



# GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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## PART I: PROJECT INFORMATION

Project Title: Ethiopian NAMA: Creating Opportunities for Municipalities to Produce and Operationalize Solid waste Transformation (COMPOST)			
Country(ies):	Ethiopia	GEF Project ID: <sup>1</sup>	9048
GEF Agency(ies):	UNDP	GEF Agency Project ID:	5541
Other Executing Partner(s):	Ministry of Urban Development and Housing(MUDH)	Submission Date:	2 August 2016
GEF Focal Area (s):	Climate Change	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>	Corporate Program: SGP <input type="checkbox"/>	
Name of Parent Program	[if applicable]	Agency Fee (\$)	633,377

### A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES<sup>2</sup>

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
CCM-2 Program 3	Outcome B. Policy, planning and regulatory frameworks foster accelerated low-GHG development and emissions mitigation	GEFTF	2,107,561	7,397,732
CCM-2 Program 3	Outcome C. Financial mechanisms to support GHG reductions are demonstrated and operationalised	GEFTF	1,523,238	18,980,760
CCM-2 Program 4	Outcome A. Accelerated adoption of innovative technologies and management practices for GHG emission reduction and carbon sequestration	GEFTF	2,198,289	13,234,396
CCM-2 Program 4	Outcome B. Policy, planning and regulatory frameworks foster accelerated low-GHG development and emissions mitigation	GEFTF	838,035	7,500,000
<b>Total project costs</b>			6,667,123	47,112,888

### B. PROJECT DESCRIPTION SUMMARY

<b>Project Objective: 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</b>						
Project Components/ Programs	Financing Type <sup>3</sup>	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
1. The enabling framework created and enforced to support ISWM and UGI	TA	The regulatory and legal framework, institutional and coordination mechanisms, and tools are established for supporting the	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	GEFTF	890,000	5,324,243

<sup>1</sup> Project ID number remains the same as the assigned PIF number.

<sup>2</sup> When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

<sup>3</sup> Financing type can be either investment or technical assistance.

		<p>national policy environment for integrating ISWM and UGI within urban systems in 6 selected cities and towns</p>	<p>of best practices for sustainable land management regarding urban greenery, waste management and IUWM;</p> <p>Output 1.3: Incentives for, and promotion of, source-sorting by households in all kebeles in selected municipalities;</p> <p>Output 1.4: An adopted national standard for organic compost with quality assurance systems (QAS) is in place at the regional (sub-national) level;</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 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</p>			
<p>2. The private sector value chain for compost is created and professionalism is promoted to support sustainable production and utilisation of compost</p>	TA	<p>A market-based system is developed and participating Micro &amp; Small Enterprises (MSEs) are supported professionally to ensure the financial sustainability of compost production and utilisation</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;</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>Output 2.3: Market outlets for compost generated by the municipal composting plants through long-term contracts with public (municipalities,</p>	GEFTF	719,878	8,203,340

			<p>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>Output 2.4: Market outlets for the non-organic recycled waste processed by the municipal sorting plant through long-term contracts with recycling firms;</p> <p>Output 2.5: Integrated SWM and UGI Standards in curriculum in education.</p> <p>Output 2.6: An established voluntary carbon offset scheme to support urban and peri-urban reforestation.</p>			
3. Architecture for Nationally Appropriate Mitigation Action (NAMA) development and implementation is established.	TA	A NAMA is designed and implemented to catalyse the transformational capacity of integrated urban systems to generate large emission reductions	<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 3 elements in Output 3.1;</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 future scale-up within Ethiopia.</p>	GEFTF	704,489	4,980,000
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)	Inv	Proof-of-concept urban systems integrating ISWM and UGI are operationalised with quantified GHG emission reductions in a NAMA framework	<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 complement blended chemical fertilizers with compost;</p> <p>Output 4.2: Rehabilitated and cleaned open green spaces and riparian corridors;</p>	GEFTF	4,035,274	28,105,305

			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.			
			Subtotal		6,349,641	46,612,888
			Project Management Cost (PMC) <sup>4</sup>	GEFTF	317,482	500,000
			<b>Total project costs</b>		6,667,123	47,112,888

### C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

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

Sources of Co-financing	Name of Co-financier	Type of Cofinancing	Amount (\$)
Recipient Government	MUDH	Grants	15,810,000
Recipient Government	MUDH	In-kind	5,794,340
Recipient Government	Ethiopian Standards Agency	In-kind	180,000
Recipient Government	Ministry of Environment, Forest and Climate Change (MEFCC)	In-kind	1,653,824
Recipient Government	Urban Local Governments (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa, Mekelle)	Grants	9,900,279
Recipient Government	Urban Local Governments (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa, Mekelle)	In-kind	7,523,426
CSO	ENDA	In-kind	49,500
CSO	HOAREC/N	In-kind	200,000
CSO	ISD	In-kind	47,519
Private Sector	MDLGS	In-kind	200,000
GEF Agency	UNDP	Grants	3,704,000
GEF Agency	UNDP	In-kind	2,050,000
<b>Total Co-financing</b>			47,112,888

### D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee (b) <sup>2</sup>	Total (c)=a+b
UNDP	GEF TF	Ethiopia	Climate Change	(select as applicable)	6,667,123	633,377	7,300,500
<b>Total Grant Resources</b>					6,667,123	633,377	7,300,500

<sup>4</sup> For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D.

## E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS<sup>5</sup>

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>hectares</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>33,309 hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO <sub>2e</sub> mitigated (include both direct and indirect)	8,325,243 metric tons (direct) <sup>6</sup> 15,550,000 metric tons (indirect) <sup>7</sup>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

## F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

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

## PART II: PROJECT JUSTIFICATION

### A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF

<sup>5</sup> Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

<sup>6</sup> The direct emission reductions accrue from the direct investments that GEF-financed, UNDP-implemented COMPOST project will carry out over its 5-year lifetime. These emission reductions arise from alternative SWM using composting of household organic waste, and from UGI activities related to afforestation and reforestation. In addition to carbon sequestration, the UGI initiatives will also generate renewable biomass for thermal energy use. Composting of organic waste will avoid the emission of methane in landfills, and the cumulative avoided emissions is expected to be 2,205,243 tCO<sub>2e</sub> over the 20-year lifetime of composting infrastructure. UGI activities will result in carbon sequestration and avoided emissions from renewable biomass for thermal energy use in the order to 1,580,000 tCO<sub>2e</sub> and 4,540,000 tCO<sub>2e</sub>, respectively, over 20 years.

<sup>7</sup> For UGI, 12.24 million tCO<sub>2e</sub> is assumed to be generated as bottom-up indirect emissions, with a replication factor of 2.0 for the 306,000 tCO<sub>2e</sub> of direct emissions per year over a lifetime investment of 20 years. The bottom-up indirect emission reductions from avoided methane from landfill due to composting are estimated at 3.31 million tCO<sub>2e</sub> over 20 years.

GEF6 CEO Endorsement /Approval Template-Dec2015

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

1. There have been no significant changes to the project design since the PIF stage. Only two changes have been made at the PPG stage to better contextualise the project design. Following the application of UNDP's Social and Environmental Screening Procedure (SESP), which is presented in Annex F in the Project Document, 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>8</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 redesigned to ensure that the project will not result in 'forced evictions'<sup>9</sup> that are prohibited by international law. Under Output 1.5, the project will develop a Resettlement Action Plan for illegal settlers within its boundary according to UNDP's Displacement and Resettlement Standard.
2. The second change in project design involves the removal of the former (i.e. in PIF) Output 4.2 that sought to pilot-test the Fukuoka semi-aerobic technology in the Bishoftu and Hawassa landfills. This change has been carried out because the implementation of the Fukuoka technology in sanitary landfills is now being developed as a fully-fledged, stand-alone (non-GEF) project to be implemented in several cities and towns in Ethiopia. The deletion of this output has also rationalised the COMPOST project to focus solely on compost as the direct link between ISWM and UGI. In this regard, the redesigned project is better aligned with the Environmental Sustainability pillar of the Growth & Transformation Plan (GTP II) of the Ministry of Urban Development & Housing (MUDH). The reduction of the project scope also addresses the comment from the Council Member for Canada (please see Annex B below) that the project design described in the PIF was too ambitious.
3. As one of the world's fastest growing economies, Ethiopia aspires to become a middle-income country by 2025, as detailed in 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). Urbanisation is generating a range of environmental impacts from the perspectives of both ISWM and UGI, the principal ones being:
  - Increasing volumes of solid waste generated in Ethiopian towns and cities:<sup>10</sup> with municipal solid waste (MSW) collected and disposed 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 these areas;
  - 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.

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<sup>8</sup> One household comprises 5 persons on average.

<sup>9</sup> Such displacements can exacerbate poverty and/or create poor living conditions for the individuals and communities 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>10</sup> The baseline study undertaken in 16 cities and towns has shown 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.

4. To support Ethiopia's CRGE vision for sustainable urban green growth and mitigate the aforementioned 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>11</sup>. In spite of a range of strategies and plans promoting urban greenery in Ethiopia,<sup>12</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 only half of the solid waste generated, and have little or no disposal infrastructure in terms of either well-designed and operational landfill sites or disposal through recycling or thermal-oxidation of organic waste. A baseline assessment carried out on solid waste management (SWM) systems in the 6 cities and towns (Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle) included in this GEF project 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>13</sup> The major challenges along the MSW value chain in Ethiopian cities were identified in the PIF and are elaborated in the Project Document in Paragraphs 5 and 6.
5. 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>14</sup> The proposed 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 urban and peri-urban 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. Further details on the rationale for ISWM and UGI in Ethiopian cities can be found in Annex K of the Project Document. In addition to the GoE's CGRE, other applicable legislation and ongoing Government initiatives supportive of UGI and ISWM development in Ethiopian cities can be found in Annex L of the Project Document.
6. The alternative scenario proposed by the COMPOST project addresses the root causes of the problems related to ISWM and UGI, namely: the 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 Ethiopia's second Growth & Transformation Plan (GTP II); and poor coordination of stakeholders to address the underlying issues, leading to sub-optimal management of urban waste and UGI. Annex M of the Project Document provides a detailed analysis of the root causes of the problems related to ISWM and UGI. One of the problems is the efficiency and cost of transporting household waste from secondary waste points to landfills. The COMPOST project will reduce the need for transportation of waste from secondary waste collection points to landfills, thereby alleviating the related technical problem, and also enhance the financial viability of MSW management. Transportation of waste from secondary points to landfills is covered by city administrations/municipalities without any cost recovery as discussed in Annex M of the Project Document. The ultimate goal of the COMPOST project is to deliver the socio-economic and ecological benefits of integrating ISWM and UGI that are discussed in Paragraphs 1 to 7 of the Project Document.
7. The COMPOST project will implement a strategy that will lead to changes that will "promote significantly greater use of ISWM and UGI approaches in Ethiopian cities and towns in alignment with the national Growth and

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<sup>11</sup> This refers to urban and peri-urban tree-planting, urban agriculture and urban green spaces

<sup>12</sup> Ethiopia draft UGI Standards, Ethiopia draft UGI Handbook, Urban Land Development and Management Policy and Strategy, Construction Industry Development Policy.

<sup>13</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.

<sup>14</sup>The Federal Democratic Republic of Ethiopia (2007), *National Adaptation Programme of Action (NAPA) of Ethiopia*.



Transformation Plan for the urban sector”. This strategy will lead to 4 outcomes: i) 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 in 6 selected cities and towns; ii) Outcome 2: 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; iii) Outcome 3: a NAMA is designed and implemented to catalyse the transformational capacity of integrated urban systems to generate large emission reductions; iv) Outcome 4: proof-of-concept urban systems integrating ISWM and UGI are operationalised with quantified GHG emission reductions in a NAMA framework to be implemented in 6 target cities and towns: Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle. As listed in Table 1 below (COMPOST project risks), the project will use only household waste (i.e. commercial and industrial waste is excluded from the project boundary) as a feedstock for compost production. It is estimated that household waste accounts for more than 90% of municipal waste because of the low-level of commercial activities in the 6 target cities/towns.

8. The project will enable GHG reductions through:

- **Avoided methane** production in landfills by annually diverting 151,629 tonnes of organic waste from landfill MSW to produce compost, generating avoided CH<sub>4</sub> emissions equivalent to 132,321 tCO<sub>2e</sub> per year;
- **Urban forestry** through the reforestation of 14,658 ha of degraded or deforested urban and peri-urban land, resulting in approximately 79,000 tCO<sub>2e</sub> sequestration per year;
- **Generation of renewable biomass for fuelwood use** by enabling the displacement of non-renewable biomass with renewable biomass obtained from urban and peri-urban forests (displacing 95,000 tonnes of non-renewable biomass each year), resulting in emission reductions of approximately 227,000 tCO<sub>2e</sub> per year.

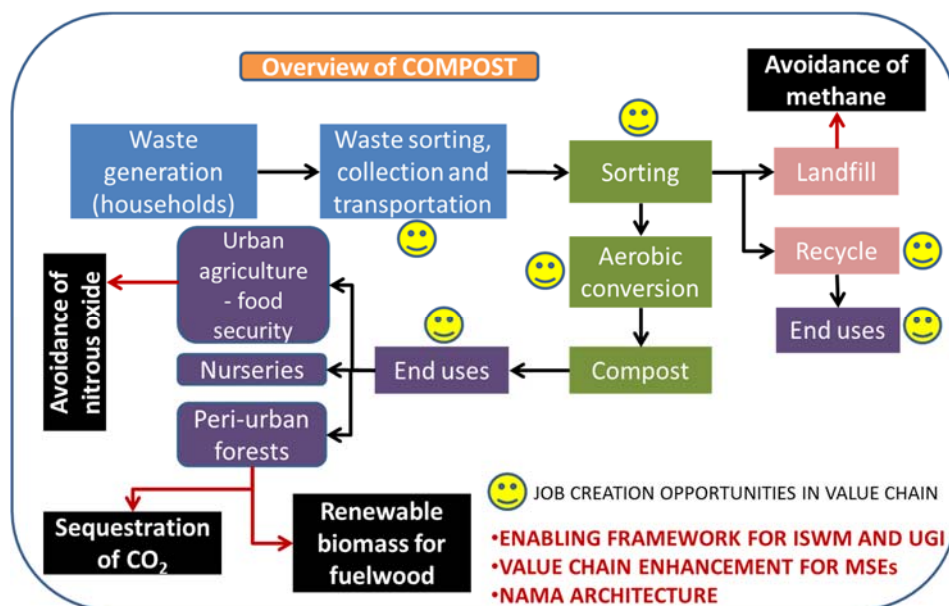
9. The principal driver of sustainability beyond the project lifetime is the establishment of a market ‘pull’ for compost in UGI (urban agriculture, nurseries, inner-city beautification and peri-urban forestry, among others). To maintain the ecological cycle of MSW, municipalities will buy compost for application in their nurseries and for inner-city beautification and peri-urban reforestation. The project will also ensure the sustainability of Outcome 2 by establishing a carbon offset market that will be driven by the private sector (Output 2.6). 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 1. 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. The project will also focus on a critical issue of ensuring 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 Output 1.4, as well as incentivising households under Output 1.3 to carry out segregation of waste at source to minimise contamination of the organic waste.

10. 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;
- Developing a holistic and integrated approach to reducing urban GHG emissions;
- Facilitating access to a carbon offsetting scheme to finance urban forest planting;
- 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; and
- Preparation of an urban NAMA that will support scaling-up of composting and UGI activities to other Ethiopian cities and towns through knowledge management that will compile and disseminate lessons-learned and strengthen replication plans for scaling-up composting in other cities and towns. The scaling-up will also capitalise on the results of the technology assessments that are expected under Output 3.3.



**Figure 1: Structure of the COMPOST project**



A.2. *Child Project?* If this is a child project under a program, describe how the components contribute to the overall program impact.

N/A

A.3. *Stakeholders.* Identify key stakeholders and elaborate on how the key stakeholders engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes  /no )? and indigenous peoples (yes  /no )?<sup>15</sup>

11. A number of project partners have been identified as a part of the project approach to catalyse a multi-stakeholder process (MSP). Since the project is operating at several levels, from the central government to urban households in Ethiopia, the MSP approach will be implemented in a context where there are complementary baseline initiatives with which synergies will be forged to deliver maximum benefits productively (efficiently and effectively) to beneficiaries. Stakeholder groupings include:

- Central government partners including MUDH (the project’s executing partner); the Ministry of Finance and Economic Cooperation (MoFEC), which will be involved in Output 2.2 on establishing a financing mechanism to establish new MSEs in the ISWM-UGI value chain; the Ministry of Environment, Forest and Climate Change (MEFCC) on all project issues related to MRV; the Ministry of Agriculture and Natural Resources (MoANR) on Output 2.3 related to market outlets for compost; the Ethiopian Standards Agency (ESA) on Output 1.4 to develop national standards for organic compost; and the Federal Micro and Small Enterprise Development Agency for Ethiopia (FEMSEDA) on Outputs 2.2 and 2.3;
- Regional or local government partners including the Regional Bureaus for Urban Development and the local city governments of Adama, Bahir Dar, Bishoftu, Dire Dawa, Hawassa and Mekelle, all of which are involved

<sup>15</sup> As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.

with activities related to Outcome 4 as well as Output 1.5 to implement a resettlement action plan for illegal settlers within the project boundaries;

- Civil society organisations, including the Horn of Africa Regional Environmental Centre (HoAREC), the Institute of Sustainable Development, Environmental Development Action (ENDA) – Ethiopian Branch, and the Clean and Green Initiative in Addis Ababa, all of which will provide contributions to training for women and youth-based MSEs on urban greenery and waste management initiatives being supported by the project;
- Academic and training institutes, including the Wonda Genet College of Forestry and Natural Resource of Hawassa University to identify the most suitable plant species for UGI projects in the various agro-ecological zones of Ethiopia. There will be other academic and training institutes based in the 6 target cities that will undertake research and development activities as well as capacity building and information sharing;
- Private sector companies, including Ethiopian Airlines and META Breweries which have expressed an interest in participating in the voluntary carbon offset scheme to address their corporate social responsibilities;
- Donor-supported projects, including those of GIZ, the World Bank and AfD, all of which have had or are currently implementing projects related to UGI and ISWM in Ethiopia;
- Micro-finance institutions, which can provide financial services to MSEs involved in urban solid waste collection at the household level;
- Households generating municipal solid waste, which will be incentivised through project activities to segregate household waste according to established guidelines; and

A detailed listing of stakeholders is available in Table 4 in Section 3.3.1 of the Prodoc.

A.4. *Gender Equality and Women's Empowerment*. Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes  /no)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes  /no)?; and 3) what is the share of women and men direct beneficiaries (women 67%, men 33%)?

12. The purpose of a gender analysis would be to justify to the Government the need to have gender-disaggregated approaches to taking action on gender equality and women's empowerment in the project. Since the Government has been proactive on this issue and has itself singled out the importance of women's empowerment through a Micro and Small Enterprises Development Strategy (MSEDS), the benefits of such an analysis during the PPG were deemed to be limited. However, during implementation, the project will undertake targeted baseline surveys of the six cities to determine gender-disaggregated employment data within SMEs involved with UGI and MSW activities. Relevant indicators have been included in the Project Results Framework to this effect.
13. To support one of the strategic pillars of the GTP II in “promoting women and youth empowerment, ensuring their effective participation in the development and democratisation process, and enabling them to equitably benefit from the outcomes of development”, the Government of Ethiopia has developed the MSEDS for the creation of jobs and to develop an attitude of entrepreneurship among the youth and women; 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.
14. 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 (as detailed in Section 4.5 and Annex O of the Prodoc). 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 the

planting of trees. These jobs will contribute to women increasing their asset base and enabling them to secure a sustainable income and better acceptance in society<sup>16</sup>.

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

15. Table 1 provides an executive summary of the risks identified on the compost project. The full risk log can be found in Table 5 in Section 4.2 of the Project Document.

**Table 1: COMPOST project risks**

Description	Type	Impact & Probability	Mitigation Measures
Lack of Government attention at the national level	Political	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.  Impact – Delay in project implementation  P = 1 I = 2 Risk = 2 (Low)	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.
Lack of Regional support for the project	Political	Probability – Lack of comprehensive understanding of the importance of the project at the regional (sub-national) level, including the linkages between ISWM and UGI.  Impact – Delay in the commencement of the project  P = 2 I = 2 Risk = 4 (medium)	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 Figure 5 in the ProDoc, 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.  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 over the next 5 years were done with the support of the Regional Bureaus.
Lack of town / city administration engagement	Political	Probability – Lack of political support for the implementation of the project activities at the city/town level.  Impact – Delays in the implementaion of the project  P = 1 I = 4 Risk = 4 (Low)	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 Figure 5 in the ProDoc) to safeguard the timely and productive implementation of the proeject activities in cities/towns. The LPCs will represent the interests of the cities and towns in the PSC. The commitment of the cities and towns is further revealed by their cofinancing that relates to their recurrent and capital budgets to 2021.

<sup>16</sup> A conclusion reached by a study by the Bishoftu City Government’s Women and Children Affairs Office  
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<p>Low financial sustainability of compost production</p>	<p>Financial</p>	<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 4.5 and Annex O in the ProDoc) to substantiate investments in composting of urban solid waste generated by households in the 6 target cities and towns. The main costs that are covered in the model are: capital cost of composting plants; equipment and tools to operate the plants; repair and maintenance costs; cost of labour; cost of distributing compost, among others. The investments in composting infrastructure and equipment are estimated at US\$1.08 million over 5 years, while the operation costs are estimated at US\$3.73 million. The cost of labour for the production of compost is US\$71,811 over the 5-year project lifetime.</p> <p>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).</p> <p>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 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 (Annex O in the ProDoc) 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</li> </ul>
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			<p>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.</p> <ul style="list-style-type: none"> <li>Households will be incentivised to carry out sorting of their waste in order to reduce pre-composting waste handling costs and to minimise or avoid contamination of the feedstock for composting (Output 1.3).</li> </ul>
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>	<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 Figure 5 of the ProDoc, 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.</p>
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 Annex F in the ProDoc for more details regarding the risk of contamination and its potential impacts on the health and safety of waste handlers)</p>	<p>There are multiple ways in which this risk will be mitigated. 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>17</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 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</li> </ul>

<sup>17</sup> This was reported by city/town representatives during the Project Document development validation workshop. Please see the SESP given in Annex F.  
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			<p>of protective equipment.</p> <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 mechanisms for waste collection / management may pose a challenge for them to collect service fees	Financial and Operational	<p>Probability – Low level of awareness of the benefits and business opportunities associated with the compost market on both the production and end-use sides causes stakeholders to lose trust in the production of compopst for urban solid waste</p> <p>Impact – Limited sustainability of the project</p> <p>P = 3 I = 3 Risk = 9 (medium to high)</p>	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 volunatry 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	<p>Probability – Difficulty in finding the human resources to implement activities due to insufficient public sector resources and poor training</p> <p>Impact – Delay in the implementation of the project</p> <p>P = 2 I = 2 (Risk = low)</p>	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.
<p>Increase in the frequency and intensity of climate variability (extreme events) risks</p> <p>Mekelle, Dire Dawa and Adama – high vulnerability to droughts</p> <p>Bishoftu, Bahir Dar and Hawassa – low vulnerability to droughts</p>	Environmental	<p>P = 3 I = 5 (Risk = high)</p> <p>P = 2 I = 2 (Risk = low)</p>	<p>The project will take into account city/town-specific climatic variability in the selection and choice of UGI interventions: see Annex P of the Project Document 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 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. Besides the choice of plant species, several techniques will be deployed that reduce the impacts of extreme weather events, including:</p>



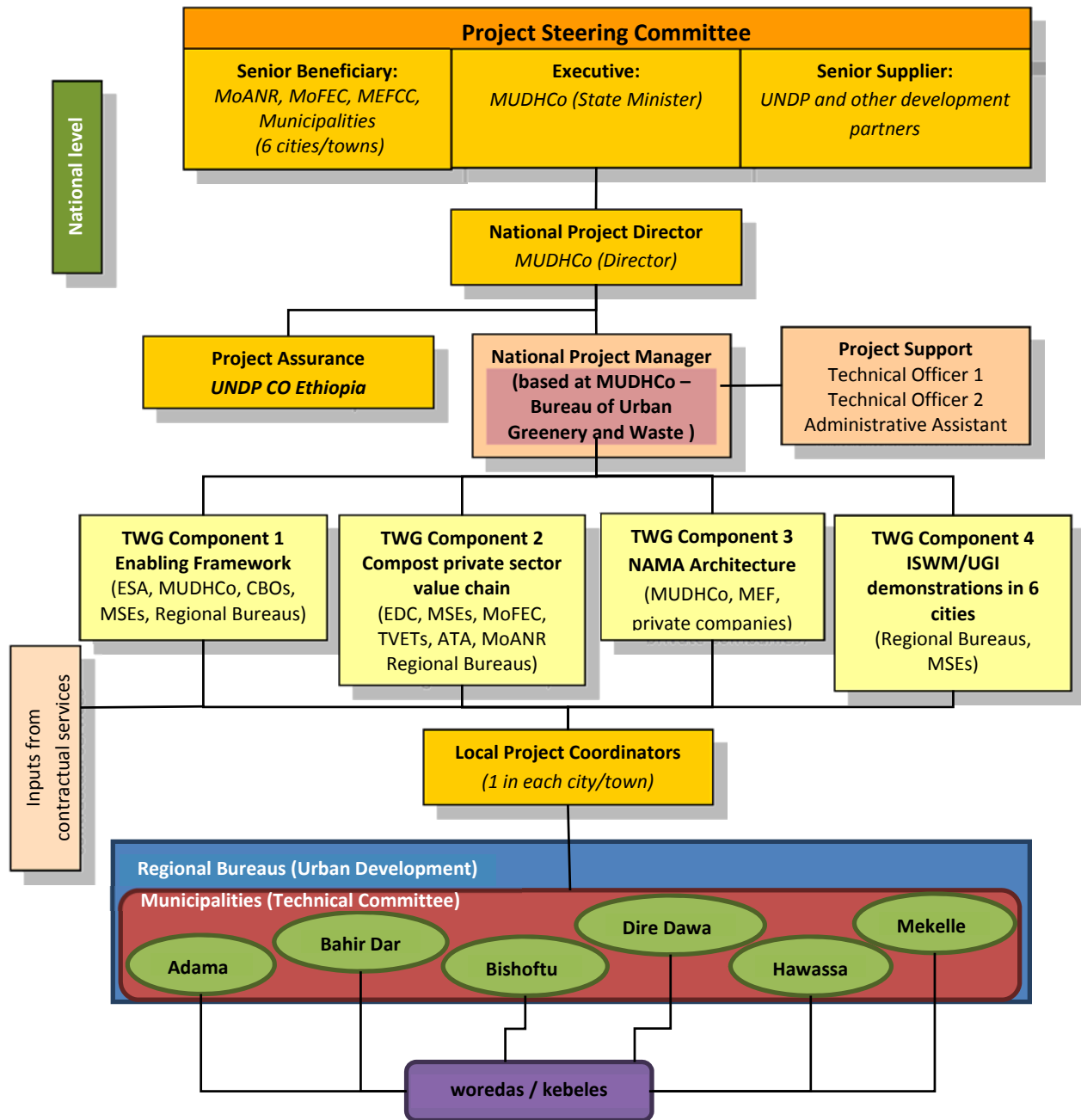
			<ul style="list-style-type: none"> <li>Physical conservation of soil and water that are used to conserve moisture levels;</li> <li>Watershed management that provides a holistic approach to managing water resources;</li> <li>Mulching (covering the soil with grass to hold moisture)</li> <li>Area closure to reduce the impacts of anthropogenic activities</li> </ul>
Challenges in raising local awareness and in changing attitudes to support waste sorting	Operational	<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>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>	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 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.
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>	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.
Displacement and resettlement of illegal settlers from land earmarked for UGI activities within the project boundary	Regulatory and Operational	<p>Impacts Loss of livelihoods and economic opportunities</p> <p>I = 5 P = 3 or 4 (for details please see SESP in ProDoc in Annex F)</p>	<p>Following the application of UNDP's Social and Environmental Screening Procedure (SESP), presented in Annex F of the ProDoc, 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 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 Section 3.1.1 of the Project Document related to Output 1.5.</p>
Safety risks to local communities related to the	Operational	<p>Impacts Physical injuries to members of the local communities</p>	Application of the Social & Environmental Safeguards screening ( <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.

construction and operation of composting plants		P = 2 I = 2 Risk = 4 (low)	<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 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.</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>
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*A.6. Institutional Arrangement and Coordination.* Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

16. 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.
17. 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 (please see paragraphs 25-31) with which synergies must be forged to deliver maximum benefits productively (efficiently and effectively) to beneficiaries. Table 4 of the Project Document provides a list of these partners and their roles to achieve the intended results of the COMPOST project. The project organization structure discussed next takes full cognizance of the contributions of all the project stakeholders.
18. The COMPOST project organisation structure is shown in Figure 2. The Project Steering Committee (PSC) is responsible for making by consensus, management decisions when guidance is required by the Project Manager. To ensure UNDP’s ultimate accountability, PSC decisions will 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 PSC, the final decision shall rest with the UNDP Programme Manager. The terms of reference for the PSC are contained in Annex E of the Project Document. The PSC will be chaired by the State Minister (or delegate thereof) of MUDH, and will consist of members from MEFCC, MoFEC, MoANR, selected representatives from Regional Bureaus, one local project coordinator from each city, 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 be responsible for compiling discussions minutes of each meeting.
19. The Project Manager will run the COMPOST 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 GEF and UNDP, has been completed and submitted to UNDP (including operational closure of the project).



**Figure 2: COMPOST project organisation structure**

20. 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 2 makes use of Local Project Coordinators (LPCs) to make the liaison between the city administrations and the PMU and PSC. Each city will designate an LPC based on the terms of reference given in Annex E of the Project Document, and the position will be part of the in-kind contribution provided by each city. The LPC will have oversight over the implementation of all elements of the COMPOST project at the city level, chair the Technical Committee at the city level, and represent the city on the PSC.

21. The project assurance role will be provided by the Energy and Low-Carbon Development Analyst within the UNDP CO.
22. Given the wide range of stakeholders on the COMPOST project, the project will accommodate a larger number of individuals from target groups to participate in the project implementation through the 4 technical working groups (TWGs) to be established for each project component. 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 2, different target groups are represented in TWGs depending on their involvement in the project. 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.
23. Further, a Technical Committee will be established in each city or town to oversee and coordinate local activities. The Technical Committee will consist of MSEs involved in SWM, composting and UGI, as well as selected representatives from woredas/kebeles.
24. 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 of the ProDoc) 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.
25. 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.
26. 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.
27. The Climate Resilient Green Economy (CRGE) Fast-Track Projects (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 TABLE L.3. 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.
28. 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 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. 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.

29. 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.

30. 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.

31. 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. The ECPI initiative will establish '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.

Additional Information not well elaborated at PIF Stage:

A.7 *Benefits*. Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

32. The project will enable GHG reductions in 3 ways:

- 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. By the EOP, the avoided CH<sub>4</sub> emissions arising from the diversion of 151,629 tonnes of organic waste from landfills reaches 132,321 tCO<sub>2e</sub> per year. The cumulative emission reduction accruing from composting activities over 20 years is 2.21 MtCO<sub>2e</sub>;
- Urban forestry: According to the CDM reforestation project in Humbo, Ethiopia, a planted forest with a 50:50 mix of *Eucalyptus globulus* and *Grevillea robusta* 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. With GEF support, it is expected that around 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;
- Generation of renewable biomass for fuelwood use: To support the sustainable supply of fuel wood and waste as the primary source of energy for Ethiopian households, 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 can be collected from over 18,651 ha of managed urban forests per year, the project will displace 95,000 tonnes of non-renewable biomass each year.<sup>18</sup> This will result in emission reductions of approximately 227,000 tCO<sub>2</sub>e per year.

33. The direct annual emission reductions from UGI initiatives and ISWM that can be expected at the end of the project are approximately 306,000 tCO<sub>2</sub>e and 132,321 tCO<sub>2</sub>e, respectively. By assuming a lifetime of 20 years for compost facilities and managed landfills as well as carbon sequestration from UGI, the direct emission reductions generated by the project will be 8.33 MtCO<sub>2</sub>e, giving a GEF abatement cost of 0.80 US\$/tCO<sub>2</sub>e. 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.
34. 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 fertilizer 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.
35. The benefits of the compost project are further elaborated in the ProDoc in Paragraphs 77-82, and Annex Q which discusses details of the GHG calculations.

*A.8 Knowledge Management.* Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

36. 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.
37. The COMPOST project will have a focus on knowledge management that will support the potential for scaling-up its activities. An awareness campaign in Component 1 will provide communication materials to explain how source-sorting works effectively to produce high-quality compost. 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

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<sup>18</sup> The continued use of non-renewable biomass is addressed under the risk “Illegal fuel wood collection of re-forested 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 a part of Output 1.3. The net result of these efforts will be to minimise leakage from the illegal harvesting of non-renewable biomass from peri-urban reforested areas.



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) has the mandate to develop the MRV framework for the CRGE and 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. 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.

38. 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. Also, the experience of the MSE Green Vision in carrying out windrow composting of household waste for use in urban agriculture has been used in developing the financial analysis given in the Project Document. The incremental investment schedule for compost infrastructure (see Section 4.5 and Annex O of the Project Document) has been established in full cognisance of these lessons learned.

## **B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

**B.1 Consistency with National Priorities.** Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

39. The COMPOST project is consistent with the Government of Ethiopia's aspirations to become a middle income country by 2025, as detailed in its Climate Resilient Green Economy (CRGE) vision and its Growth and Transformation Plan (GTP) II. 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 of Environmental Sustainability within GTP II. Further elaboration of the consistency of the COMPOST project with the Government of Ethiopia's national strategies and plans can be found in Annex L of the Prodoc.
40. The COMPOST project is also consistent with the Government of Ethiopia's:
- Intended Nationally Determined Contribution (INDC), by supporting the formulation of NAMAs as an appropriate instrument for scale-up to achieve intended mitigation and adaptation contributions. Further details can be found in Para L.9 in Annex L of the Project Document;
  - Draft Second National Communication to the UNFCCC (SNC), by focusing on the mitigation of GHGs from the waste sector, identified as a priority sector. Further details can be found in Para L.10 in Annex L of the Project Document;
  - National Adaptation Programme of Action (NAPA, 2007), which emphasises the need for GHG emissions regulation (so as to, inter alia, improve air quality in cities and towns) and prevention of waste from entering water bodies. The NAPA recommends projects such as community-based carbon sequestration, reforestation for fuel in the highlands of Ethiopia, and promotion of home-garden agriculture and agro-forestry which the COMPOST project is supporting. Similarly, the COMPOST project is aligned with the Ethiopia Programme of Adaptation to Climate Change (EPACC), which provides updates to Ethiopia's NAPA. Further details can be found in Para L.10 in Annex L of the Project Document;

- SE4ALL National Action Plan (ENAP), in which one of the priority programmes is the scaling-up of the Improved (solid biomass) Cook Stoves (ICS) Programme to increase access to more efficient and cleaner cooking solutions to households and large biomass consumers, in a sustainable manner. The large-scale dissemination of ICS has the twin objectives of increasing energy (thermal) access while reducing pressure on the requirements for non-renewable biomass (that is linked directly to deforestation and forest degradation). The COMPOST project will complement the ENAP by providing approximately 79,600 tonnes of renewable biomass annually for fuelwood. Further details can be found in Para L.11 in Annex L of the Project Document;
- National Capacity Needs Self-Assessment Action Plan (NCSA - 2006)<sup>19</sup>, which acknowledges a number of capacity gaps that contribute to barriers that prevent Ethiopia from achieving the objectives of its environmental policies. Capacity gaps that are relevant to the COMPOST project include:
  - institutional gaps;
  - gaps related to the development and implementation of environmentally sustainable development management tools such as policies, strategies and laws;
  - poor environmental information and networking;
  - promotion of environmental education and awareness;
  - adoption and adaptation of environmental technologies and best practices;
  - mobilization and channeling of technical and financial resources; and
  - gaps related to community empowerment in environmental management and sustainable livelihoods.

**C. DESCRIBE THE BUDGETED M & E PLAN:**

41. The COMPOST monitoring and evaluation plan is presented below in Table 2.

**Table 2: COMPOST project M&E plan**

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>20</sup> (US\$)		Timeframe
		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>21</sup>	US\$ 10,000 (i.e. total of US\$ 50,000)	Annually
<b>Oversight missions</b>	UNDP-GEF team	None <sup>21</sup>	US\$ 10,000 (i.e. total of US\$ 50,000)	Troubleshooting as needed (assumed annually)

<sup>19</sup> <https://www.thegef.org/gef/sites/thegef.org/files/documents/document/nca-ethiopia-fr-ap.pdf>

<sup>20</sup> Excluding project team staff time and UNDP staff time and travel expenses.

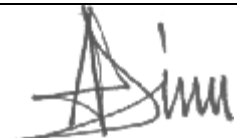
<sup>21</sup> The costs of UNDP Country Office and UNDP-GEF's participation and time are charged to the GEF Agency Fee. GEF6 CEO Endorsement /Approval Template-Dec2015

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget <sup>20</sup> (US\$)		Timeframe
		GEF grant	Co-financing	
Knowledge management (spread around the 4 outcomes)	Project Manager supported by the Administrative Assistant	To be carried out as part of the Annual Work Plan's preparation.	None	On-going
GEF Secretariat learning missions/site visits	Project Manager and UNDP-GEF team	None	None	To be determined
Mid-term GEF Tracking Tool to be updated	Project Manager and External Consultants	To be completed as part of the MTR	None	Before mid-term review mission takes place
Independent Mid-term Review (MTR)	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.
Final GEF Tracking Tool to be updated	Project Manager and External Consultants	To be completed as part of the TE	None	Before terminal evaluation mission takes place
Independent Terminal Evaluation (TE) included in UNDP evaluation plan	UNDP Country Office and Project team and UNDP-GEF team	US\$ 40,000	None	At least three months before operational closure
Monitoring and evaluation of Resettlement Action Plans (RAPs) in 6 cities/towns according to ESMP	UNDP Country Office and project team and UNDP-GEF unit	None	US\$ 20,000 (i.e. total of US\$ 100,000)	Annually
<b>TOTAL indicative COST</b> Excluding project team staff time, and UNDP staff and travel expenses		US\$ 103,500	US\$ 200,000	

### **PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)**

#### **A. GEF Agency(ies) certification**

**This request has been prepared in accordance with GEF policies<sup>22</sup> and procedures and meets the GEF criteria for CEO endorsement under GEF-6.**

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu, UNDP-GEF Executive Coordinator		August 2, 2016	Robert Kelly, RTA, EITT	+251 91250 3306	robert.kelly@undp.org

<sup>22</sup> GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF  
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## ANNEX A: PROJECT RESULTS FRAMEWORK

The complete project result framework can be found in the PROJECT RESULTS FRAMEWORK section of the Project Document on pages 59-62.

<b>Intended Outcome as stated in the UNDAF/Country Programme Results and Resources Framework:</b>					
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.					
<b>Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets:</b>					
UNDAF Outcome 2: By 2020 private-sector driven industrial and service sector growth is increasingly inclusive, sustainable, competitive and job-rich.					
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.					
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.					
<b>Applicable Outputs from the 2014 – 2017 UNDP Strategic Plan:</b>					
Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.					
<b>Applicable Output Indicators from the UNDP Strategic Plan Integrated Results and Resources Framework:</b>					
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.					
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.					
	<b>Objective and Outcome Indicators</b>	<b>Baseline<sup>23</sup></b>	<b>Mid-term Target</b>	<b>End of Project Target</b>	<b>Assumptions<sup>24</sup></b>
<b>Project Objective:</b> 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	Direct project CO <sub>2</sub> emission reductions from the range of interventions proposed by the project, kilotonnes CO <sub>2</sub> <sup>25</sup>	0	50	438 <sup>26</sup>	Continued political commitment to integrate best practices for ISWM and UGI into development planning and implementation.  The successful implementation

<sup>23</sup> Baseline, mid-term and end of project levels must be expressed in the same neutral unit of analysis as the corresponding indicator.

<sup>24</sup> Risks must be outlined in the Feasibility section of this project document.

<sup>25</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>26</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>of the project is premised on the assumptions that: (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.</p> <p>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.</p>
	Cumulative weight of organic waste diverted from landfills for composting, tonnes <sup>27</sup>	0	60,100	404,000	Project MRV reports are completed on specific project interventions from the 6 cities, including organic waste diversion

<sup>27</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%.

					from landfills. High level of uptake of organic waste sorting by households.
	Number of gender-disaggregated jobs created from the establishment of an enhanced compost value chain <sup>28</sup>	0	205 (of which at least 50% for women)	744 (of which at least 50% for women)	Project reports are completed on environmental and social impact analysis of project interventions.
<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	Number of transposed standards (1 SWM and 1 UGI) for use by local and regional governments	0	10 <sup>29</sup>	10	Support for transposed standards received at all levels of government (i.e. federal, regional bureaus and municipalities).  Documentation for transposed ISWM and UGI standards for 6 cities and 4 regional governments.
	Number of households source-sorting domestic waste <sup>30</sup>	0	45% of households in each target city/town (~163,000 households)	90% of households in each target city/town (~355,000 households)	Local government ordinances define incentives for source-sorting of

<sup>28</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>29</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.

<sup>30</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.



					waste at households.
	Tonnes of organic waste produced according to adopted standards	0	~22,500 tonnes	~45,000 tonnes	Organic compost standards <sup>31</sup>
<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	Number of established MSEs in the ISWM-UGI value chain	0	6	12 <sup>32</sup>	Proof of the existence of legal MSE business licences within the ISWM-UGI supply chain. <sup>33</sup>  ISWM and UGI curricula of TVET institutions and local universities and colleges are adopted.
	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>34</sup>	0	US\$ 2.2 million	US\$ 3.6 million	Long-term contracts between composting MSEs and public entities and private companies for the supply of compost and non-organic recycled waste.
	Number of established voluntary carbon offset agreements with private companies to support ISWM and UGI initiatives	0	2	6	Official documentation of voluntary offset scheme Registry that will be managed by

<sup>31</sup> Adoption of compost standards will be completed by Year 2.

<sup>32</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>33</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>34</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.

					MEFCC, and agreements to support ISWM and UGI initiatives.
<b>Outcome 3</b> A NAMA is designed and implemented to catalyse transformation of integrated urban systems to generate large emission reductions	Number of established standardised baselines for calculating emission reductions	0	1	3 <sup>35</sup>	Availability of reliable and accurate data. Documentation of the 3 established standardised baselines and MRV mechanisms.
	Gender-disaggregated population covered by a registered UNFCCC NAMA for national ISWM/UGI initiatives <sup>36</sup>	0	0	Total population of the 6 cities/towns in 2021 (approximately 1.97 million) <sup>37</sup>	NAMA registration is documented.  There are local experts with sufficient expertise and understanding of concepts to develop the NAMA.
<b>Outcome 4</b> Operational urban systems that integrate ISWM and UGI with quantified GHG emission reductions within the NAMA framework	Capacity (tonnes of compost produced per year) of operational composting plants <sup>38</sup>	0	22,500 tonnes	45,000 tonnes	Physical verification of operational plants.
	Area (ha) of degraded sites transformed into green space <sup>39</sup>	0	1	4 <sup>40</sup>	Physical verification of green space transformed.

<sup>35</sup> The NAMA will be developed and registered in the second half of the project. It will therefore cover the entire population of the 6 target urban centres disaggregated by gender based on the demographic statistics generated by the 6 municipalities or city administrations.

<sup>36</sup> This indicator will be measured as the male and female population of each of the 6 cities.

<sup>37</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>38</sup> Composting plants will be modular and their capacities will be scaled up in proportion of compost produced.

<sup>39</sup> Including rehabilitation of open waste dumps, open spaces and riparian corridors.

<sup>40</sup> Assuming rehabilitation of the open waste dump located in Bishoftu into green space.

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	Number of hectares of reforested degraded land supported by compost-grown seedlings produced by nurseries	0	15,500	33,309	Reports on peri-urban reforestation and firewood plantation programmes in each of the 6 cities.
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## ANNEX B: RESPONSES TO PROJECT REVIEWS

Several of the issues identified by the GEFSec at the PIF stage were cleared on 27 March 2015. There were a few issues that needed to be addressed during the PPG, and the table below provides the responses to these outstanding issues.

GEFSEC Review Comments	Response
Project design: 4(a) Please ensure that there is no duplication of efforts with regards to these projects in the cities of Adama, Bishoftu, Dire Dawa and Hawassa.	The CRGE Fast Track projects mentioned in Table L.1 in the Project Document were implemented during 2010-2015. Hence, there is no overlap between these projects and the COMPOST project. Moreover, the lessons learned from the CRGE Fast Track projects will be used during the implementation of the UGI initiatives of the COMPOST project.
Project design: 5(e) By CEO Endorsement, please provide a thorough analysis of GHG emissions reductions targets, both direct and indirect.	<p>At the end of its lifetime, the COMPOST project will generate direct annual emission reductions from UGI initiatives of 306,000 tCO<sub>2</sub>e from ISWM equal to approximately 306,000 and 132,321 tCO<sub>2</sub>e 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 management, 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>2</sub>e, at a GEF abatement cost of 0.80 US\$/tCO<sub>2</sub>e.</p> <p>The lifetime indirect GHG emission reduction accruing from composting activities has been estimated at 898,000 tCO<sub>2</sub>e.</p> <p>Please see Section 3.2 and Annex Q of the Project Document for detailed calculations of global environmental benefits of the project.</p>

Comments were received from three GEF Council Members, namely Germany, France, and Canada. Please note that there are several overlaps between these comments and those made by the STAP and the GEF Secretariat, and where these occur, the reader is referred to the responses in the relevant tables in this annex.

GEF Council Review Comments	Response
<p><b>Germany:</b> Germany welcomes the proposal from Ethiopia to address solid-waste and peri-urban land management deficiencies in this ambitious project covering six cities and towns. Responses to the constructive suggestions from Germany are given below.</p> <p>The problems and challenges addressed and the solutions proposed are very much comparable to the waste management situation in other developing countries. Given the fact that waste management in most countries is a sector that would need heavy subsidies, but has often very low priority compared to health, education, transport or energy (other sectors with responsibility on the local level of governance), the estimated/proposed financial contributions from national and subnational entities seem to be very high and their probability would need to be assessed. Additionally, in many projects income generation from waste products like compost and recyclables is often overestimated. Germany hence suggests assessing if this is the fact in this case as well.</p>	<p>The co-financing proposed by the Ministry of Urban Development and Housing (MUDH) and the municipalities are supported by the co-financing given in Annex J in the Project Document, and either the recurrent or capital budgets of these institutions over the 5-year period of the GTP II (which is squarely aligned with the lifetime of the COMPOST project). The high amounts of co-financing demonstrate the goodwill and strong backing from national and municipal levels of government for the COMPOST program. As a result, as indicated in Table 1, there is a low risk of lack of national support to sustain urban development. Conversely, there is a risk that increasing poverty may challenge the municipalities in collecting waste management service fees. The project will mitigate this risk by providing capacity reinforcement to the cities and municipalities to be able to perform annual budgeting and accounting for all necessary measures in the COMPOST project. Furthermore, the project will reinforce the capacities of municipalities to access climate finance.</p>

through the national voluntary carbon offset scheme that is planned under Output 2.6. The setting up of the voluntary carbon offset scheme has the strong political support of MUDH, which has dedicated US\$2 million for its establishment and operationalisation (please see letter of co-financing in Annex J of the Project Document).

Detailed baseline assessments and ground-truthing activities have been carried out during the design and conceptualisation of the Project Document. Concerning the income generation capacity from compost and recyclables, the following are to be noted:

- Detailed financial analysis (section 4.5 and Annex O in Project Document) has revealed that compost is financially attractive at a market price of ~0.6 ETB cents/kg, whereas municipalities are currently purchasing compost for UGI activities at 1 ETB / kg,
- The other segregated waste streams such as PET and metals can be sold for generating household revenues. In Bahir Dar, for example, individuals are paid 70 ETB cents for a clean 1 litre PET bottle or 30 ETB cents for a clean half litre PET bottle. 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 households through selling of clean dry recyclable wastes (see paragraph 35 in the Project Document).

Risk management: Germany seeks further clarification on the specific barriers to designating land for Integrated Solid Waste Management (ISWM) and Urban Green Infrastructure (UGI). Does the government possess land titles for designation areas or will this likely be a point of dispute?

The current land ownership legislation in Ethiopia mitigates this risk. 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>41</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 survey of the beneficiary cities/towns, city development/master plans must be reinforced to protect against violations.<sup>42</sup> Urban land is not properly utilised as per the plans due to an increase in illegal holdings.<sup>43</sup> Green areas, river banks and open spaces intended for public services are occupied without permission. The Government of Ethiopia is currently revising the Proclamation that governs illegal land holding, after which cities such as Mekele and Dire Dawa will develop their own codes and enforcement systems. To further ensure that land management plans are sustainable, cities and towns will receive GEF financing to develop cadastral maps that clearly denote areas legally reserved for UGI/ISWM. The maps will be posted and made public record and serve as a means to deter illegal development. UGI teams will be able 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 enforced further by building the capacities of municipalities to monitor and publicise the benefits of urban greenery so that they can secure

<sup>41</sup> Please see article 40 of the Constitution of Ethiopia at [http://www.servat.unibe.ch/icl/et00000\\_.html](http://www.servat.unibe.ch/icl/et00000_.html) - accessed 20 May 2015.

<sup>42</sup> Responses to city survey on UGI by Mekele Municipality.

<sup>43</sup> Ethiopian Urban Land Development and Management Policy and Strategy.

	<p>local buy-in and deter unsustainable development.</p> <p>Another closely related issue is the presence of illegal settlers on land earmarked for UGI activities within the project boundary. The UNDP Social &amp; Environmental Safeguards analysis (Annex F of the Project Document) has revealed that the COMPOST project poses a high risk with regard to the resettlement of the illegal settlers. Consequently, Component 1 of the project has been redesigned to include a new output (Output 1.5) entitled “<i>A Resettlement Action Plan for illegal settlers within the project boundary according to UNDP’s Displacement and Resettlement Standard.</i>” One of the mitigation actions proposed to counter this risk is to incorporate the illegal settlers in the project by providing 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><b>Risk Management:</b> In order to manage the risk of illegal harvesting of reforested lands, the project may consider a community-forestry approach, such as the one used with success in Honduras<sup>44</sup>, and that makes the communities abutting the reforested lands key players in the land management through the granting of land concessions.</p>	<p>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>45</sup> For example, MSEs are organised to protect forests with proper mowing and promoting grass sales, apiculture and fodder production as income-generation schemes. Clear guidance has been received from the highest political level of the Ministry of Urban Development and Housing that the COMPOST project should create jobs through MSEs. Consequently, the project will continue to use such a collaborative and decentralised approach as much as is practicable. 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.</p>
<p><b>Methane from Composting:</b> It is important to note that composting can also result in methane gas production if not managed correctly, i.e. by regular turning of the compost to provide oxygen and/or introduction of living organisms, such as worms, to promote aerobic decomposition.</p>	<p>This is mitigated in two ways in the project design. First, the windrow composting technique that is being proposed, and that is being used by the MSE Green Vision in Bahir Dar and has been demonstrated in many developing countries to work well, is a technology that reduces the risk of such negative emissions occurring. Second, it is pointed out that the GEF-financed project integrates capacity building activities that will provide expert hands-on training on the use of equipment and techniques used to produce compost, among others. MSEs that will be involved in composting activities will first receive certified training from TVET colleges and courses that will be tailored to supporting the application of the newly adopted National Solid Waste Management Standards. Please refer to the analysis of the integration of UGI and SWM Standards in TVET trainings in Section 3.1.2 (Output 2.5) in the Project Document, and measures to increase the professionalism and entrepreneurship of MSEs under Output 2.1 (Section 3.1.2 in Project Document).</p>
<p><b>GHG Emissions, NAMA and MRV:</b> The PIF states that more work will be done on estimating emissions reductions during the preparation of the final project documents. At this time, it is also recommended to set up the MRV system, as this will help determine what information is needed to prepare the NAMA and track progress on emissions.</p>	<p><b>GHG Emissions:</b> Please see the response to the GEFSec Review Comment 5(e) in the previous table.</p> <p><b>MRV:</b> Component 3 has two outputs dedicated to the measurement, reporting and verification of GHG emission reductions as follows:</p> <ul style="list-style-type: none"> <li>• Output 3.1: Established standardised UGI and ISWM baselines for calculating emission reductions.</li> <li>• Output 3.2: Developed MRV mechanisms for each of the 3</li> </ul>

<sup>44</sup> See Report (Pdf): <http://prorena.wikispaces.com/file/view/Modelo+de+Gesti%C3%B3n+Forester%C3%ADa+Comunitaria.pdf>

<sup>45</sup> Responses to city survey on UGI by Mekele Municipality  
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	<p>elements in Output 3.1.</p> <p>Concerning Output 3.1, 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>46</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>47</sup></p> <p>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 Ethiopia's Cities Prosperity Index (ECPI) so that the COMPOST project can build on GHG emissions data housed in the ECPI's urban observatories (see Annex L in the Project Document that gives details of baseline initiatives). The operationalisation of the national voluntary carbon offset scheme will depend on the MRV system, which will be fully integrated in the broader CRGE M&amp;E framework at the national level.</p>
<p>Non-Organic Waste: The focus here is only on the portion of organic waste that will be diverted from landfills. The PIF states that the other 25% of waste that is non-organic will also be diverted. What are the plans for managing non-organic waste?</p>	<p>Recycling of non-organic waste is an integral part of IWSM, and is addressed by the COMPOST Project in Output 2.4. Activities under this Output include the recycling of non-organic waste to create jobs, which is a key priority for the Government. As discussed under suggestion 1 above, markets already exist for dry recyclables.</p>
<p>Sanitary Landfills: The two sanitary landfills will necessarily need organic waste to function as designed. Please clarify that organic waste streams are not being diverted from the two landfills in favor of composting.</p>	<p>The project design already addresses this potential risk in the following ways: (1) the sanitary landfill in Bishoftu has not been operational to date since the local authority lacks the equipment to manage the landfill as a sanitary one. Also, the sanitary landfill is not fitted with landfill gas capture equipment. Consequently, recycling of waste that is otherwise being dumped in the open will provide a tangible solution to a prevailing environmental and health hazard; (2) the other sanitary landfills that are mentioned in the PIF (Adama and Hawassa) are, in fact, operated as semi-open dump waste disposal sites with corresponding social and environmental problems. Similarly, it is desirable to divert organic waste from these sites for composting.</p>
<p>Project Management: The project seems almost unwieldy in terms of the large number of stakeholders / contributors / collaborators, which will require very clear role definitions. Germany recommends to include further information on how the project management will look like, e.g. with regular stakeholder meetings, a central coordinator, etc.</p>	<p>The contributions, including roles and responsibilities, of the project partners are well described in Section 3.3.1 in the Project Document (please see Table 4). Further, an institutional framework that is illustrated in Figure 5 in the Project Document has been designed together with all the project stakeholders for linking the federal, regional and city-level administrations. The main elements of the management structure are (please see Section 5 in the Project Document for more details):</p> <ul style="list-style-type: none"> <li>• The <b>Project Steering Committee</b> is responsible for making 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 will 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</li> </ul>

<sup>46</sup><http://icleiusa.org/publications/recycling-composting-emissions-protocol/>.

<sup>47</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).



	<p>consensus cannot be reached within the Steering Committee, the final decision shall rest with the UNDP Programme Manager.</p> <ul style="list-style-type: none"> <li>• The <b>Project Manager</b> will run the project on a day-to-day basis on behalf of the Implementing Partner within the constraints laid down by the Board.</li> <li>• 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 <b>Error! Reference source not found.</b> makes use of <b>Local Project Coordinators</b> (LPCs) to make the liaison between the city administrations and the PMU/PSC. 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.</li> </ul> <p>The terms of references for the various parties are contained in <b>Annex E</b> in the Project Document.</p>
<p><b>France:</b> France supports this proposal but believes it could be substantially improved on the issues identified, through a better anticipation of a number of risks and a change in some assumptions which realization is not certain. The responses below indicate how these issues have been addressed in the design and conceptualisation of the COMPOST project through a robust risk management approach.</p>	
<p>The management of municipal solid waste has received a lot of attention in recent years, with the background idea that household waste may cease to represent a cost and become a source of income. Recovery for energy purposes has notably the wind in the sail (ex: incinerator built in direct contracting in Addis Ababa for 120 MUS\$ with strong uncertainties on the exploitation phase or environmental issues). In this sense, upgrading to purposes of compost can be an alternative less costly and less risky.</p> <p>The implementation of this program (ex: creation of compost units; semi-anaerobic treatment pond on landfills) will necessarily face a set of challenges commonly seen on projects of this nature: availability of a land which are appropriate in terms of surface and location, local capacity to ensure maintenance operations, financing of operating costs in the long-term. In connection with these elements, arises naturally for composting activities several questions:</p> <ul style="list-style-type: none"> <li>▪ effectiveness the primary collection</li> <li>▪ selective nature (to distinguish organic from other waste).</li> </ul> <p>These are two important factors, both for the quantity and quality of the finished product (ex: poorly mastered, a compost presents a health risk, especially when used for peri-urban agriculture). The document does not answer fully satisfactorily to these questions.</p>	<p>These supportive comments from France are kindly acknowledged and they form foundational aspects of the design of the COMPOST project. It needs to be qualified that while waste-to-energy may be favourable in Addis Ababa, the same is not applicable in the cities and towns targeted in the COMPOST project. This is mainly because of the sizes of the economies in these cities and towns do not compare with that of Addis Ababa. This makes the choice of composting more prevalent, and the necessity to duly acknowledge and address the risks discussed below.</p> <p>The health and safety risks posed by waste handling, and the risk related to the contamination of the organic feedstock used for composting, have been identified as risks that need to be managed. The risks are detailed in Table 5 in Section 4.1 of the Project Document, and also in UNDP’s Social &amp; Environmental Safeguards detailed in Annex F of the Project Document. The ways in which the two risks are mitigated are discussed in turn:</p> <p><u>Adverse risk to health and safety:</u> 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 implementation of the project in the 6 target cities and towns.</p> <p>The project will provide training to entrepreneurs and their personnel</p>

through TVET colleges 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 will address mitigation of exposure risks of MSE personnel to waste hazards.

An important aspect in the design of the COMPOST project is the stepped and slow ramp-up in investments for composting, as shown in Error! Reference source not found. in the Project Document. This is due to the need to synchronise the investment 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 **Annex A** of the Project Document.

Adverse risk of feedstock contamination: There are multiple ways in which this risk will be mitigated.

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>48</sup>

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.

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 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 in the COMPOST project is initially to use compost generated from composting of household organic waste in afforestation and reforestation activities.

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.

Additional ways in which the impact of waste hazards (including

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<sup>48</sup> This was reported by city/town representatives during the Project Document development validation workshop. Please see the SESP given in Annex F in the ProDoc.  
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	<p>health and safety and contamination) 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>
<p>In terms of economic efficiency, the assertion of the potential power of substitution of the compost to chemical fertilizer imports needs to be supported. It should be noted that, in the case of the municipality of Addis Ababa that AFD supports, composting option had been rejected, both for questions of costs (capital expenditures and operation expenditures), skills (accompany the maintenance operation of such units when the 'basic' sectors are not satisfied may seem somewhat illusory ex: improved institutional arrangements; efficiency of collection and appropriate management of landfill areas.) but also market opportunities.</p>	<p>This comment from the Government of France prompted the project proponents to develop a detailed financial model to test the financial viability of the COMPOST project, which it should be recalled is building on existing baseline activities such as the MSE Green Vision in Bahir Dar (composting using household waste that is used in urban agriculture) and the composting activities of Soil &amp; More in the region of Zeway involving the composting of waste emanating from the horticulture industry. The details of the financial analysis are discussed in Section 4.5 and Annex O in the Project Document. The model includes all the parameters that are highlighted as being material by the Government of France. The financial analysis shows that the proponents' proposal for composting is financially sound, as summarised below.</p> <p>Under the (realistic) 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 guideline)</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 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 (Annex O in the Project Document) 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 shed, 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 handling costs and to minimise or avoid contamination of the feedstock for composting (Output 1.3).</li> </ul>
<p>The presentation of previous experiences can be considered to be somewhat "embellished":</p> <ul style="list-style-type: none"> <li>▪ The storage infrastructure of non-hazardous waste (ISDND) of Bishoftu (30 km south of Addis Ababa), in the frame of ULGDP I World Bank funding project, is not operated nearly two years after the delivery, because of the lack of sufficient skills in the municipal services of the locality. However, the present program proposes to support the creation of a compost unit and the rehabilitation of the old landfill;</li> <li>▪ Similarly, the experience led by HoA – REC, on the rehabilitated part of the former Addis Ababa, of methane valorization is still not functional, three years after the validation of the methodology for access to Carbon scheme (oversized initially device);</li> <li>▪ In the same way, the valorization of old landfills for green and recreational areas is questionable. According to the legislation, especially European, old landfills are classified sites and inaccessible to the public. If there are successful experiences in the field (ex: Cairo), these projects have been conducted sometimes several decades after the close of the landfill, once the biological activities are "stabilized";</li> <li>▪ Finally, it appears from local discussions that the ISDND entered into operation five years ago is today operated as a simple landfill. Finally, it appears from local discussions that the ISDND entered into operation five years ago is today</li> </ul>	<p>The proponents of the COMPOST project are thankful to the Government of France for pointing out these experiences. This issue is similar to issues 1 and 2 raised by STAP in the table below.</p> <p>It is believed that it is exactly because of these failures that the proposed low-technology approach in the COMPOST project, supported by both financial and technical assistance, is distinctive and responds better to the level of institutional and human capacity development evident in the target cities and towns. Please see the responses to STAP comments 1 and 2 in the table below for more details.</p>

<p>operated as a simple landfill. Here too, the program foresees to accompany the creation of a unit of compost and the rehabilitation of the old landfill.</p>	
<p>The mobilization of the private sector in Ethiopia tends to take longer than expected and economic development is led by the public sector. The component 2 of the program is fully focused on structuring the private sector. However, municipalities and public structures are identified as the first market (purchase of compost for green areas).</p>	<p>The private sector is involved in the project through the establishment of MSEs in the compost value chain. It is worth noting that MSEs are already involved in door-to-door waste collection and disposal in all of the 6 target cities and towns. Also, the promotion of MSEs in the COMPOST project is squarely aligned with the Government's strategy for gender-differentiated job creation through MSEs.</p> <p>Please see the complementary response to STAP comment 2 in the table below concerning the private sector.</p> <p>The use of a public-private partnership is a strength of the COMPOST project, and is one that exists in the urban SWM sector and UGI. Please see the response to STAP comment 11 given in the next table for a more detailed discussion.</p>
<p>Financing plan : the monetary valuation of 'contributions in kind' should be specified, since they represent a substantial part of the proposed funding plan: after quick calculation, 13.9 MUSD out of a total of 43.4 MUSD, which means contributions in kind representing one third of the budget.</p>	<p>The quantified contributions from each project partner are given in the form of 'cash' or 'in-kind' contributions. Annex J in the Project Document lists all the letters of co-financing and the form in which the funding is provided.</p>
<p>Coordination: we support the call for coordination, but if the Agence Française de Développement has taken time to receive the UNDP consultant who travelled to Addis Ababa late last December to draft this proposal, they have not heard of the project since (the public administration neither) until this proposed document. The coordination principle could be more concretely implemented.</p>	<p>The proponents acknowledge the concern of AfD, and are thankful for its contributions via constructive feedback on the project design.</p> <p>During the meeting with the representative of AfD that was held during the initial field mission (October 2015), the designers of the COMPOST project were informed that the financial and technical support of AfD was limited to the City of Addis Ababa, and that it was unlikely that AfD would continue its assistance to the Government of Ethiopia in the urban solid waste sector. In this respect, and because of the decentralized, regional orientation of the project, subsequent field missions and stakeholder engagements were carried out predominantly in the 6 target cities and towns.</p> <p>AfD was invited to participate in the multi-stakeholder validation workshop that was held in 3 February 2016 in Addis Ababa. UNDP and MUDH welcome the ongoing support of AfD should AfD wish to participate in, or advise, the COMPOST project.</p>
<p><b>Canada: Canada supports this project, and its concerns have been integrated in the project design as discussed below.</b></p>	
<p>The first concern is primarily related to the proposed four-year timeframe, given the scope and ambition of the project. We note that even societies with more mature waste management systems are still demonstrating resistance segregating organics, and municipalities often hesitate to implement large scale diversion of organics from landfilling.</p>	<p>The project lifetime has been extended to 5 years instead of the original 4 years, thereby providing more time to work towards the intended objectives of the project. Further, as discussed in Section A.1 above, the scope of the project has been reduced by removing the former (i.e. in PIF) Output 4.2 that sought to pilot-test the Fukuoka semi-aerobic technology in the Bishoftu and Hawassa landfills.</p> <p>The proponents also acknowledge the concerns of the reviewer relating to waste segregation. The COMPOST project seeks to create value for organic waste and to create demand for compost produced from this waste.</p> <p>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</p>

remaining waste to be disposed of 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 incremental investment schedule for compost infrastructure shown in Error! Reference source not found. in the Project Document has been established in full cognisance of the lessons-learned from this pilot project. One significant implication of this learning is that the outputs related to Outcome 2, as well as Output 4.1, will be implemented in parallel with Output 1.3.

The motivational factors for sorting of household waste are economic incentives, personal norms, social norms and encouragement from the authorities.<sup>49</sup> However, economic incentives alone may crowd out the other motivational factors, and become a perverse incentive for the generation of more waste.<sup>50</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 of addressing collective action issues in Ethiopia.

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.

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 home 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>51</sup> The Bahir Dar city representative also reported 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 households through selling of clean dry recyclable wastes.

Further, the appropriateness of incentive-based pricing to promote household sorting of waste will be assessed during project implementation.<sup>52</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

<sup>49</sup> <http://brage.bibsys.no/xmlui/handle/11250/187729?show=full>.

<sup>50</sup> Please see reference at footnote 50.

<sup>51</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.

<sup>52</sup> <http://www.emag.suez-environnement.com/en/sorting-mainstay-waste-recovery-process-9666>.

	<p>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 also been tested and proven to be effective in driving behavioural change in several developing countries to enhance the quantity and quality of sorted waste.<sup>53</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.</p>
<p>Each major work item in the proposal could take more than four years on its own, and many of the items depend on the results from previous work prior to full implementation. In addition, we note that Item 1 of the work program calls for harmonizing regulation at federal and regional levels, which could take years to negotiate and will likely require many compromises. Proceeding with developing a waste management program prior to having regulatory controls in place would be a high risk endeavour. We propose that either the scope of work be reduced to foundational items or the timeframe be extended.</p>	<p>As mentioned above, the timeframe has been extended. As discussed in details in Sections 2 and 3.1 of the Project Document, the outputs of the COMPOST project have inter-connected links that are needed to address the barriers identified in the barriers analysis summarised in Annex M of the Project Document.</p> <p>Noting the challenges associated with the specific example of harmonising regulation at the federal and regional levels, the relevant output has been changed to better reflect the reality in Ethiopia following discussions with stakeholders during meetings and the validation workshop. It is acknowledged that the regulation has already been harmonised, and that technical assistance will be needed by municipalities to adopt the newly formulated UGI and SWM Standards . Hence, Output 1.1 has been revised to:</p> <ul style="list-style-type: none"> <li>- Output 1.1: Developed ISWM and UGI standards that are transposed to the regional (sub-national) level.</li> </ul>
<p>For work item 1, the proposal should also clarify how this item will resolve the issues regarding the lack of enforcement and the lack of sustainable long-term funding.</p>	<p>This concern is closely related to Germany’s concern on risk management (point 2) above. Hence, the following explanation needs to be complemented with the corresponding explanation given above.</p> <p>Output 1.2 supports the enforcement of the current land ownership and land-use legislation in Ethiopia. To safeguard sustainable land management and enable enforcement of land-use legislation, cities and towns, with the support of GEF financing, will receive technical assistance to utilise existing cadastral maps and satellite imagery newly available at the Land Registration Agency to clearly denote areas legally reserved for UGI/ISWM. 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.</p> <p>Also, as discussed above (in response to Germany’s second comment), illegal settlements are the primary cause of illegal land tenure. The COMPOST project has been redesigned to incorporate illegal settlers (as far as practicable) in the income-generating UGI activities.</p>
<p>While the project to enhance various Ethiopian soils has merit, certain problems (as outlined in Problems and Root Causes in Part II, Project Description) run deep. In our view, fundamental structures to organize an urban society experiencing waste management growing pains must be established before implementing more “finishing touch”</p>	<p>The merit of the suggestions is well noted. It is clarified here that the policy and strategic decision to develop the COMPOST project is to support the MUDH in implementing its GTP II, and especially the pillar on Environmental Sustainability that links SWM and UGI in urban centres. As depicted in Figure 1 in Section 3.1 of the Project Document, the project consists primarily of developing a financially</p>

<sup>53</sup> World Bank (2014). *Results-Based Financing for Municipal Solid Waste*. World Bank, Washington DC. GEF6 CEO Endorsement /Approval Template-Dec2015



<p>initiatives such as greening and beautification (Urban Greenery Infrastructures). As such, the project should focus on the fundamental structure and “finishing touch” initiatives could come later in separate project proposals.</p>	<p>viable value chain for producing compost from household organic waste. This alternative waste management process is seen as a viable option to address many of the problems and challenges that plague the existing waste management system. The link with UGI comes from the perspective of end-uses of the compost produced. The UGI activities that will be targeted for compost application are peri-urban forestry and urban agriculture, and not the “finishing touch” initiatives that have been highlighted.</p> <p>Nevertheless, the definition of UGI covers other activities such as inner-city beautification, the embellishment of parks, greenery management in cemeteries etc. So, for congruence with this definition, the UGI as defined in the COMPOST project also mentions inner city beautification and greening. Also, the baseline assessments carried out prior to designing the project have revealed that inner-city beautification and greening utilise compost (albeit currently on a limited scale). So, all UGI activities that can create a market “pull” for compost have been included in the project design, albeit at different levels of priority.</p>
<p>Component #4 (Integration of UGI and ISWM in urban systems) should be the first and foremost activity to be implemented in both mature and developing areas of cities, as it is the stepping stone in ensuring: proper long-term development of cities; diversion and segregation of waste at source, mitigating landfill scavenging for valuables and the associated public health issues; and, organics diversion from landfilling is the main reduction trigger of landfill methane emissions. The order of activities should be revised accordingly.</p>	<p>This suggestion has been taken into account when developing the multi-annual work plan (Annex A in the Project Document) for the COMPOST project. The sequencing of the investment activities under Component 4 of the project has to be qualified since several enabling factors that do not exist in the baseline have to be developed first to then accompany composting activities.</p> <p>Table 8 in Section 4.5 of the Project Document gives the investment schedule for compost infrastructure development. The production of compost is 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 to operate composting facilities to produce quality compost, operationalising sorting of waste at the household levels, and coordination with UGI activities that will make use of compost. Taking into account 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 developed.</p>
<p>Technologies for composting should aim for the true and proven basics: open-air windrow composting, built to a scale where all operations are either manual (job opportunities) or mechanized, where machinery is available. This should be reflected in the project proposal. In addition, the proposal should ensure organic feedstock and carbon-based feedstock/amendments are available to obtain appropriate composting mixture, and water supplies to adjust optimal moisture content. We would like to ensure that project proponents are aware that there could be a potential competition for wood biomass used for energy and cooking and they should indicate possible measures to mitigate this risk.</p>	<p>This proposition has been fully integrated in the project design as it supports the guidance from the highest political hierarchy of MUDH that the project should create jobs (gender-differentiated), while taking into account the level of technical expertise and know-how prevailing in the urban centres. Another determinant of technology choice has been to support ongoing baseline composting activities. 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 standard quality assurance for the quality of compost. Please see paragraph 19 in Section 2 of the Project Document for more details.</p> <p>Regarding the quality of compost (appropriate mixture and moisture content), GEF funding will be used to develop national standards and QAS (Output 1.4) for compost used in different applications (noting that not all UGI applications will require the same quality of compost). Further, MSEs that will get involved in composting will need to carryout certified TVET trainings (Output 2.5) that will train them in producing quality compost in a scientific way. This capacity development is an integral part of the professionalisation of MSEs</p>

under Output 2.1.

The competition for wood biomass used for thermal energy use will be mitigated. The COMPOST project will support reforestation of 18,651 ha of degraded land for the production of renewable fuelwood (Output 4.3).

STAP Review Comments	Response
<p>1. The concern now is that endeavors to encourage waste-to-compost rather than waste-to-energy may also fail for similar reasons of lack of trained operators and equipment. So why will composting, even though a simpler technology, succeed where landfill gas has failed?</p>	<p>1. Landfill gas has failed because of 2 principal reasons: (1) lack of equipment and machinery to operate sanitary landfills according to best practice; and (2) lack of trained personnel to operate sanitary landfills. The first point is accurate even for newly-built sanitary landfills, such as the one in Bishoftu. Given the need for expensive equipment and machinery – which the municipality simply cannot afford – the new landfill in Bishoftu is not being used. Bishoftu municipality personnel understand that, if the new sanitary landfill were to be used now, it would be operated just like an open dump site.</p> <p>The technology risk is mitigated in the case of composting, which requires only require manual labour to “operate” and maintain low-technology windrow shed facilities. This issue is addressed in response to Comment 6 from Canada.</p> <p>Further, the technical assistance provided through GEF funding includes cross-cutting capacity development to MSEs involved in composting to operate composting facilities and to produce quality compost on a scientific basis (please see discussions in the previous table).</p>
<p>2. In this regard it is a good approach to loosely integrate the private sector within the project. However, the question begs whether the private sector was also involved with the failed landfill gas projects. Careful scrutiny of those projects is therefore recommended in order that a similar demise does not happen to this investment in composting. What might have been done differently in the two failed landfill gas projects in order to achieve success? Such a review would be particularly useful given another sanitary landfill gas plant is being proposed in Addis Ababa.</p>	<p>2. The landfills in the 6 target cities and towns are owned, operated and managed by the city administration or municipalities – i.e. there is no involvement of the private sector in the management of landfills. Hence, any failures in operating landfills optimally cannot be linked to the private sector. It is also difficult to make the case for the private operation and management of these landfills given the lack of administrative infrastructure to outsource such services, and the lack of revenue streams that would encourage private operation of the landfill (please see section on barriers discussed in Section 1 and <b>Annex M</b> of the Project Document).</p> <p>As mentioned earlier, the low-technology windrow composting option, supported with appropriate technical capacity building, will be promoted by the project. It is also mentioned that the low-technology composting option cannot be compared with the rather sophisticated technology needed to operate landfill gas capture systems in sanitary landfills. Also, the private sector involvement will be in the form of micro and small scale enterprises (MSEs), as per the guidance received from the MUDH to support Government’s initiative to create jobs through MSEs.</p>
<p>3. Linking solid waste management with urban green infrastructure (UGI) is an interesting move. The project title only specifies waste management and compost and UGI is not mentioned. Perhaps the project title should be amended given the statement in Section 3 "The project aims to integrate urban greenery and waste management to support sustainable urban development and urban agriculture and</p>	<p>3. The project proponents recommend that the existing title be retained for two reasons:</p> <ol style="list-style-type: none"> <li>i. The main reason is that the entry point for the project is to deal with the increasing urban solid waste management problem in Ethiopia using a viable alternative. Hence, creating a viable compost value chain is a primary focus for the project. As explained, the link</li> </ol>

<p>peri-urban forest management".</p>	<p>with UGI is through the Environmental Sustainability pillar under the GTP II for the MUDH (see response to comment 4 below); and</p> <p>ii. A secondary reason is to retain 'COMPOST' as a brand name for the project that resonates well with the local stakeholders and development partners.</p>
<p>4. The nutritional value of the compost in terms of N,P,K units per tonne is not presented and there are many forms of compost and many forms of chemical fertilizer. Usually compost is lower in nutrients per unit of weight than chemical fertilizers. So how many kg of artificial fertilizers would 1 tonne of compost produced in Ethiopia likely displace? It states on page 17 that the analysis used "a conservative emission factor of 36 kgCO<sub>2</sub>e for the displacement of chemical fertilizer for each tonne of compost that is applied". Is that per dry tonne or per wet tonne? What N,P,K compound fertilizer blend would be displaced specifically?</p>	<p>4. One tonne of compost would replace ~100 kilograms of artificial fertilizers on a direct N content (weight) basis.<sup>54</sup> However, the farmers are likely to use two types of fertilizers, both chemical and from compost, due to the fact that the majority of farmers are not able to use the prescribed quantity of chemical fertilizers because of the high price of these fertilizers (following deregulation of the fertilizer market). In addition, the GHG reductions resulting from the substitution of chemical fertilizers with compost is expected to be very small (notably in comparison to GHG reductions for peri-urban forestry), and also difficult to estimate and monitor. As such, the estimation of emissions reductions from the substitution of chemical fertilizers has been dropped (negating the need for using an emissions factor to displace chemical fertilizer with compost), and is the reason why the sources of emission reductions accruing from the project have changed from 4 to 3 in Section 3.2 (Paragraph 77) of the project document.</p>
<p>5. The link between ISWM and UGI appears to be the use of the compost to "displace and supplement chemical fertilizers in urban agriculture and peri-urban forestry" but this only became clear (at least to me maybe I missed it) at the bottom of page 11.</p>	<p>5. The link between ISWM and UGI is now made much earlier in the Project Document. The primary link between ISWM and UGI is at the policy and strategy level, as is now pointed out in paragraph 3 of the Project Document. It is made explicit that SWM and UGI are linked under the Environmental Sustainability pillar of the GTP II of the Ministry of Urban Development and Housing.</p>
<p>6. What source was used for that emission factor? Replacing chemical fertilizer with organic manure without crop losses could indeed lead to GHG emission reductions (1). However, whether soils would be a carbon source or sink depends on a number of factors. For example, one study assessed the impact of organic and inorganic fertilizer use on GHG emissions in tropical forestry and found out that organic wastes (sewage sludge compost and sewage sludge treatments) had significantly higher soil C fluxes than when using mineral fertilizer. The variation in fluxes between treatments with organic residues was influenced by differences in the physical and chemical compositions of the wastes and the amounts of labile carbon added. Assuming the compost has a reasonable N value of 2-3%, why would N<sub>2</sub>O not be produced as for artificial fertilizers? How much N<sub>2</sub>O emissions would actually be avoided per tonne of compost? There is a gap in the proposal relating to the potential nutritional value of the compost such that an accurate assessment of GHG emission reduction potential is not really possible. Laboratory testing of the compost will be needed once produced to verify these estimates.</p>	<p>6. Emission reductions from the substitution of chemical fertilizer with organic manure were not estimated for reasons as detailed in the response to comment 4 raised by STAP. As such, there was no use of an emissions factor for this substitution.</p> <p>For clarification, however, it is acknowledged that N<sub>2</sub>O emissions are also produced when organic compost is used as a fertiliser.</p>
<p>7. Land is required for making the compost adjacent to the landfill site. Is this available in the 6 cities? Will mechanical handling equipment be included or will it require a lot of manual labor to pile the solid waste, turn the compost, collect it and transport it to the site?</p>	<p>7. The project proposes a decentralised approach to composting rather than a centralised composting plant next to the landfill site. The reasons for this are:</p> <p>1. Composting will be carried out by MSEs that are already</p>

<sup>54</sup> This estimation is based on the nitrogen content in organic compost (2-3% by weight) and diammonium phosphate (DAP) (18-21% by weight). GEF6 CEO Endorsement /Approval Template-Dec2015

	<p>involved in door-to-door waste collection. The way the waste collection, transport and disposal is carried out in the target cities and towns, and the associated problems (Annex M in the Project Document), would favour the production of compost at the level of sub-cities (collection of kebeles);</p> <ol style="list-style-type: none"> <li>2. Reduction in the cost of transporting MSW from secondary sites to landfills that is borne by the municipalities without any cost recovery;</li> <li>3. Closer proximity to urban markets such as inner city beautification and urban agriculture, thereby reducing the cost of distribution, as is assumed in the financial model that is detailed in Section 4.5 and Annex O of the Project Document.</li> </ol> <p>It is also pointed out that the National Urban Greenery Infrastructure Standards (NUGIS) make provision for the allocation of unoccupied land in urban centres for producing compost (see Table L.2 in Annex L of the Project Document)</p>
<p>8. It states on page 18: "trees will absorb atmospheric pollutants such as ammonia and nitrogen dioxide". This is a complex soil/plant interaction process as for example, nitrogen dioxide absorption rates depend on the plant size and leaf area. So can proponents be confident the total volume of these gases will be absorbed or perhaps it will be only a portion?</p>	<p>8. It is pointed out that this statement is ancillary to the main global environmental benefits related to GHG emission reductions. It has been included simply to illustrate the co-benefits that will accrue from the project.</p> <p>Modelling the complex process to quantify the quantity of gases that will be absorbed is beyond the scope of the Project Document design. If recommended by STAP, the sentence can be removed.</p>
<p>9. Overall it appears to be a good project but further analysis of the nutrients in the compost to determine how much chemical fertilizer N, P, K equivalent as well as more robust assessment of resulting GHG emissions in urban agriculture should be undertaken.</p>	<p>9. Please see responses to STAP comments 4 and 6 above.</p>
<p>10. STAP also has concerns about the quality of municipal solid waste (MSW) sorting for composting and use in peri-urban agriculture. Unlike agricultural manure, MSW is contaminated with hazardous chemicals and other potentially harmful substances for food production such as heavy metals. How will the chemical and biological quality of the compost be monitored and enforced to avoid potential negative impacts on agricultural produce?</p>	<p>10. The observation concerning the risk of contamination is excellent. The contamination issue has been identified as a high risk to project success (please see Table 5 in Section 4.2 of the Project Document). 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>55</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 and food-grade quality will be required for the application of compost in urban agriculture, whereas a lower quality compost can be used</p>

<sup>55</sup> This was reported by city/town representatives during the Project Document development validation workshop. Please see the SESP given in Annex F.  
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<p>Furthermore, it seems the project proponents consider only MSW sources for composting. Within Ethiopian agriculture, some 60 percent of the output is from crops, with livestock and forestry producing 30 percent and 7 percent respectively (FAO country profile). Ethiopia's livestock population (2002) is the largest in Africa, with 30,000,000 cattle, 24,000,000 sheep, 18,000,000 goats, 7,000,000 equines, 1,000,000 camels and 53,000,000 poultry. It would be logical to support combining MSW and manure for composting in peri-urban agriculture. The supply chain could be shorter and more efficient than from using MSW alone for composting. STAP recommends project proponents to consider this possibility at least around some of the selected cities.</p>	<p>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 in 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> <p>While the addition of livestock waste to the compost would enrich the compost supply chain, municipalities are not set up to collect livestock waste and nor has it been established that agricultural enterprises are willing to pay for such services. Moreover, the cost of such services could be quite high given the long distances to transport livestock waste to composting facilities.</p>
<p>11. Finally, STAP wishes to raise the question of sustainable demand for composting among both urban and peri-urban agriculture and traditional small-scale farmers. Market analysis is recommended during project preparation to assure that supply and demand sides of the market are balanced.</p>	<p>11. The compost marketing issue is addressed in the Project Document is the following ways:</p> <ol style="list-style-type: none"> <li>1. 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</li> </ol>

detailed in **Annex O** of the Project Document. 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 competitive as a complement to fertilisers. Since the IRR is higher than the cost of capital (Section 4.5 and **Annex O**), the production of compost is considered to be financially sustainable.

2. Municipalities are already purchasing organic compost from rural farmers at around ETB 1 / kg in UGI applications, such as nurseries, inner city beautification and peri-urban forestry. In this context, municipalities will be the first market outlet for compost.
3. 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. 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. 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.
5. 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 inner-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>56</sup>

<sup>56</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. GEF6 CEO Endorsement /Approval Template-Dec2015

6. 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.

**ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS<sup>57</sup>**

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: <b>100,000</b>			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
International Consultants ( design technical elements as well as all the required financial and administrative components of the project)	55,000.00	29,645.00	25,355.00
Local Consultants (baseline analysis, desk research, stakeholder outreach and consultations)	25,000.00	13,523.08	10,476.92
Travel( conducting of two missions including site visit in the six cities )	11,000.00	10,585.79	414.21
Meetings & Workshops( stakeholder consultation and validation workshop)	9,000.00	5,410.71	4,589.29
<b>Total</b>	<b>100,000.00</b>	<b>59,164.58</b>	<b>40,835.42</b>

<sup>57</sup> If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.



annex D: calendar of expected reflows (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)

N/A