement will transfer marketable skill-sets and create employment opportunities for low-income and marginalised persons living in these urban areas. This will include employment opportunities to increase the efficiency of solid waste collection, the management and operation of nurseries, and sustained care of UGI plantations.</li> </ul>
<p><b><i>Briefly describe in the space below how the Project is likely to improve gender equality and women’s empowerment</i></b></p> <p>The COMPOST project will improve gender equality and women’s empowerment through the creation of employment opportunities in ISWM as well as services required for the start-up and operation of nurseries and the plantation of vegetation for UGI initiatives. In most cities involved in the COMPOST project, a significant proportion of MSEs in the business of household waste collection and its delivery to landfills are owned and operated by women. The Government of Ethiopia has developed a Micro and Small Enterprises Development Strategy (MSEDS) for the creation of jobs, and to develop an attitude of entrepreneurship among the youth and women. The use of micro and small scale enterprises (MSEs) to achieve the structural transformation of Ethiopia is very prominent in the GTP and CRGE Strategy. The MSEDS has singled out youth and women as the main cohort of the population to drive the economic growth of Ethiopia through the establishment of MSEs. With GEF financing, women – and, in particular, female-headed MSEs – will be supported to have an active role in ISWM and UGI development and implementation, such as with organic waste sorting at the household level, transport, and the production and marketing of compost; in urban greenery infrastructure, women will participate in tree seedling growth in nurseries using compost, transporting seedlings, planting, management of forest plantations and urban agricultural plots.</p> <p>The COMPOST project is expected to create 744 direct jobs from composting of solid waste alone. At least half of these jobs will be allocated to women.</p>

The generation and increased supplies of compost from MSW will also provide peri-urban agricultural enterprises the opportunity to offset the use of chemical fertilisers, which are costly. Through the partial substitution of chemical fertilisers with compost, low-income and subsistence farmers in peri-urban areas will be able to reduce their input costs. This will enable some of the more vulnerable sectors of this population, mainly women, to generate more income and improve their standard of living.

The COMPOST project will also increase the livability of the participating cities. For vulnerable women living in urban areas, the project will contribute to an improvement in urban living conditions, reduced flood risks, reduced risks of water scarcities, and mitigation of the adverse impacts of urban heat islands.

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

The COMPOST project has as its explicit objective the reduction of greenhouse gas emissions associated with urban waste disposal and management. For instance: (1) by the end of 2021, the avoided CH<sub>4</sub> emissions arising from the diversion of 151,629 tonnes of organic waste from landfills is estimated at 132,321 tCO<sub>2e</sub>; (2) it is expected that approximately 14,658 ha of degraded or deforested urban and peri-urban land will be reforested, resulting in approximately 79,000 tCO<sub>2e</sub> sequestration per year (averaged over a 20-year period); and (3) the project will designate 18,651 ha of land that will be used as firewood plantations to displace 95,120 tonnes of non-renewable biomass each year, resulting in annual emission reductions of ~227,000 tCO<sub>2e</sub> (averaged over 20 years).

The project is aligned with Ethiopia's efforts to mainstream environmental sustainability through its national environmental strategy and policies, notably the Climate Resilient Green Economy (CRGE) policy, and the Ethiopian urban development policy and agricultural policy. The project explicitly addresses two pillars of the flagship Growth and Transformation II (GTP II) Policy, and will build on and, in some cases, support the extension of the Government's official guidelines on composting, forestry, soil conservation, urban waste, crop production and environmental management. The project will also deliver on the Government's international commitments framed in the Intended Nationally Determined Contribution (INDC) to the UNFCCC, specifically: "Improving crop and livestock production practices for greater food security and higher farmer incomes while reducing emissions" and "Protecting and re-establishing forests for their economic and ecosystem services, while sequestering significant amounts of carbon dioxide and increasing the carbon stocks in landscapes".

Through the project's ISWM activities, which will produce 45,500 tonnes of compost annually from the organic fractions of municipal solid waste, the project will improve the sustainability of waste management in cities, and divert significant volumes (193,141 tonnes) of municipal solid waste to composting facilities (151,629 tonnes of organic waste) and inorganic recycling (41,513 tonnes of PET), thereby reducing the dumping of waste in landfills, and reducing the need for additional landfills in urban areas. Through UGI, the project will create demand for the organic fractions of the waste through composting and utilising the compost for the plantation of vegetation in 33,309 ha of urban and peri-urban areas. Further increases in demand for compost and UGI plantations will be facilitated through the project's establishment of a carbon offset market. Plantation of UGI vegetation will help Ethiopia's cities in watershed management, offer greater sustainability in the replenishment of its water resources, and an attenuation of flood risks to urban areas.

**Part B. Identifying and Managing Social and Environmental Risks**

<p><b>QUESTION 2: What are the Potential Social and Environmental Risks?</b></p> <p><i>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.</i></p>	<p><b>QUESTION 3: What is the level of significance of the potential social and environmental risks?</b></p> <p><i>Note: Respond to Questions 4 and 5 below before proceeding to Question 6</i></p>			<p><b>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)?</b></p>
<p><b>Risk Description</b></p>	<p><b>Impact and Probability (1-5)</b></p>	<p><b>Significance (Low, Moderate, High)</b></p>	<p><b>Comments</b></p>	<p><b>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.</b></p>
<p>Loss of Livelihood and economic impoverishment resulting in resistance by marginal groups to their removal from illegally occupied public lands such as riparian corridors, peri-urban forests and urban green spaces.</p>	<p>I = 5 P = 3 or 4 (depending on the city/town)</p> <p>Note: With impact rated as being ‘critical’, the risk will be high regardless of the probability being 3 (moderately likely) or 4 (highly likely)</p>	<p><b>High</b></p>	<p>All cities are experiencing illegal occupation of public lands by marginalised groups that affects the environmental sustainability of the cities (i.e. obstruction of floodplains, illegal harvesting of firewood on public lands, etc.).</p> <p>The UGI principle (see <b>Table L.2</b> in Annex L) concerning the use of Temporary Vacant Land will be used. This states that local authorities will “make use of temporarily vacant land to produce and manage compost and should encourage the involvement of MSEs in its production and sale.”</p>	<p>Adama: There are between 1,500 and 2,000 households<sup>106</sup> illegally occupying land destined for UGI activities within the project boundary. Displacement of these households will lead to a loss of livelihood due to loss of farm land.</p> <p>Bahir Dar: Reforestation will take place along the boundary of Lake Tana, and on degraded lands in the surrounding hilly terrain. There are ~200 households settled illegally on land dedicated to UGI. The municipality will need to provide resettlement plans for households located on these lands which may be either for watershed management or the plantation for fuel wood harvesting.</p> <p>Bishoftu: About 250 illegal settlements (households) have been identified in Bishoftu along the riparian corridors of watercourses that are draining into the 5 lakes around Bishoftu. The municipality will need to provide a proper resettlement plan for these households that are located away from these riparian corridors. In addition, the municipality has plans to reforest lands to the south of the city adjacent to the</p>

<sup>106</sup> It was agreed during a validation meeting with representatives of City Administrations and Municipalities that one household is comprised of 5 persons on average.

				<p>new landfill. Since this area is currently being grazed, reforestation activities will have an impact that needs to be addressed with stakeholders on the land. The representative of the Municipality of Bishoftu reported that dealing with the grazing issue will be have a very high impact on the livelihoods of the illegal settlers if inadequate corrective measures are not taken.</p> <p>Dire Dawa: Approximately 500 illegal households along the riparian corridors in the Dengego area and the public green spaces of the Sabiya area. Since these are already protected areas, the project will need to assist the ULGs on preparing and executing resettlement plans for these illegal settlements. Another alternative approach may be to appoint some of these occupants as custodians of the forest or riparian corridors in return for their commitment to enforce a ban on illegal settlements on public lands, a reasonable supply of firewood for these households or other benefits.</p> <p>Hawassa: Approximately 100 illegal settlements (households) have been identified in Hawassa municipality that are located along riparian corridors and degraded lands that are part of the catchments into Hawassa Lake. Hawassa municipality will need to prepare a resettlement plan for the removal of these illegal settlements</p> <p>Mekelle: About 200 illegal households have been identified in Mekelle located on degraded lands and riparian corridors between the airport and the city centre. Illegal settlers in the area of the quarry site of Mossobo Cement have already been relocated (i.e. not part of Output 1.5 in the COMPOST project) because of pollution. Mekelle municipality will need to have a resettlement plan for the removal of these illegal households.</p> <p>Following the application of UNDP’s SESP, the COMPOST project has been identified as being a high-risk project because of the likelihood of the resettlement and displacement of illegal settlers within the project boundary. In the absence of any national or regional legislation or standard for the resettlement and displacement of illegal settlers, the COMPOST project has been designed to ensure that the</p>
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				<p>project will not result in ‘forced evictions’ that are prohibited by international law. Under Output 1.5, the project will develop a Resettlement Action Plan (RAP) for illegal settlers within its boundary according to UNDP’s Displacement and Resettlement Standard (DRS).</p> <p>The main principles guiding the design of Output 1.5 are:</p> <ul style="list-style-type: none"> <li>- No resettlement to be undertaken until resettlement plans are reviewed by UNDP for consistency with UNDP’s DRS;</li> <li>- Forced evictions will be prohibited;</li> <li>- Appropriate compensation and resettlement assistance will be provided per national laws and regulations as well as UNDP’s SES. This will be on the charge of city administrations and municipalities, and will not involve use of GEF funds.</li> </ul>
<p>Reforestation plans of the 6 cities do not include sufficiently diverse species of vegetation to promote the sustainable management of natural resources.</p>	<p>I = 3 P = 2</p>	<p><b>Moderate</b></p>	<p>Given that there has been past practices of planting eucalyptus, an invasive species, for the purposes of watershed protection, UGI project planners may default to plans for a less diverse forest.</p>	<p>The project will work with the Wonda Genet Forestry College of Hawassa University and the UN-REDD initiative in Ethiopia to determine the most appropriate and diverse species mix of trees and shrubbery to support the various UGI plans for the 6 cities. The use of known alien invasive species will not be used due to their prohibition under requirement 15 of Standard 1.<sup>107</sup></p> <p>Wonda Genet College has been undertaking research on determining the many agro-ecological zones within the varied landscapes of the 6 cities covered by the COMPOST project. The College’s involvement with the project should reduce the risks of reforestation with invasive and inappropriate species.</p> <p>In addition, the species chosen for the harvesting of fuel wood will be done in close consultation with all stakeholders to achieve a basic understanding of sustainable harvesting rates, and the governance of fuel wood harvesting that will ensure a sustainable supply of fuel wood.</p> <p>The UGI activities planned under Outputs 4.2 and 4.3 will be accompanied by Environmental Management Plans detailing</p>

<sup>107</sup> UNDP (2014), *Social and Environmental Standards*, pg. 17.

				the measures to manage any alien species that are fast-growing for the production of renewable biomass or are adapted to anticipated climate change. Further, in the specific case of Dire Dawa, multi-purpose and fruit trees are included in the strategy of the city administration for reforestation.
<p>Areas that are to be reforested may be sensitive to climactic extremes, notably periods of extended drought that some parts of Ethiopia (e.g. Regions in the North and East of the country) have already experienced.</p> <p>During the validation workshop, city representatives provided a classification of cities/towns based on their vulnerabilities to extreme weather events as follows:</p> <p>Mekelle, Dire Dawa and Adama – high vulnerability to droughts</p> <p>Bishoftu, Bahir Dar and Hawassa – low vulnerability to droughts</p>	<p>I=5 P=3</p> <p>I=2 P=2</p>	<p><b>High</b></p> <p><b>Low</b></p>	<p>Reforestation efforts will need to be supported through adequate supplies of compost and water (and fertiliser if deemed necessary), and also plant species that show more resistance to low humidity and high temperatures.</p>	<p>The project will provide training as a part of Output 2.1 to qualified personnel on the nurturing and care of UGI vegetation in peri-urban areas as well as urban areas. Personnel will be trained to recognise climate extremes that may affect newly-planted seedlings as well as young trees and shrubs, and what actions to take that will extend the life of UGI vegetation through these climate extremes. These personnel will be able to transfer their skills into MSEs that provide services for care and nurturing of UGI vegetation.</p> <p>Foresters participating in the validation workshop observed that there are plant species that are known to have higher resistance to extreme weather events. These include, among others: <i>Lantana camara</i>, which can resist extreme droughts; <i>Gravillia robusta</i>; and there is experience in Dire Dawa with species that are drought-resistant.</p> <p>Besides the choice of plant species, a number of techniques will be employed to reduce the impacts of extreme weather events, including:</p> <ul style="list-style-type: none"> <li>• Physical conservation of soil and water that are used to conserve moisture levels;</li> <li>• Watershed management that provides a holistic approach to managing water resources;</li> <li>• Mulching (covering the soil with grass to hold moisture);</li> <li>• Area closure to reduce the impacts of anthropogenic activities (foresters reported that there is evidence that, during extreme weather events, mortality rates are higher in areas that are accessed by human beings compared to areas that are enclosed)</li> </ul> <p>The above approaches will be detailed in the Environmental Management Plans.</p>

Safety risks to local communities related to the construction and operation of composting plants.	I = 2 P = 2	<b>Low</b>	The composting plants in each city/town will be decentralised and be built on previously unoccupied land owned by the local administration or municipality. Hence, the physical infrastructure is expected to be small-scale and lightweight. The decentralised nature of the operation implies that the quantity of waste transported to each site will be relatively small and, therefore, pose little risk to local communities.	The project will develop Environmental Management Plans (EMPs) for the construction and operation of the composting plants in order to ensure that local communities are not inconvenienced by the composting activities.
Exposure of MSEs to waste hazards during waste handling, including waste collection, waste transporting and composting activities.	I = 2 P = 3	<b>Moderate</b>	<p>Since the project is promoting higher efficiencies of solid waste collection as well as the collection of higher volumes of waste, there is a risk that workers who are handling the waste will be more exposed to waste hazards. The probability of this risk is considered moderate given that the mean income of households of these cities is low; as a result, most of the waste generated by these cities is predominantly from food sources and is not related to electronics, chemical products or other hazardous materials.</p> <p>Hazardous waste is mainly related to commercial waste. The COMPOST project will be applicable only at the household level and it will not accept the handling of any hazardous waste. This will be a condition for the</p>	<p>The project will provide training to entrepreneurs and their personnel through TVETs and other participating academic institutions on the occupational safety hazards of waste management and proper handling of municipal solid waste from collection to composting (Outputs 2.1 and 2.5). This should address mitigation of exposure risks of MSE personnel to waste hazards.</p> <p>An important aspect in the design of the COMPOST project is the stepped and slow ramp-up in investments for composting, as shown in <b>TABLE 8</b>. This is due to the need to synchronise the investments with several technical assistance activities such as the development of national standards and QAS for compost, setting up and training of MSEs, operationalising sorting of waste at the household levels, and coordination with UGI activities that will make use of compost. Taking the need to sequence these technical assistance activities, and the need to develop sound knowledge management, a pragmatic investment schedule that has a slower ramp-up in the first two years has been proposed. The sequencing is reflected in the proposed work plan in <b>Annex A</b>.</p> <p>Additional ways in which the impact of waste hazards will be minimised or avoided are:</p> <ul style="list-style-type: none"> <li>• Carrying out sorting of waste by households under Output 1.3 based on the National Urban Solid Waste Management Standards (NUSWMS) that provides guidelines for sorting of waste at the household level; and</li> </ul>

			implementation of the project in the 6 target cities and towns.	<ul style="list-style-type: none"> <li>Using protective equipment by persons handling household waste, which the COMPOST project will insist on as a condition of its financial and technical assistance. MSEs involved in waste handling and composting activities in the project boundary will be audited periodically for their use of protective equipment.</li> </ul> <p>As part of the professionalisation of MSEs involved in the urban solid waste sector, the TVET-certified courses will be updated to include management plans regarding the handling of hazardous wastes.</p>
Food contamination produced in urban agriculture due to contaminated compost	I = 5 P = 2	<b>High</b>	Any contaminated household organic waste will be transferred to compost. If used in urban agriculture, the food crop produced will also be contaminated and this will constitute a health hazard to consumers.	<p>As discussed above, there is a low probability that the household organic waste will be contaminated by hazardous materials due to the socio-economic background of households in the urban areas (see <b>TABLE 5</b>). Also, commercial waste that is the predominant source of hazardous waste falls outside the boundary of the COMPOST project.</p> <p>Further, compost will be used in UGI applications that do not all require the same level of quality. For instance, the highest and food-grade quality waste will be required for the application of compost in urban agriculture, whereas a lower quality compost can be used in afforestation and reforestation projects. The standards and QAS (Output 1.4) will be developed according to compost end-use. A risk mitigation approach built into the COMPOST project is initially to use compost generated from composting of household organic waste in afforestation and reforestation activities.</p> <p>The risk mitigation measures discussed for the previous risk category are also applicable here.</p>
Water supply shortages may hamper growth of UGI vegetation.  While this risk is related to the separate risk due to extreme weather events (presented above), it is treated separately as it relates to the average climate. Water has alternative uses in society and, at fixed quantities, any shortages will invoke decisions related	I = 3 P = 3	<b>Moderate</b>	<p>UGI vegetation will require water during the nurturing stages. Some cities, notably Mekelle, are experiencing severe drought and may not have sufficient water to meet GTP II UGI targets.</p> <p>The water that will be required in composting has been estimated as part of the</p>	The project, in collaboration with the Wonda Genet College of Forestry and Natural Resource in Hawassa and UN-REDD, will select the most appropriate species for UGI initiatives within the 6 cities. An obvious consideration for UGI species to be planted will be to select those that are drought-resistant or have lesser watering requirements. In addition, the project will train UGI practitioners in the methodologies for most effective watering techniques to minimise evaporation and maximise the impact of water to the plant.

<p>to prioritisation of water amongst alternative uses.</p> <p>Representatives of city administrations and municipalities have classified the 6 cities and towns according to 3 categories based on precipitation. The three categories are given in descending order of water shortage (i.e. highest first):</p> <ol style="list-style-type: none"> <li>1. Mekelle – dry highland</li> <li>2. Adama and Dire Dawa – dry lowland</li> <li>3. Bahir Dar, Bishoftu and Hawassa – dry mid-highland</li> </ol>			<p>financial analysis that is discussed in Section 4.5 and <b>Annex O</b>. The total volume of water needed for composting has been estimated at 25,964 m<sup>3</sup> in Year 5 of the project. Because of the stepped investment in composting infrastructure, water use increases proportionally from 5,475 m<sup>3</sup> in Year 1; to 8,068 m<sup>3</sup> in Year 2; to 13,382 m<sup>3</sup> in Year 3 to 19,069 m<sup>3</sup> in Year 4. Representatives of city administrations and municipalities confirmed that these volumes were not significant and can be provided.</p>	<p>The measures to mitigate the impact of water shortages are similar to those used to reduce vulnerability to extreme weather events.</p>
<b>QUESTION 4: What is the overall Project risk categorization?</b>				
<b>Select one (see <a href="#">SESP</a> for guidance)</b>			<b>Comments</b>	
<i>Low Risk</i>			<input type="checkbox"/>	
<i>Moderate Risk</i>			<input type="checkbox"/>	
<i>High Risk</i>			<input checked="" type="checkbox"/>	<p>From the above analysis, the level of significance of the identified social and environmental risks associated with the COMPOST project is considered to be high, which is triggered by the need to relocate and resettle up to 3,250 illegal household settlers (or 16,250 persons). Accordingly, the project has been designed to deal with this high risk, as discussed in Section 3.1.1 in the body of the Project Document. <b>TABLE 5</b>, which presents the risks associated with the COMPOST project, has been updated to include this risk. Moderate risks that also require mitigation actions are ‘exposure and vulnerability to climate variability’ and ‘exposure to hazardous waste’.</p> <p>While the COMPOST project provides a number of mitigating actions to reduce these risks, it will support the Government of Ethiopia and regional governments in developing RAPs according to UNDP’s DRS. These risks will need to be closely</p>

			monitored and evaluated during each annual PIR as well as the mid-term review.
	<b>QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?</b>		
	Check all that apply		<b>Comments</b>
	<i>Principle 1: Human Rights</i>	<input type="checkbox"/>	
	<i>Principle 2: Gender Equality and Women's Empowerment</i>	<input type="checkbox"/>	
	<i>Principle 3: Environmental sustainability</i>	<input type="checkbox"/>	
	<b>1. Biodiversity Conservation and Natural Resource Management</b>	<b>X</b>	<b>Land use changes resulting from UGI initiatives, especially for peri-urban forests:</b> The project will support and ensure the most appropriate species are planted and supported in public and protected areas for watershed management and fuel wood harvesting. Moreover, with respect to fuel wood harvesting, the project will ensure appropriate management of a sustainable fuel wood supply. This includes a capacity building programme for MSEs to enhance their entrepreneurship skills (Output 2.1), incorporation of ISWM and UGI into the curricula of various academic and technical institutions in Ethiopia (Outputs 2.5), and implementation of actual UGI investments totaling 18,651 ha as a proof of concept of the UGI benefits (Outputs 4.2 and 4.3). Also, the fuel wood harvesting rate will be managed to be lower than the increase in the stock of biomass of plantations. Through the creation of a market chain for compost (Outputs 2.3, 2.4 and 2.6), demand for compost will be created as well as efforts towards diversification of species within UGI areas.
	<b>2. Climate Change Mitigation and Adaptation</b>	<b>X</b>	The project will ensure that UGI vegetation species have a strong likelihood of survival through the climate extremes that are currently being experienced in Ethiopia, notably drought.
	<b>3. Community Health, Safety and Working Conditions</b>	<b>X</b>	The project will provide a national standard for compost to minimise hazardous contents being absorbed by UGI vegetation, and training for MSEs involved with waste sorting to the composting of the organic fraction to minimise their exposure to additional occupational safety hazards associated with the management of MSW. This will include Output 1.5, which will develop a national standard for compost, and Output 2.1, which will provide training for MSEs in waste handling. The quality of compost will be monitored to

			ascertain its suitability for use in urban agriculture. Further, the composting plants will be constructed and operated according to Environmental Management Plans that will provide guidance on the different stages of construction and operation. Together with the application of the national standards for compost production, the EMPs will provide guidance on compost site safety during construction and operation, handling of waste and management of odours.
	<b>4. Cultural Heritage</b>	<input type="checkbox"/>	
	<b>5. Displacement and Resettlement</b>	<input checked="" type="checkbox"/>	<p>The project will provide assistance to the ULGs for the use of cadastral maps as a legal basis for removing illegal settlements on public lands (Output 1.2). In addition, the project will implement UGI investments for the purposes of demonstrating UGI benefits (Outputs 4.2 and 4.3), and the subsequent scale-up of these efforts in other urban centres in Ethiopia through the registration of an open-ended NAMA (Outcome 3). Outputs 4.2 and 4.3 will include the preparation and execution of plans for the resettlement of those who have illegally occupied public lands.</p> <p>As discussed above, the COMPOST project has been designed to develop RAPs for the resettlement and displacement of illegal settlers using UNDP's DRS. The project will also re-skill illegal settlers to develop MSEs and participate in the UGI activities of the project for their economic development.</p>
	<b>6. Indigenous peoples</b>	<input type="checkbox"/>	
	<b>7. Pollution prevention and resource efficiency</b>	<input checked="" type="checkbox"/>	<p>The project will provide training to MSEs (Output 2.1) involved with ISWM to ensure proper handling of waste in a manner that minimises pollution emanating from the transport and deposition of waste at a composting site or landfill. Training will also be provided for MSEs involved with UGI in the efficient and effective use of water for the nurturing and care of UGI vegetation.</p>

#### Final Sign Off

<b>Signature</b>	<b>Date</b>	<b>Description</b>
QA Assessor Kidanua Abera, Energy & Low-Carbon Development Analyst, UNDP Ethiopia		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 Samuel Bwalya, UNDP Country Director, Ethiopia		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**

<b>Checklist Potential Social and Environmental Risks</b>		
<b>Principles 1: Human Rights</b>		<b>Answer (Yes/No)</b>
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? <sup>108</sup>	No
3.	Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?	No
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?	No
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?	No
<b>Principle 2: Gender Equality and Women’s Empowerment</b>		
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?	No
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
8.	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? <i>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</i>	No
<b>Principle 3: Environmental Sustainability: Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below</b>		
<b>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management</b>		
1.1	Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?  <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	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

<sup>108</sup> 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.

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?	Yes
1.6	Does the Project involve harvesting of natural forests, plantation development, or reforestation?	Yes
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? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	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? <i>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. 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.</i>	No
<b>Standard 2: Climate Change Mitigation and Adaptation</b>		
2.1	Will the proposed Project result in significant <sup>109</sup> 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)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
<b>Standard 3: Community Health, Safety and Working Conditions</b>		
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)?	No
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, and 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 labor standards (i.e. principles and standards of ILO fundamental conventions)?	No
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
<b>Standard 4: Cultural Heritage</b>		
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)	No
4.2	Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?	No
<b>Standard 5: Displacement and Resettlement</b>		
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? <sup>110</sup>	No
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
<b>Standard 6: Indigenous Peoples</b>		
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)?  <i>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.</i>	No
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

<sup>110</sup> 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.

6.8	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
<b>Standard 7: Pollution Prevention and Resource Efficiency</b>		
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)?	No
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? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i>	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?	Yes

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## **ANNEX I: CAPACITY ASSESSMENT OF MUDH AND HACT MICRO ASSESSMENT**

(Please see the standalone file named 'PIMS 5541 – CCM – Ethiopia – COMPOST – Capacity Assessment MUDH – Annex I.pdf')

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## **ANNEX J: CO-FINANCE LETTERS**

Fourteen co-financing letters have been submitted, from each one of the 6 city administration (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa, and Mekelle); MUDH; ENDA, MUDH (carbon offset scheme); MEFCC; ESA; HoAREC/N; Institute of Sustainable Development; MDLGS; and UNDP.

(These are found in the standalone file named 'PIMS 5541 – CCM – Ethiopia – COMPOST – Co-financing letters – Annex J.pdf')