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MULTILATERAL INVESTMENT FUND

HAITI

**SUSTAINABLE AND ECOLOGICAL SANITATION SERVICES FOR IMPOVERISHED URBAN
POPULATIONS IN HAITI**

(HA-M1058)

DONORS MEMORANDUM

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PROJECT SUMMARY

SUSTAINABLE AND ECOLOGICAL SANITATION SERVICES FOR IMPOVERISHED URBAN POPULATIONS IN HAITI

(HA-M1058)

The main objective of this Project is to provide sustainable sanitation services to urban Haitian communities in metropolitan Port-au-Prince and Cap Haitien. The Project will also provide farmers with high grade organic fertilizer produces from human waste which will increase their productivity and economic revenues. The Project will achieve this by implementing two ecologically sustainable sanitation services that simultaneously provide sanitation and produce compost for agriculture.

The project will primarily address the need for dignified, affordable and scalable sanitation solutions for urban areas that can be expanded in a financially sustainable manner. Haiti has the highest incidence of diarrheal disease among children under 5 globally and the country is currently battling the largest and most virulent cholera epidemic in recent global history.

The approach of this project will address the efficiency and effectiveness required to make sanitation a sustainable business model. The model couples low-cost, user-approved ecological toilets with innovative waste collection systems, and then treats all the waste at minimal operating expense using a simple thermophilic composting method that will safely transform the collected toilet wastes into agricultural-grade compost. Revenues from toilet rental fees and compost sales will allow for profitably and sustainably providing sanitation services for vulnerable urban communities, covering costs and supporting the model through significant scaling efforts.

The project is well aligned with the IDB country strategy for Haiti and the MIF's "Inclusive Cities" thematic area and will contribute to the area's goal of improving quality of life of urban populations in the region. The beneficiaries of the Project are 17,500 urban residents without access to safe or dignified sanitation: This beneficiary group is comprised of families that live in impoverished urban and peri-urban neighborhoods in urban and peri-urban areas of Port au Prince and Cap Haitien where traditional sanitation technologies have proved difficult or impossible to implement.

MIF will provide US\$ 875,724 to fund technical assistance to the total budget of US\$ 2,555,728 and SOIL, the executing agency for this Project, will provide US\$ 1,680,004 in counterpart finance for an execution period of 36 months.

ANNEXES

ANNEX I	Logical Framework
ANNEX II	Budget Summary

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Draft Resolution

INFORMATION AVAILABLE IN THE TECHNICAL DOCUMENTS SECTION OF MIF PROJECT INFORMATION SYSTEM

ANNEX III	Detailed Budget
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ACRONYMS AND ABBREVIATIONS

AECID	Agencia Española de Cooperación Internacional y Desarrollo (Spanish Agency for International Cooperation and Development)
AOP	Annual Operational Plan
CHA	Country Office in Haiti
DINEPA	Direction Nationale de l'Eau Potable et de l'Assainissement (National Directorate for Water and Sanitation)
DNA	Diagnostic of Executing Agency Needs
HTG	Haitian Gourdes
IDB	Inter-American Development Bank
MIF	Multilateral Investment Fund
OR	Operating Regulations
PCU	Project Coordination Unit
SOIL	Sustainable Organic Integrated Livelihoods
TOR	Terms of Reference
UNICEF	United Nations Children Rights and Emergency Relief Organization
USD	US Dollar
WSA	IDB Water and Sanitation Division

PROJECT INFORMATION

**SUSTAINABLE AND ECOLOGICAL SANITATION SERVICES FOR IMPOVERISHED URBAN
POPULATIONS IN HAITI
(HA-M1058)**

Country and Geographic Location:	Haiti, Metropolitan Port-au-Prince and Cap-Haitien		
Executing Agency:	SOIL		
MIF strategic area:	Inclusive cities		
Coordination with Other Donors/Bank Operations:	HA-T1212		
Direct beneficiaries:	17,500 toilet users 200 agricultural producers using SOIL compost 30 new jobs in the sanitation sector 20 contractors to build toilets		
Indirect beneficiaries:	1,000 people trained in EcoSan methods		
Financing:	Technical Cooperation:	US\$ 875,724	35%
	Investment:	US\$ 000,000	
	Loan:	US\$ 000,000	
	TOTAL MIF FUNDING:	US\$ 875,724	
	Counterpart:	US\$ 1,680,004	65%
	Co-financing (if available):		00%
	TOTAL PROJECT BUDGET:	US\$ 2,555,728	100%
Execution and Disbursement Period:	36 months of execution and 42 months of disbursement.		
Special Contractual Conditions:	Conditions prior to first disbursement will be (i) project coordinator contracted; and (ii) first annual operational plan approved.		
Environmental and Social Impact Review:	This operation was screened and classified as required by the IDB's safeguard policy (OP-703). Given the limited impacts and risks, the proposed category for the project is C.		
Unit with Disbursement Responsibility:	MIF/CHA		

1. BACKGROUND AND JUSTIFICATION

A. Diagnosis of the Problem to be addressed by the Project

- 1.1 Haiti has the highest incidence of diarrheal disease among children under 5 globally and the country is currently battling the largest and most virulent cholera epidemic in recent global history. 72% (or 7.6 million) of Haitians do not have adequate sanitation. Sanitation services have traditionally taken two routes, first, there are government and humanitarian initiatives that tend to be very limited in scope, use technologies with prohibitively high operating and maintenance costs, and fail when government tax revenues are insufficient to cover operational and maintenance costs and donor interest inevitably wanes. Second, there are private companies that empty septic tanks. This septic technology is water-intensive, financially unattainable for the majority, and often results in contamination of water sources¹.
- 1.2 The main problems this project will address are the spread of diseases among vulnerable population and the environmental degradation caused by poor sanitation practices.
- 1.3 At the same time, Haiti's soils are steadily being stripped of their nutrients through unsustainable farming practices and soil erosion. There is a desperate need in Haiti for affordable fertilizer to increase food production. In addition, imported fertilizer is prohibitively expensive for most farmers and Haiti has some of lowest fertilizer application rates globally. Even though over 24% of the GDP in Haiti comes from the agricultural sector and it is estimated that at least half of the labor force works in this sector, data suggests that nearly half of Haitians are experiencing malnutrition². Widespread soil erosion and soil infertility is responsible for smaller harvests of cereal crops and the transition to low soil fertility crops such as cassava, which is lower in protein than the crops it tends to replace. By incorporating simple ecological sanitation technologies (such as those used for ecological toilets), waste can be converted into a soil amendment for agricultural production, thus, addressing the linked crises of poor sanitation and environmental degradation in the country.
- 1.4 The main causes of the problems are: (i) a complete lack of sewerage systems and poor drainage in Haiti's dense, low-income urban areas which lead to substantial fecal exposure for both service operators and the general public. Thus, the public health risks due to lack of sanitation are often not solved by the largely informal and unregulated sanitation service market. (ii) Dependency on scarce water resources. Conventional sewerage is dependent on reliable access to water while 42% of Haitians lack adequate access to water. (iii) High

¹ WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation, 2015

² *ibíd.*

maintenance cost of sanitation facilities. The large majority of urban residents who have access to sanitation use pit latrines and pour-flush toilets connected to septic tanks. Maintaining such facilities typically falls to the households themselves. Thus municipal governments don't need to make major investments in sewer infrastructure. However, since many slum residents are renters, they rely on landlords who often fail to invest in sanitation. In many urban areas in Haiti, an affordable, in-home toilet that can be easily moved around the household and between homes is the only viable sanitation alternative.

B. Project Beneficiaries

- 1.5 The beneficiaries of the Project are: (i) Urban residents without access to safe, hygienic and dignified sanitation: This beneficiary group is comprised of families that live in impoverished urban and peri-urban neighborhoods in urban and peri-urban areas of Port au Prince and Cap Haitien where traditional sanitation technologies have proved difficult or impossible to implement. It is estimated that only 34% of urban Haitians have access to improved sanitation facilities³. The target population is 51-57% women and 60% of this population is under the age of 18.
- 1.6 SOIL, the intended executing agency for this Project, has created a low-cost simple ecological technology paired with an innovative service delivery model that has the potential to sustainably and affordably provide dignified sanitation services in impoverished urban communities where the sanitation crisis was previously viewed as intractable. The indirect beneficiaries of the model are (i) Agricultural producers: SOIL's waste treatment process produces valuable compost that is sold to agricultural producers to support production while also generating revenue for its waste treatment operations. SOIL's agricultural research has demonstrated that the compost produced from ecological toilets (Konpòs Lakay) can increase production up to 100% for some high value crops, such as spinach and lima beans, demonstrating potential for increasing farmers' productivity and income at the national level; (ii) Sanitation workers: The project will also create jobs in the sanitation sector. Currently, the majority of Haiti's sanitation workforce is informal, with low wages and significant health risks. The Project's sanitation and waste treatment operation, on the other hand, could provide relatively well-paid and dignified jobs in the collection, transport, and treatment of wastes; (iii) Sanitation-sector entrepreneurs: Contractors currently bid to construct the special eco-toilets used for EkoLakay and EkoMobil and SOIL trains women in the beneficiary communities to become independent toilet construction contractors. Additionally, this project will also spin off some operational components of EkoLakay to private entrepreneurs when possible. As SOIL's sanitation businesses begin to increase in scale, more and more jobs and small business opportunities could become available in each of the

³ http://www.unicef.org/infobycountry/haiti_statistics.html

neighborhoods serviced; (iv) Haiti's National Directorate for Water and Sanitation (Direction Nationale de l'Eau Potable et de l'Assainissement – DINEPA): This project will lay the groundwork for a longer-term public/private partnership where SOIL could treat waste on a fee-for-treatment basis for the government and/or support the government in adopting SOIL's technology and replicating it nationally.

C. Contribution to MIF and IDB Strategy

- 1.7 The project is well aligned with the MIF's "Inclusive Cities" thematic area and will contribute to the area's goal of improving quality of life of urban populations in the region. The model promoted by SOIL will be piloted in metropolitan Cap-Haitien and in Port-au-Prince which includes the communes of Port-au-Prince, Delmas, Cité Soleil, Tabarre, Carrefour, and Pétionville. A capital city where more than 2.6 million people live, Port-au-Prince is one of the largest cities in the world with no municipal sewage system. This project offers a financially and environmentally sustainable and replicable model that addresses comprehensively the urban sanitation challenge of slum dwellers and poor communities in Port-au-Prince and Cap-Haitien that have typically been neglected. Without such a concerted intervention, the prospects of cholera, diarrhea, and worm infections will increase, jeopardizing education, productivity, and the quality of life for all urban dwellers. A demand-oriented approach will be adopted that will consider different projects that could be implemented separately.
- 1.8 Collaboration and coordination with the IDB Group. The Project is well aligned with the current IDB Haiti Country Strategy to continue to support the reform of the Water and Solid Waste Management sectors. The Project is relevant as the Bank, the AECID (Spanish Agency for International Cooperation and Development), DINEPA, and UNICEF are striving to identify solutions to the weak management, poor maintenance and insufficient domestic financial resources which negatively impacted past investments made in the sanitation sector. Lessons learned from this Project will guide the Bank's future initiatives and help DINEPA, IDB, UNICEF, AECID, other donors and private sector operators scale up the pilot. The Bank has a USD 30 million water and sanitation project for Port-au-Prince in preparation (HA-L1103) which will support the implementation of DINEPA's sanitation framework to develop a flexible strategy for urban sanitation in Carrefour. The IDB water and Sanitation division has also an ongoing TC (HA-T1212) that will analyse different sanitation solutions from commercial, technical, economic and cultural points of view. The Project will also coordinate with IDB/WSA to include its products in the national sanitation marketing campaign that DINEPA will develop and is being financed by HA-T1212.

2. PROJECT DESCRIPTION

A. Objectives

- 2.1 The goal of the project is to contribute to reduce the spread of disease while creating job opportunities. The purpose is to pilot a model of ecological sanitation services that simultaneously produces and sells compost for agriculture. The Project will achieve this by implementing two ecologically sustainable sanitation services that simultaneously provide sanitation and produce compost for agriculture. The Project aims to prove the concept of using a social business approach to sustainably and affordably provide dignified sanitation services to impoverished urban communities. This could create significant employment opportunities for sanitation workers and compost producers and contribute to economic growth in some of Haiti's most vulnerable communities in dense urban areas.
- 2.2 The model couples low-cost, user-approved ecological toilets with innovative waste collection systems, and then treats all the waste at minimal operating expense using a simple thermophilic composting method that will safely transform the collected toilet wastes into agricultural-grade compost. The Project will test the private-sector viability of the "EkoLakay" household sanitation business, expand the profitable "EkoMobil" portable toilet enterprise, develop partnerships with local agro-industry to improve the composting waste treatment facilities, and sell the resulting compost to promote agricultural production and environmental restoration. Revenues from toilet rental fees and compost sales will allow for profitably and sustainably providing sanitation services for vulnerable urban communities, covering costs and supporting the model through significant scaling efforts.

B. Description of Model

- 2.3 The Project will merge three (3) interconnected programs that together address the main problem of sanitation in densely populated communities in Haiti: (i) EkoLakay: SOIL uses simple and efficient technology and implementation models for the EkoLakay household sanitation service, making it easy to bring to scale and to replicate. First, clients pay a monthly fee of approximately 200 - 250 HTG (~\$3-4 USD per household) for which they receive: a locally-constructed EkoLakay toilet (which is a simple structure made out of ferro-cement or wood, and houses a five-gallon bucket and a plastic container for urine with a built-in urine-diverter that separates the liquid and solid wastes between the two containers), and a weekly service in which SOIL employees collect the buckets of solid waste and deliver clean empty buckets as well as carbon cover material (used for toilet flushing). The real cost of the toilet (approximately \$25 USD) is also incorporated into the monthly maintenance fee so that it will be paid off over a period of several years. SOIL is currently exploring the possibility of turning over toilet maintenance and waste collection activities to private entrepreneurs,

and early cost and revenue projections indicate an EkoLakay entrepreneur could begin turning a profit with a manageable roster of about 250 clients. During the first year SOIL plans to bring the total number of EkoLakay toilet rentals to 1,500 in order to conduct a robust test of this breakeven point projection. Throughout this period the Project will also continue to implement cost-saving innovations to the service delivery system so that the per-toilet maintenance and service cost continues to drop; (ii) EkoMobil: Using traditional portable toilets retrofitted to use ecological sanitation technology, the Project provides safe, dignified toilets and waste treatment services for community fairs, construction sites, and other events. These toilets help the Project earn revenue while also demonstrating the desirability of ecologically sanitary (EcoSan) toilets to a larger market base in Haiti. In 2015 the program generated more than \$22,000 USD in rental revenue with only minimal marketing. SOIL anticipates bringing in over \$8,000 USD in net profits by Year 3 of this business. Profits from EkoMobil will be used to fund through cross subsidies the EkoLakay and waste treatment activities; (iii) Composting Waste Treatment: During the course of this Project, SOIL will collect the containers of waste from all EkoLakay and EkoMobil toilets on a regular basis on SOIL's collection truck and empty them at SOIL's compost sites (in Trutier, Port-au-Prince and in Limonade, Cap-Haitien). The waste is then mixed with carbon matter and undergoes a decomposition process for at least six months until it is transformed into nutrient-rich compost to be sold for agricultural purposes. The operating and capital expenses of the waste treatment sites are related to the volume of waste collected through the sanitation services, but are generally significantly lower than alternative waste treatment options. The sites' potential funding opportunities include sale of compost generated from waste treatment, revenue from the operation of the EkoLakay and EkoMobil sanitation services, tipping fees from treatment of wastes from non-SOIL toilets, private funding from donors, public funding from the Haitian government in a co-management scenario, and possible carbon credits and/or similar benefits from generating positive environmental or social externalities. Over the next year SOIL will test for a cost recovery at the waste treatment sites so the necessary mix of funding sources support ongoing operations and further scale-up can be estimated accurately. Presently SOIL sells all the compost produced and there is a waiting line from other agro-producers.

- 2.4 The Project will specifically support the transition from an ad hoc model of sanitation to a sustainable business model for scale up and replication. Additionally the Project will help develop a Customer Resource Management (CRM) database to facilitate faster scale-up while maintaining a high standard of customer service and perform an environmental analysis of the model's impacts on climate mitigation in order to investigate the possibility of obtaining revenue from carbon credits (approved by government).

C. Components

Component I: Strengthen and expand sanitation businesses

(MIF: US\$364,934; Counterpart: US\$422,549)

- 2.5 This component will develop the household sanitation service, EkoLakay, and the portable sanitation service, EkoMobil, and provide all EkoLakay and EkoMobil customers with toilet maintenance and waste collection services. Also the project will complete research to test business structures (e.g. franchisees) for local waste collection and toilet maintenance. In addition it will create additional livelihood opportunities for women in EkoLakay toilet construction and improve the cost-efficiency of operations. This component will also test using mobile-bill pay services for household sanitation services to improve timeliness and efficiency of payment collection.
- 2.6 The expected results of this components are 2,000 additional toilets in service; 11,000 additional people accessing a toilet; annual increase in EkoLakay Revenue; 80% EkoLakay payment rate; Registered EkoLakay business; 17,500 annual toilet users; 15% profits from EkoMobil; Ekomobil registered as a business.

Component II: Improve waste treatment system (MIF: US\$92,575; counterpart: US\$960,724).

- 2.7 This component will make the SOIL composting waste treatment facilities in Cap-Haitian and Port-au-Prince more effective and cost-efficient and research alternative revenue streams such as carbon credits and waste treatment fees.
- 2.8 The expected results are: increased compost revenue; Carbon credit research study completed; 1500 MT human waste removed from communities; 275 MT compost produced.

Component III: Knowledge management for replication and scaling. (MIF: US\$54,000); Counterpart: US\$151,155)

- 2.9 The executing agency will partner with research institutions to rigorously test the model and publish the results in peer-reviewed journals to promote global replication. SOIL will refine and share business plans, helping others to replicate the model in their own communities globally.
- 2.10 The expected results are: waste treatment business plan produced and shared; 1,000 training participants; 5 total peer reviewed papers published over the three year project.

D. Project Governance and Execution Mechanism

- 2.11 The executing agency, SOIL Haiti, will be responsible for the implementation of the Project and will sign the agreement with the IDB/MIF. SOIL will work in close cooperation with local key stakeholders such as the municipality, government institutions, and key private sector stakeholders. The purpose of this is to engage

local authorities by keeping them apprised of SOIL's research on environmental waste treatment technologies as the government begins to scale up their waste treatment interventions around the country. The Project will also inspire key private sector stakeholders to explore the possibility to adopt a franchise model, or expand EkoLakay and EkoMobil as a fully integrated business with seed capital from regular financial institutions.

- 2.12 One year before the project ends, a sustainability workshop will be held with all key stakeholders to identify specific actions needed to ensure the continuity of the project's activities after the project funding has been expended.

E. Lessons Learned

- 2.13 Since first piloting this project in 2013 with support of an IDB-managed Clinton Bush Haiti Fund grant, SOIL has continued to improve the business models used for this approach and has made significant cost-reductions and efficiency improvements. Specifically, the following lessons learned have been critical in advancing the model's efficiency and success: (i) In order to keep servicing costs low, it is critical that local waste collection be carried out with low-cost small transport so that large truck usage is limited to transfer between local communities and the waste treatment site; (ii) Strategically locating depots for storage of clean as well as filled toilet containers also reduces the system's transport needs, a significant driver of cost; (iii) In order to further limit transport costs, the focus should be on increasing customer density within identified service areas and expansion outside of these areas should only occur when there is enough stated demand; (iv) Household payment collection is most effective when it is carried out by a trained employee rather than attempted with the support of community based organizations; (v) Upfront training sessions for new clients reduce ongoing maintenance needs and increases toilet use and customer satisfaction; (vi) The composting process is accelerated when the compost is in direct contact with the ground; this has led to improvements in compost site design.
- 2.14 SOIL recently completed a pilot test of this new business model in Cap-Haitien and has hitherto observed the following results which will be expanded and further developed in this Project:
- User surveys show a high level of satisfaction and a desire to continue with the paid service
 - Expressed demand for toilet services exceed expectations
 - Results indicate that families are willing and able to pay for sanitation services
 - Early cost and income projections show that the toilet maintenance and waste collection operation will be profitably covered by toilet user fees
 - SOIL's waste treatment sites treat and transform over 25 Metric Tons of human waste per month and the low-cost system costs less than \$3 per person per month

- Sales of more than 100,000 gallons of compost prove a strong market demand.

2.15 The results of this proposed MIF financed Project will be evaluated by the executing agency and the partners with the purpose of extending the model and scaling up to other provinces and eventually at a national level, together with the DINEPA and other interested partners in the private sector and donor community. The core of the sustainability lies in the successful execution of the Project and thereby proving the financial viability of the model. This will enhance the possibility of attracting additional donors and sponsors for a replication and scale up to other regions in Haiti and globally.

F. Knowledge value

2.16 This Project will address the following knowledge and experience gaps around implementation in order to facilitate a public and private partnership:

- Using mobile-bill pay services for household sanitation services to improve timeliness and efficiency of payment collection.
- Designing a CRM system that responds to the unique needs of a sanitation service implemented in a technologically challenging environment.
- Improving tracking of portable toilets and waste collection schedules through technological solutions.
- Designing more cost-efficient compost facilities while continuing to meet all national and international standards and guidelines.
- Quantifying the climate implications of ecological waste treatment.
- Identifying alternative revenue streams for low cost sanitation and waste treatment services.

G. MIF Additionality

2.17 Non-Financial Additionality. MIF is known for promoting innovative initiatives that can have impact at scale. This Project will make an innovative concept and technology more efficient and effective which can lead to a financially and environmentally sustainable business model. This, together with MIF ability to bring regional and local partners, both public and private, to the project, and its project implementation expertise, bring a unique set of capabilities required to successfully bring the project to scale. The MIF contribution will be complimentary to an existing IDB Technical Cooperation (HA-T1212) that will

analyze different sanitation solutions from commercial, technical, economic and cultural points of views.

- 2.18 Financial Additionality. MIF's financial contribution to this project confirms its mission to conduct high-risk experiments to implement and improve innovative models for engaging and inspiring and partnering with innovative organizations like SOIL to solve fundamental development problems. MIF funds will help further develop the critical components of the SOIL's business model to make it more resilient and cost-efficient. Knowledge acquired will be transferred to local operators in the region, thus laying the ground for a new ecosystem and market in this field.

H. Results indicators

- 2.19 The Project will have the following results indicators:

- Number of people accessing a household EkoLakay toilet and EkoLakay toilet revenues increased
- Average EkoLakay toilet payment rate increased (%)
- Number of EkoMobil toilet users increased and EkoMobil toilet rental profit established
- Compost sale revenue increased

I. Project Impact

- 2.20 The following will be the impact indicators for the Project⁴:

- Improved quality of life in urban areas due to access to affordable and dignified sanitation services
- Reduction of diarrheal disease incidence in communities with improved sanitation services
- Reduction in environmental pollution from fecal pathogens
- Increased agricultural productivity in areas where compost is applied.

J. Innovation and Scale up strategy

- 2.21 The model is an innovative example of a working circular economy – by closing the loop and providing services and solutions at each point in the sanitation cycle from toilet provision to soil restoration while simultaneously providing jobs and creating sustainable, economically viable livelihood opportunities. Additionally, by

⁴ Only to be measured if it is decided that a full Impact Evaluation will be funded and conducted.

relying on customer feedback and adapting solutions to meet customer needs, SOIL has positioned itself as an organization eager to build a model that will be accepted and embraced by customers living in dense urban settlements; a population that has traditionally been extremely difficult to reach with sanitation services. Additionally, the design - a durable, user-tested toilet made from locally-available materials for less than \$25 USD per toilet - is innovative and assures affordable production, maintenance, and repair even before achieving economies of scale. At the end of the three-year collaboration, SOIL will have over 4,500 toilets in service and be producing and selling more than 275 tons of compost annually.

- 2.22 The Project will also help SOIL create a registered social enterprise to expand the business model, continuing to focus on the neighborhood saturation strategy by establishing service depots in targeted neighborhoods throughout Port-au-Prince and Cap-Haitien and training teams at each depot to manage service provision and marketing for their assigned service area. Profit from SOIL's EkoMobil service will be used to cover waste collection costs that are not paid by EkoLakay user fees. SOIL will continue to operate waste treatment sites in Port-au-Prince and Cap-Haitien to treat waste from the EkoLakay and EkoMobil toilets, which will enable the organization to support waste treatment costs through philanthropic and/or governmental mechanisms, as is typical for large-scale sanitation solutions worldwide. SOIL will work to reduce the costs and challenges associated with payment collection by integrating a mobile payment system, "*Mon Cash*", that's hosted by Haiti's major telecommunications provider, Digicel. SOIL will also partner with other sanitation sub-contractors, explore the possibility to adopt a franchise model, or expand EkoLakay and EkoMobil as a fully integrated business with seed capital from regular financial institutions. By proving the model's financial and technical viability it is envisioned that large private sector actors will become interested in scaling up the model to a national level. SOIL is also in communication with the private sector in Haiti regarding avenues for collaboration: Digicel and Lajan Cash (to establish a mobile payment system), Sanco (to investigate the potential for shared resources such as transport) and the WIN group (to investigate land expansion possibilities for the PAP compost site). It is also envisioned that the model is a perfect candidate for the Social Impact Incentives [SIINC] initiative run by Roots of Impact in collaboration with the MIF/IDB, the Swiss Agency for Development and Cooperation and Ashoka. SIINC is an innovative and catalytic instrument for bringing together high-impact social enterprises, impact investors and public or philanthropic funders. By January 2018, SOIL hopes to begin to use the local depots as the centers for exponential scale up as each depot manager becomes responsible for marketing, installation, local collection and repairs. Based on the assumption that by 2019 each depot could be installing ~30 toilets per month, it is anticipated that SOIL will have 65,156 toilets in service reaching over 300,000 users by 2026.

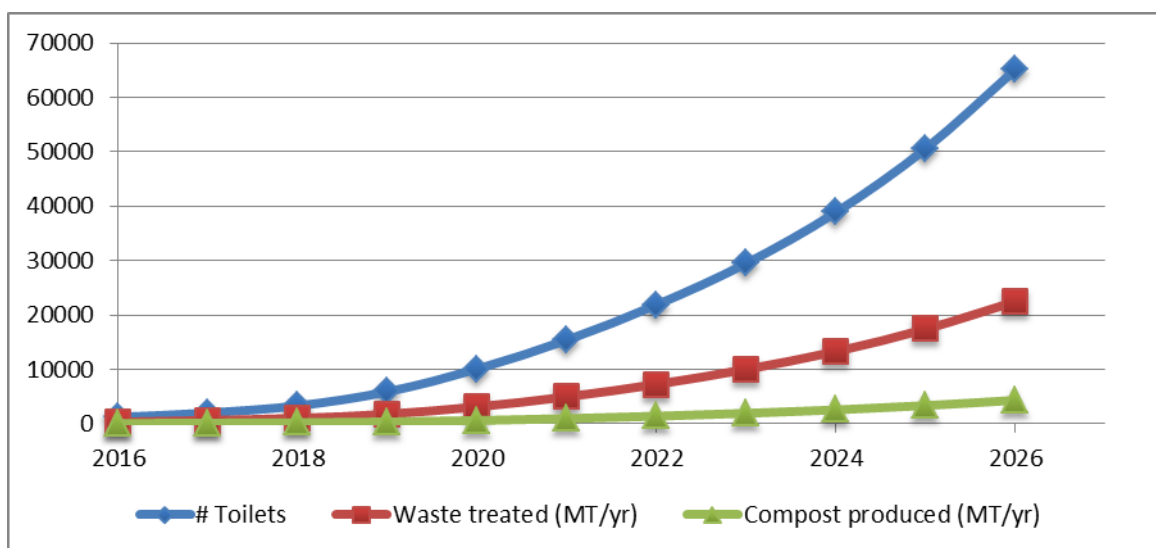


Figure 1. Projected scale-up rate for EkoLakay toilet number (in total number of toilets in service), and quantity of waste treated and compost produces (in metric tons per year).SOIL 2014.

3. MONITORING AND EVALUATION STRATEGY

- 3.1 Baseline and monitoring: SOIL will collect baseline data on the relevant results indicators in the areas of implementation, as well as quantity and quality of products and collection time in the areas of implementation. This information will be analyzed and developed into a monitoring tool to track the project's beneficiary level changes and indicators. This monitoring tool will take into consideration other indicators that could be collected through the project lifecycle such as additional Corporate Results Framework indicators.
- 3.2 Evaluation: A final evaluation of the project will be undertaken by external consultants contracted directly by the Bank with project funds three months after the end of project execution, or when 95% of the Bank's contribution has been disbursed. The tentative evaluation questions are:
 "Can sanitation as a business be sustainable in a country like Haiti?", and "What are the challenges when testing a new business model for deploying innovative technologies in poor areas?"
- 3.3 Closing Workshop. The executing agency will organize a closing workshop at the appropriate time to assess along with other key stakeholder the outcomes achieve, identify additional tasks to guarantee sustainability and identify and disseminate lessons learned and best practices.

4. COST AND FINANCING

- 4.1 The project has a total cost of US\$2,555,728, of which US\$875,724 (35%) will be provided by the MIF, and US\$1,680,004 (65%) by the counterpart. The execution period will be of 36 months and the disbursement period will be of 42 months.

	MIF	Counterpart	Total
Project Components			
Component 1 Strengthen and Expand Sanitation Businesses	\$364,934	\$422,549	\$787,483
Component 2 Improve Waste Treatment System	\$92,575	\$960,724	\$1,053,299
Component 3 Knowledge Management for Replication and Scaling	\$54,000	\$151,155	\$205,155
Execution and Supervision			
Executing Agency/ Administrative	\$144,050	\$15,300	\$159,350
Evaluation	\$6,000		\$6,000
Ex post reviews	\$15,000		\$15,000
Contingencies	\$199,165	\$130,276	\$329,441
% of Financing	35%	65%⁵	
Grand Total	\$875,724	\$1,680,004	\$2,555,728

5. EXECUTING AGENCY

- 5.1 SOIL is a Haiti-based NGO that designs and implements sanitation social businesses. Its mission is to promote dignity, health and sustainable livelihoods through the transformation of waste to resources. SOIL provides ecological sanitation solutions to transform human waste collected from urban communities into organic compost for agriculture and reforestation. SOIL built the first ecological toilet in Haiti in 2006 and the first waste treatment facility in the country (in Limonade, outside of Cap-Haitian) in 2009. SOIL is one of Haiti's most respected sanitation operations with expanding sanitation services in Cap-Haitian and Port-au-Prince and waste treatment facilities in both locations. SOIL has been recognized as an exemplary organization dedicated to innovation and knowledge sharing as featured in the New York Times, the BBC, and a variety of other publications. In addition SOIL has received a range of international awards including a 2014 Schwab Social Entrepreneur of the Year award and an Ashoka fellowship. SOIL works closely with DINEPA to keep them apprised of their research on environmental waste treatment technologies as the government begins to scale up their waste treatment interventions around the country. SOIL has a team of 82 people (90% of whom are Haitian). The executive management team includes staff with degrees in ecology, public health, engineering, business

⁵ Revenue from SOIL's social business pilots (which is included in the Counterpart financing total) exceeds the total budget line on some budget items, and accordingly contributes to the total MIF + Counterpart contributions totaling to 101% of the total budget. Any net revenues from SOIL's social business operations will be reinvested in the business and used to cover operational costs in the following year.

administration, and agronomy. With MIF's support, they hope to bring on an advisory team of business development specialists that can support the scale up of three interconnected market-driven business models designed to increase the provision of basic services for poor urban households. This effort is the central component of their work in Haiti and closely aligns with their mission and vision. Counterpart funding for this work is being provided by the American Red Cross, the 11th Hour Project, Grand Challenges Canada, and others.

- 5.2 SOIL will establish an executing unit and the necessary structure to effectively and efficiently execute Project activities and manage Project resources. SOIL will also be responsible for providing progress reports on project implementation to the MIF/IDB. Details on the structure of the execution unit and reporting requirements are in Annex 7 in the project technical files.

6. PROJECT RISKS

- 6.1 The potential risks of this project are related to demand for the products associated with social acceptance and perception about the use of human waste and the difficulty in lowering the costs to reach sustainability. There is also a related health and environmental risk of composting human waste, particularly in areas where pathogens, bacteria and viruses abound. These risks are mitigated by increasing public awareness in the communities where the products will be marketed while testing the new aspects of the model and demonstrating the positive benefits of safe sanitation. This will be done by organizing workshops where the local population can get hands-on experience with the technology, learn how to operate, and also conduct some demonstrations using compost that increases productivity. SOIL is also retaining control of the waste treatment process and sites to ensure that they are safely managed. SOIL's staff are well trained and properly equipped to protect health and safety, both their own and that of the environment. The compost sites have protocols for all safety procedures, which are frequently inspected by SOIL management. In addition, the sites are open to guided visits from students, researchers and external evaluators wishing to observe the processes and safeguards. The assumptions in the business model constitute a risk to the successful implementation of the project as the model and its assumptions have not been thoroughly tested to ensure that they are not overly optimistic. The Project mitigates and prepares for this risk by having a relatively high contingency item in the budget for any known or unknown misfortune when testing the pilot. On the financial and sustainability risks, the national sanitation authority, DINEPA, under a different government administration, might decide to not support the continuation of the project, even if the economic benefits and savings are proven by the Project. By measuring results and demonstrating real and clear benefits of reduced costs and improved services it is anticipated that the government will continue supporting the Project and the model in the longer term.

7. ENVIRONMENTAL AND SOCIAL EFFECTS

- 7.1 Since SOIL follows rigorous and industry standard safety and public health measures in its waste treatment operations no negative environmental or social spillover effects are expected from this project.

8. COMPLIANCE WITH MILESTONES AND SPECIAL FIDUCIARY ARRANGEMENTS

- 8.1 **Disbursement by Results and Fiduciary Arrangements.** The Executing Agency will adhere to the standard MIF disbursement by results, procurement and financial management arrangements specified in Annex 8.

9. INFORMATION DISCLOSURE AND INTELLECTUAL PROPERTY

- 9.1 **Information Disclosure.** None of the Project information is deemed confidential according to the Bank's Access to Information policy.
- 9.2 **Intellectual Property.** No exceptions to the IDB intellectual property rights policy are expected.