Document of the Inter-American Development Bank  
Multilateral Investment Fund

NICARAGUA

**Integrated, sustainable solid waste management in Nicaragua’s Southern Atlantic Autonomous region (RAAS)**

(NI-M1043)

Donors Memorandum

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# Abbreviations

Whenever reference is made in the document to any of the terms mentioned below, the same will be understood to mean the following:

| **Term** | **Meaning** |
| --- | --- |
| **ABS** | Access to Basic Services Unit |
| **Bank or IDB** | Inter-American Development Bank. |
| **ESMP** | Environmental Safety Management Plan |
| **LAC** | Latin America and the Caribbean |
| **MIT** | Massachusetts Institute for Technology |
| **MIF/FOMIN** | Multilateral Investment Fund |
| **MSME** | Micro, Small, and Medium-sized Enterprises |
| **PSR** | Project Status Report |

**Integrated, sustainable solid waste management for Low-Income populations in Nicaragua’s southern Atlantic autonomous region (RAAS)**

(NI-M1043)

# Executive Summary

|  |  |  |
| --- | --- | --- |
| **Beneficiary Country:** | Nicaragua | |
| **Executing Agency:** | UNDP Nicaragua | |
| **Target Beneficiaries:** | The Project beneficiaries will be:   1. At least 75,000 low income people with improved access to sanitation services; 2. 5 community-based enterprises providing sustainable waste services | |
| **Financing:** | **Modality:**  **MIF:**  **Counterpart**  **TOTAL:** | **Non-reimbursable**  **US$ 1,223,865 (70%)**  **US$ 511,950 (30 %)**  **US$ 1,735,815** |
| **Objectives** | The general objective of the project is to contribute to the improvement in the livelihoods of low income communities in Nicaragua’s Southern Atlantic Coast through access to waste management services. The specific objective of the project is to create a sustainable and integrated solid waste management system in three municipalities (Bluefields, Corn Island and El Rama). | |
| **Execution Timetable** | 48 months for project execution and 52 months for disbursement. | |
| **Special Contractual Conditions** | The project coordinator should be contracted and the full amount of counterpart financing secured. | |
| **Exceptions to Bank Policies:** | None. | |
| **Environmental and Social Review** | Based on the IDB Environment and Safeguards Compliance Policy, the relevant CESI classification for this Project is Category ‘B’. | |
| **Coordination with other donors:** | NA | |

# II. Problem statement

## A. Access to Solid waste management Services

1. The links between solid waste management and development are well established. Implementing a comprehensive solid waste management plan not only promotes public health and protects the environment by diminishing the amount of waste that is burned, buried, or dumped in formal and informal dumpsites, it can provide livelihood income by contributing to the development of small waste disposal businesses and improve the prospects for the tourism industry.
2. The three municipalities included in the project currently have negligible systems in place for managing solid waste. There is a lack of financial and technical resources for implementing a comprehensive, sustainable waste management plan, limited public systems that support proper waste management, few economic and market incentives that encourage appropriate waste strategies, and the absence civic education to support proper waste management. The factors mentioned above imply: a) poor operation of the municipal collection system; b) lack of trained personnel, equipment, and tools; c) poor participation of local residents; e) lack of environmental awareness; and f) a culture of non-payment for services. Comprised of organic material, plastic, paper, glass, and metal, garbage in these municipalities is estimated at forty-four tons per day. Presently these materials are dumped in multiple informal dumpsites, creeks, rivers, and the ocean, or burned in yards behind homes. Current waste management strategies in the region release dangerous environmental contaminants and toxins, including dioxins, lead, and mercury into the air and drinking water. Not only are the effects of these pollutants and toxins especially harmful to the welfare of children, pregnant women, and the elderly, but they increase the incidence of gastro-intestinal diseases. In addition, once toxins enter the environment, they accumulate in the food chain, affecting all levels of the ecosystem.
3. Two of the municipalities involved in the program (Bluefields and Corn Island) are strategic destinations for a growing tourism industry in Nicaragua. At this time, much of the waste in these municipalities, which include an increased tonnage of plastic bottles due to a growing number of tourists traveling to the area, is burned or dumped in the sea. Without a comprehensive, sustainable waste management system in place, the burgeoning tourism industry that creates livelihood income for local residents will be compromised.

## description of project

1. This project aims to improve the quality of life and enhance livelihoods of communities through the creation of an integrated, comprehensive and sustainable solid waste management system. Initially, the project will improve awareness of human health and environmental concerns about poor waste management, including the release of greenhouse gases from decomposing garbage (methane and carbon dioxide) that contribute to global warming. Training and capacity building of municipal waste workers and officials in more effective waste management and a better tariff system will contribute to the sustainability of the system. The project also includes private-public initiatives related to the creation of micro and small collection, recycling, composting, and waste-to-energy businesses (using biodigesters). These enterprises will be connected to a common market network (a recycling route) that will allow recycling and waste management activities to become competitive. Finally, the project will contribute to improved sanitation conditions in communities that have great potential as tourist destinations through the implementation and maintenance of waste management at the local level.
2. The Atlantic coast of Nicaragua is one of the poorest regions in Latin. It is also one that lacks provision of most basic services. Therefore, this project is highly relevant and in line with MIF´s efforts to engage the private sector to provide low income populations in LAC with access to basic services. In addition, lesson learned by one of the project partners - the Massachusetts Institute of Technology Community Innovators Lab (MIT CoLab) - previous to the project bodes for a well-designed and executed project. The model developed and tested will be applicable to any region with these characteristics: ethnically diverse; high incidence of poverty, high unemployment, rural with poor infrastructure.

Lessons Learned on Integrated Waste Management (MIT CoLab)

1. It is not sufficient to implement just the collection and recycling of solid waste, but also of organic waste. This is because people tend to appreciate and cooperate when they can dispose of all their wastes (organic and inorganic).
2. In order to encourage the production of organic manure (compost), the use of compost must be multiplied through the implementation and development of home gardens and farms that use manure as agricultural inputs.
3. It is necessary to build and strengthen a solid private-public relationship. Main emphasis should be given to public policies that create conditions and incentives to entrepreneurial interests and initiatives. Also important is the accompaniment of local governments in enabling/facilitating dialogue and agreements between medium and small enterprises (that are into the business of collecting and recycling waste) transport and educational sectors.
4. Stakeholder Involvement: household level (how the classify waste), institutions at municipal and regional level (to promote projects that create synergy with the initiative and to replicate the good experiences). For this it is important to have in place an effective communication component and that also provides for the exchange of experiences.
5. Isolated poor communities require help to promote and modernize small businesses that are collecting and recycling waste as well as providing basic equipment that contributes to a more efficient functioning of the waste management system.
6. In a region that has up to 90% unemployment; current waste practices must also be designed to create jobs. The proposed solid waste management system offers appropriate business models for building at least five micro-enterprises in the waste sector. Additionally, the proposed plan addresses issues of greenhouse gas emissions produced as a result of the region’s current waste practices. If practiced correctly, the proposed model significantly diminishes the environmental and public health threats.
7. The project lays out a two-phased plan for implementing strategies that achieve the near elimination of solid waste in a relatively isolated municipality with 12,000 inhabitants (the Corn Islands), and controlled disposal of waste in the region’s two largest municipalities with a combined population of more than 70,000 (El Rama and Bluefields). This proposal builds on local knowledge by incorporating municipal government research on waste streams, connecting to an existing composting cooperative, and incorporating lessons learned from a previous recycling campaign. It also uses an economic analysis of profit-potential to overcome the challenges faced by earlier waste management efforts to ensure that the program’s benefits reach the region’s poorest residents. Ultimately, the project not only reduces greenhouse gas emissions but also creates jobs for some of the region’s most impoverished communities and populations. The project will empower afro-descendent populations and women through an integrated approach and activities specifically aimed at reaching this result. The target group is the entire population (high extreme poverty rates, heterogeneity, mixed ethnicities, social exclusion, high unemployment) of the communities benefitting from a better sanitary environment and related economic benefits (employment, tourism, investments).
8. The project will test a new recycling and community sensitization model at the municipal level that will engage the private-public sector (MSMEs) and develop new micro and small enterprises to drive the operation and management of solid waste recycling and composting. A large public awareness campaign in English, Spanish, and Miskito languages will incorporate a carefully orchestrated door-to-door educational campaign, signage, and public service announcements on the local television and radio stations. The educational/public awareness campaign will also be rolled out in schools and churches. Additionally, small enterprises will be developed in partnership with the local municipalities and the informal recyclers (waste pickers) now working at the dumpsites. The small waste businesses will be designed to complement the waste services currently provided by the municipalities, for instance collection enterprises will reach into neighbourhoods where municipal trucks are unable to manoeuvre, resulting in informal dumpsites.
9. The table below provides estimates of the weekly costs, revenues, and expected profits for the first phase of the project, which launches a recycling route by boat from Bluefields to El Rama, and then by truck from El Rama to Managua. The table shows estimated *weekly profits* in totals as well as breakdowns for each category of recyclables. Based on project projections, the recycling route from Bluefields to Managua would yield an estimated ¢3,333,220.80 in annual profits, or roughly $151,647. Average monthly profits for this route are estimated at ¢277,768.40 or 12,000 USD. Every category of recyclable material except glass would be profitable under these assumptions. Glass recycling would need to be subsidized by the other materials. Revenue estimates from the selling of the recyclable materials are based on quotes from various brokers in Managua and are subject to world market fluctuations.  The *shipping costs* are based on the estimate of 880 Cordoba per ton provided by a local shipping company. Bluefields will allow shipping companies to bid on yearly contracts for regular shipments, ultimately driving down shipping costs.  For the reasons outlined above, the figures presented in Table One should be used as references.

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| **Weekly Cost, Revenue, and Profit estimates for Bluefields to Managua recycling route.** | | | |
| **Materials** | **Weekly Revenue1 (¢)** | **Weekly Shipping Costs (¢)** | **Weekly Profit (¢)** |
| Total | 93791.6 | 29691.2 | 64100.4 |
| Plastic | 23310 | 13675.2 | 9634.8 |
| Paper | 22120 | 9732.8 | 12387.2 |
| Metal | 48361.6 | 2094.4 | 46267.2 |
| Glass | 761.6 | 4188.8 | -3427.2 |

1. This initiative envisions a coordinated effort by the local government, local NGOs, community groups, and large international donors towards the common goal of creating a highly specialized and profitable common market network for recycling and waste management activities to be recognized within the entire region with the potential to replicate and scale within Nicaragua and in other countries. UNDP’s Monitoring and Evaluation data for RAAN and RAAS will inform quantitative and qualitative assessments on program progress and will generate lessons learned for further expansion. In addition, a methodological guide will be produced on establishment of integrated solid waste management models for vulnerable population.
2. The project will test the market opportunity in supplying a common recycling route at the community level where reasonable profits can be made to incentivize the private sector to participate in and replicate the model. It will also test incentives for collecting and composting organic waste and introduce Community Supported Agriculture (CSA) where local firms (hotels, restaurants) pledge to by local produce. Data will be collected on the impact of improved solid waste management on gender roles, employment, and livelihoods in very low-income populations, which will test the varied incentives of both providers and beneficiaries to participate.

## Experience to date

1. During the 2004-2005 periods, the United Nations Development Program (UNDP)-Nicaragua implemented a comprehensive recycling project in Little Corn Island called “Separation, Collection, and Recycling of Solid Wastes in Little Corn Island”. In 2007, UNDP hired a consultant to diagnose the increasingly problematic issue of solid waste in five RAAS municipalities: Corn Island, Pearl Lagoon, Bluefields, El Rama and Kukra Hill. The study recommended implementation of an aggressive recycling campaign, including a common route for marketing recyclable materials. The route connecting Corn Island, Bluefields and El Rama, was identified as one of the viable routes. UNDP updated the diagnosis outlined and formulated a first project proposal. In 2009 UNDP contacted Oxfam UK in Nicaragua who in turn reached out to Massachusetts Institute of Technology’s (MIT) Green Hub for technical assistance and support, specifically in regards to the topic of green businesses. In January 2011, MIT, with partial support from a not-for-profit based in the region, BlueEnergy, conducted a detailed and applied study for project formulation prepared by seven MIT students in coordination with the three RAAS municipalities (Corn Island, Bluefields and El Rama). During the formulation of this project, UNDP supported with technical and logistical assistance.
2. The UNDP Country Office in Nicaragua, through its Caribbean Program has a strong presence and relationship with the target population and communities, through different development projects and programs that use the national and direct implementation modalities. Since 1991, UNDP Nicaragua has implemented various projects and programs in the RAAN and RAAS. Currently UNDP is carrying out six different projects related to the sectors of governance, institutional strengthening and capacity development, economic development, water and sanitation, cultural revitalization and small and medium size entrepreneurships, demarcation and human development. The working relationship and communication of UNDP Nicaragua with stakeholders, partner institutions and communities is considered excellent by the same partner and stakeholder institutions.
3. In the last year, UNDP has led the effort to formulate a participatory program with the various municipal governments for the specific definition of priorities. In addition to the participation of local RAAS individuals engaged in the collection and sale of solid waste, UNDP consulted with the Secretariat of Municipal and Communal Affairs (SGAMC) and the Secretariat of Environment and Natural Resources (SERENA) of the Regional Government of the RAAS as well as the municipal governments of El Rama, Bluefields, Corn Island and Little Corn Communal Movement to create a comprehensive proposal. Finally, OXFAM UK and UNICEF country office in Nicaragua, further defined the program.
4. The UN Common Country Assessment (CCA) for Nicaragua (2008- 2012) highlighted the existence of pollution as a result of improper solid waste management, emphasizing the need to address the problem. The United Nations Development Program Assistance Framework (UNDAF) also indicates that the promotion of productivity and competitiveness requires the development of skills and abilities of the population which have unequal opportunities, particularly women and youth, as well as other sectors of the population such as the rural and indigenous and afro descendant communities of Nicaragua´s Autonomous Regions of the Caribbean Coast.

## E. Relationship to IDB Strategy and MIF Basic services agenda

1. The Report on the 9th General Increase of the Resources of the Inter-American Development Bank [[1]](#endnote-1) (AB-2764) seeks to increase social inclusion and reduce poverty by promoting more equal access to basic services. This project complements this strategy and contributes to the Basic Services Agenda by developing and expanding business models providing sustainable and integrated sanitation services to low-income populations to three municipalities (Bluefields, Corn Islands and el Rama) in Nicaragua.
2. This project would allow the MIF to harness the synergies between a number of stakeholders: two MIT labs (D-Lab and Community Innovators Lab) local and regional expertise (local universities, including BICU and URACAAN, Blue Energy, etc.) and other international donors in the field (OXFAM UK, UNICEF, UNESCO etc.). The MIF’s convening power is critical for enabling the project’s multiple goals (increasing local employment, spurring competitive industry, raising awareness of human and environmental health, improving sanitation, and decreasing greenhouse gases), which favourably positions the MIF to promote integrated solid waste management.

**III**

# Objectives and Description

## Program Goal and Purpose

1. The general objective is to contribute to improve of the quality of life of low income communities in Nicaragua’s Southern Atlantic Autonomous region through access to waste management services. The specific objective is to create a sustainable and integrated solid waste management system in three municipalities (Bluefields, Corn Island, and El Rama).
2. To achieve this objective, the project will include the following four key components: (i) Public awareness and communications campaigns; (ii) Capacity Building and Sustainability; (iii) Creation and strengthening of waste businesses, and; (iv) Knowledge management and dissemination of results.

## Description of Components

**Component 1: Public awareness and communications campaigns**

1. The purpose of this component is to create awareness and commitment at the community, household, public sector and private business level within each of the three municipalities for sustainable management of waste.
2. To ensure success of the program, it is not only important for residents to understand how to sort their garbage, but it is important that they realize the public health and environmental costs of poor waste management practices. The activities are: (i) Technical Assistance to design public awareness, media and education campaigns; (ii) Technical Assistance to implement public awareness, media and education campaign; (iii) Annual waste collection celebratory events in each of the 3 municipalities.
3. The expected results are: Three communication and educational programs have been implemented, four communities are sensitized, public officials and business representatives better educated in waste management and the general knowledge and awareness of the importance of waste management is significantly higher in the beneficiary communities.

**Component 2: Capacity building and sustainability**

* 1. This component will provide necessary training and technical assistance to residents, community organizations, businesses, and governments, including but not limited to training residents in the selection and classification of waste; offering business and technical training to local enterprises created by the project; training municipal workers in proper waste collection, including health and safety standards; and training technicians at various levels of government to plan, manage, and monitor waste. This component also offers technical support to the municipality to provide necessary regulatory tools that would give incentives for proper management of the sector.
  2. This component involves resident training, which is conducted in homes, at schools, and in churches; business administration and technical training provided to individuals developing small waste businesses as well as waste management and safety training offered to local municipal waste workers and neighbourhood association leaders provided by a local university (URACAAN or BICU) in partnership with MIT CoLab. Individuals who finish the training will be provided certification by the local college and MIT.
  3. The activities of this component are: (i) Technical Assistance to design the training program (train the trainers) for municipal officials, waste workers and community leaders; (ii) Implement the certified waste training program in partnership with a local university and MIT CoLab; (iii) Study trips for municipal and community leaders and waste business leaders Technical Assistance to design waste tariff system; (iv) Study produced and technical assistance provided to define waste value chain (including market connection; (v) Conduct study of hazardous waste and health care waste; Technical Assistance to provide the 3 municipalities with a more environmentally friendly waste management policy including new tariff system and application of monitoring and control of environmental health, and safety management standards.
  4. The results are: Improved wastewater and tariff collection system as well as implementation of a plan to train targeted local businesses; waste value chains planned and implemented including market connections; health care and hazardous waste disposal system implemented, and; major local businesses using better waste management systems.

**Component 3: Create and strengthen waste businesses**

* 1. In this component, the project will contribute to the development of a community-based small businesses in each municipality, including a collection business, a sorting/recycling business, and/or a composting business. The activities include; (i) Technical assistance for the creation of the waste businesses; (ii) formalization and strengthening of small waste enterprises; (iii) Equip waste enterprises with appropriate health and safety gear and technology; (iv) Technical Assistance for facilitating the operation of two small-scale biodigesters that use organic waste to create biogas; (v) Technical Assistance for developing the market for the compost to agriculture initiative, and; (vi) Technical assistance to develop adequate environment, health and safety guidelines that are in compliance with the IDB’s policies and national/international standards.
  2. The results of this component are: All five waste enterprises in the four communities and at least two bio digesters to support waste businesses are functioning and sustainable.

**Component 4: Knowledge management and Dissemination of results**

3.13 The purpose of this component is to finance and implement educational and public opinion activities within the RAAS to determine the results of the project and its impact. The activities planned are: (i) Waste audit conducted in the three municipalities; (ii) Design monitoring and evaluation system for project and produce baseline; (iii) Hire communication and media coordinator for the project; (iv) Technical Assistance for beneficiary surveys; (v) Creation and dissemination of 3 (health, women, business) case studies of the project; (vi) Produce one research study on project for replication purpose; (vii) Produce publication of the case studies; (viii) Creation and dissemination of media products for the project; (ix) Organize final dissemination event.

1. UNDP and MIT will co-host a regional workshop with the MIF in the final year of the project, in order to highlight the successful outcomes and lessons learned from the project, inviting at least 150 people who may be interested in sharing their own experiences with integrated waste service business models, or in developing one, as well as other stakeholders such as government officials and other social investors/donors.

# IV. Cost, Financing and Sustainability

1. **Summary cost table***.* The Project’s estimated total cost is US$1,735,815, with US$1,223,865 in non-reimbursable funds coming from MIF. Local partners (the 3 municipalities, universities, UNDP and bilateral donors) will provide US$511,950counterpart funds in cash and in-kind. UNDP will administer the different funding allocations, provide technical expertise, and oversee the implementation of the project. UNDP will be responsible to the Bank for administering all resources.

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| **DESCRIPTION** | **MIF** | **Local Counterpart** | **Total** | **%** |
| Project administration | 214,000 | 186,600 | 400,600 | 23% |
| Component I: Public awareness and communication | 441,400 | 48,000 | 489,400 | 28% |
| Component II: Capacity building and sustainability | 200,400 | 46,750 | 247,150 | 14% |
| Component III: Create small waste enterprises | 32,000 | 146,600 | 178,600 | 10% |
| Component IV: Knowledge management and dissemination | 159,500 | 84,000 | 243,500 | 14% |
| **SUBTOTAL** | **1,047,300** | **511,950** | **1,559,250** | **90%** |
| Evaluations, audits contingency | 104,000 | 0 | 104,000 | 6% |
| Agenda Account | 15,000 | 0 | 15,000 | 1% |
| Impact Evaluation 5% of MIF contribution | 57,565 | 0 | 57,565 | 3% |
| **TOTAL** | 1,223,865 | 511,950 | 1,735,815 | **100%** |

**Sustainability**

1. This project will test waste sector business models in three different settings in which integrated waste services can be delivered through recycling, composting, and converting waste to energy both sustainably and at scale. Locally procured experts will deliver the technical support to implement the model that will strengthen the capacity to deliver sustainable services.
2. The knowledge and learning products generated, such as case studies, workshops, videos, and any documented tools that will be available via UNDP’s website, are intended to attract additional MFI interest in the provision of health services via sustainable business models.

# V. SPECIAL CONSIDERATIONS

* 1. **MIT’s CoLab, D-Lab, and Sloan School of Management** will contribute to this project as part of its waste sector technology and business development initiatives in low and middle-income countries. This initiative proposes to make a significant impact, implementing appropriate D-Lab waste technology, CoLab social innovation, and Sloan Business School business models. By participating in this project, with the help of the MIF’s expertise and networks, MIT will continue to develop technology, business models, and social innovation best suited for proper waste management and equity. **BlueEnergy** will contribute to the program by providing expertise on waste to energy technology and carrying out the implementation of biodigesters in two of the three municipalities.

1. These partners in collaboration with MIF will continue to refine over the course of this project, a systematic assessment and business model development approach that results in comprehensive waste management plans that incorporate extensive public awareness campaigns, municipal waste collection, and small waste enterprises in an effort to divert waste, including plastic, paper, and metal as well as organic material, from dumpsites. This program will partner with robust organizations that have deep experience and successful track records in waste management. Committed to the initiative since October 2011, MIT’s CoLab and D-Lab Waste have developed waste technology, business models, and social innovation to support the waste sector businesses designed for this program. In respect to activities related to recycling, the UNDP is coordinating with the MIF/AVINA Regional Initiative for Social and Economic Inclusion of Recyclers (RG-M1179) to share knowledge products produced by both programs.
2. **Executing Agency and Mechanism**

## A. Executing Agency

1. The Executing Agency will be UNDP, Nicaragua. Since the mid 1990, the UNDP Nicaragua is working in the Atlantic Coast of Nicaragua and has helped to strengthen capacities for planning, organization, governance and economic development. The UNDP Nicaragua’s main mission and mandate is to strengthen the autonomous institutions and develop the capabilities of their functionaries and representatives to make those institutions more efficient, effective and transparent to the communities and peoples of the Atlantic Coast. UNDP has helped to generate spaces for dialogue and consensus between government and society to reach consensus, good governance as well as regional development strategy. Since 2001, UNDP works in partnership with various agencies and institutions of the multilateral, bilateral, international and national NGOs (Agencies of United Nations System-World Bank, European Community, AECID, The Catalonian Agency for Development Cooperation (ACCD), OXFAM UK, among others).
2. From 2008 to 2012, UNDP (with other UN Agencies) has been executing joint programs to achieve the MDG for the amount of US$ 30.5 million with the regional autonomous governments of RAAN and RAAS as the key stakeholders. The results and achievements in terms of improving the quality of life and well-being of indigenous and afro-descendant communities are substantive.
3. UNDP is implementing a Joint Program for Institutional Strength and Capacity Development of which a part of is an Administrative and Procurement System that responds to the specific needs to overcome weak administrative and accounting aspects of the regional autonomous administrations and to the multiethnic and plurilingual nature of the autonomous regions. UNDP Nicaragua has two field offices in Bilwi (RAAN) and Bluefields (RAAS) which enable UNDP a unique advantage to work closely with the regional authorities of RAAN and RAAS. The field offices provide daily and continuous technical advice, monitoring and evaluation to UNDP programs, projects and stakeholders. UNDP also makes regular ground micro-assessments of the administrative and accounting capabilities and practices of its partner institutions carrying out development project.
4. This project employs a highly participatory approach with the UNDP Nicaragua having the role of implementing agency; the three municipalities participating as co-implementing partners together with the Regional Government of the RAAS; the local universities and MIT, Blue Energy, and UNICEF with experience in its “healthy schools” program, supporting implementation of specific project activities in accordance to their expertise.
5. This project’s overall governance approach calls for each stake holder to play their role according to their mandate. Nicaraguan law give the municipality the responsibility for waste management in their communities. For that reason the project will pay special attention to plan together with UNDP and MIT the annual operative plan for each respective municipality. The municipalities will also provide counterpart financing which increases their ownership and accountability role for the project. The environmental offices will support the execution of project activities in their respective municipality as well as give contribute to follow up and reporting assuring timely and quality execution.

**B. Executing Mechanism**

1. **Disbursement by Results**. All aspects of project execution and performance monitoring and results will be included in partnership agreements to be established between UNDP and each implementing partner. The model of Project Management Based on Risk and Performance will be used, as approved by the MIF in April, 2008. Project disbursements will be contingent upon the achievement of milestones to be agreed between the Executing Agency and the MIF, along with their means of verification (See Annex III). Achievement of milestones does not exempt the Executing Agency from the responsibility to reach the Project’s objectives.
2. Under the modality of Performance and Risk-based Project Management, an initial advance equivalent to 20 % of MIF funds will be disbursed to the executing agency to begin project activities. Subsequent disbursements will be made upon verification that defined milestones have been reached.
3. The milestones will be agreed jointly by the executing agency and the IDB/MIF for purposes of the first annual work planning exercise at inception of the program. The milestones may be reviewed during the execution of the project and reprogrammed, if necessary. The executing agency may ask the Bank to revise the milestones, provided they have not expired, in accordance with the Operating Regulations for the program. A project schedule detailing the documentary support to be presented to the Bank to facilitate verification that defined milestones have been achieved will be developed in collaboration with UNDP upon approval of the operation.
4. **Program Implementation Readiness**. An institutional and risk assessment was undertaken to review the organization’s existing financial management and procurement capacity in terms of systems, controls and documentation, which were assessed as being suitable for supporting project implementation. The executing agency was rated as low risk in terms of procurement of goods and services as well as administrative, accounting and financial management (See Annex V for full details).
5. **Procurement**. For the procurement of goods and contracting of consulting services, the executing agency will apply IDB policies for the private sector (GN-2349-9 and GN-2350-9) and Procurement Operational Guidelines for Non-reimbursable Technical Cooperation projects in effect, consistent with IDB policies. Before engaging in procurement and contracting for the Project, the executing agency shall submit a Procurement Plan for the Bank´s consideration and approval, which will include the particular contracts for goods, consulting and non consulting services required to carry out the project, including the estimated cost of each contract, and the proposed procurement method. This plan will be for at least the first eighteen months of execution, and will be reviewed and updated as required on an annual basis to reflect any changes, and each updated version, as well as any modifications at any other time, shall be submitted for the Bank´s approval prior its implementation.

1. Given that the institutional risk assessment of the executing agency resulted in a classification of low riskfor procurement and services, the review of the procurement and contracting processes and supporting documentation will be conducted ex-post­ with an annual frequency (See Annex V for full details). The executing agency will establish minimum standards for competitive procurement and contracting via partner agreements to be signed with each project partner. Agreement clauses will be included in Partner Operating Guidelines that will be shared with the MIF technical supervisor of the Project. The executing agency must facilitate the periodic review by the Bank of expense receipts and procurement procedures for goods and consulting services to ensure that they conform to the Bank’s policies. The executing agency will also update the procurement plan at least once a year.

# Monitoring, Evaluation, and Knowledge Return (KSC)

## A. Monitoring and Evaluation

1. The MIF in Nicaragua will be responsible for the monitoring and supervision of the project including processing of disbursements. The Supervision Team, together with the Executing Agency, will develop an Annual Operating Plan for each calendar year of project execution, which will outline targeted results for the year derived from the project logical framework, a schedule of planned activities including expected dates for achievement of the agreed milestones, and projected procurement and disbursements linked to the achievement of the Project’s milestones.
2. UNDP Nicaragua will be responsible for ensuring that an adequate monitoring and evaluation system is in place to track the indicators in the logframe and other products and results from the project intervention. This system should include the creation of an appropriate baseline to measure the progress achieved during and at the end of project execution.
3. **Project Status Reports:** UNDP Nicaragua will be responsible for presenting Project Status Reports (PSRs) to the MIF semianually, or more frequently and on such dates as the MIF shall determine, by providing at least sixty (60) days advance notice to the Executing Agency, including the pertaining supporting documents for the achievements reported. These PSRs will follow the format established electronically by the MIF and will contain information on Project execution, compliance with the ESMP, achievement of milestones, and completion of Project objectives as stated in the logical framework and other operative planning instruments. The PSRs will also describe Project issues encountered during execution and outline possible solutions. Within ninety (90) days after the end of the execution term, the Executing Agency will submit a final Project Status Report to the MIF, which will highlight results achieved, project sustainability, and lessons learned.
4. **Financial Supervision:** UNDP Nicaragua will establish and maintain adequate accounts of its finances, internal controls, and Project files systems, according to the financial management policy of the IDB/MIF. The institutional and risk assessment results (presented in Annex V) indicate that UNDP Nicaragua is eligible for annual ex-post review of disbursements and requires final audited financial statements at the closing of the Project.
5. The application of the ex-post review modality for the review of procurement processes and the supporting documentation for disbursements can be modified by the MIF based on the results presented in the review reports and/or institutional evaluations conducted during the Project execution.
6. The IDB/MIF may contract independent auditors to carry-out the audit of financial statements as well as the ex-post reviews of the procurement processes and of supporting documentation for disbursements. The associated costs will be financed with the MIF contribution to the Project according to the IDB procedures.
7. **Evaluations**. The project will undergo two specific evaluation interventions: a mid-term evaluation, and a final evaluation. A baseline data collection exercise is required to ensure that project indicators may be monitored effectively at mid-point and end of the project. The mid-term evaluation will be carried out at half of the execution period or at 50% of disbursements, whichever happens first, and will be more formative or process-oriented, focused on ensuring that the project performs as planned and providing recommendations for adjustments to the project plan, if necessary. The final evaluation, to be carried out at the end of execution or 95% of disbursements, whichever happens first, will focus to a greater extent on measurable results of the project, and any lessons learned or opportunities generated that might inform any future projects. A Regional event will be organized in the last year of execution to discuss actions to ensure the sustainability, replicability and scale up of the results. Three months before the end of the execution period a closing workshop will be organized to evaluate with key stakeholders the results achieved.

## B. Knowledge and Strategic Communications (KSC) Strategy

1. In summation, the RAAS Integrated Waste Project is unique in that it builds a comprehensive, sustainable waste management system that incorporates strategies that marry innovative waste technology with new business models designed in partnership with local residents. The project, which will be well-documented both in narrative accounts and on video, is devised to co-create and share new knowledge about comprehensive waste management systems with local residents. In this way, it will not only effectively further existing projects in the waste sector, but it will inspire the creation of additional ventures that impact climate change and create livelihood income for low-income, isolated communities in Central and South America.
2. UNDP has a monitoring and evaluation system which, in the case of both autonomous regions (RAAN and RAAS) in the Caribbean Coast, is implemented through UNDP Nicaragua local teams and offices in Bilwi (RAAN) and Bluefields (RAAS). The M&E is done based on a well-planned follow up to programs, plans and activities. Important issues are noticed and brought to attention of the local and national management through this monitoring system and by regular formulation and delivery of quarterly and annual reports, containing descriptive and quantitative analysis of difficulties and overall progress. UNDP monitoring and evaluation system is shared with key stakeholders including local, municipal and regional governments.  Studies made by UNDP and MIT will set up a credible baseline for the condition of the waste management sector. The project will also help to continue updating this baseline. The project will have a project Board, consisting of the major stakeholders of the project, that convenes every six months or as often as they deem appropriate to ensure efficiency and transparency in the project implementation. The Board assumes and takes management decisions as necessary, or if the tolerance (time and/or financial resources) of the project has been exceeded. Also, a methodological guide on integrated solid waste management in poor communities will be produced.
3. **Audiences:** The main audiences that would be interested in the results of the project are as follows: (i) municipal governments in the region; (ii) NGOs; (iii) development organizations; (iv) universities; (v) small and micro enterprise associations, and; (vi) Ministry of environment officials and regulating agencies (for both health and environmental sectors).
4. **Knowledge return:** This project will not only generate learning at the household level for residents in all three municipalities, totaling 120,000 individuals, but it will provide workshops to enhance waste practices at the municipal and neighborhood level in each of the four communities and it will offer business administation and technical skills to wastepickers and other individuals employed in the program’s small waste businesses. Additionally, studies and films will be created to offer lessons to other municipalities worldwide interested in developing comprehensive, sustainable, and inclusive waste management programs. Finally, in the final year of the program a regional learning workshop is planned to disemminate information on how to create successful waste entperprises that complement existing municipal waste services.
5. **How learning will be captured, measured, used to reach target audiences, and applied to future projects:** Learning will be captured and measured through: (i) on overall evaluation of the project; (ii) definition and monitoring of performance metrics of the business model; (iii) case studies on enterprises developed in partnership with wastepickers and local municpailities, health and ecological benefits of the program, and impact on gender issues; (iv) a regional workshop to disseminate best practices and lessons learned provided by wastepickers and/or individuals employed by the enterprises developed by the program, representatives from each of the three municipalities, and project partners.

# Program Benefits and Risks

## A. Program Benefits and Development Impact

1. This project will benefit approximately a total of 120,000 people living in the municipalities of Bluefields, Corn Island and El Rama. Among these, approximately 30,000 are creoles afrodescendants and 15,000 are Miskitos. The project will also benefit locals with income generating activities through the creation and consolidation of five (5) micro-enterprises that support the collection and sorting of recyclable material in Corn Islands, Bluefields and El Rama and two biodigestor micro-enterprises in Bluefields and El rama or Corn Islands.
2. This project is designed to not only improve the general health of residents, but it promises to improve the overall standard of living for afro-descendants, indigenous, and mestizo communities of the Caribbean Coast of Nicaragua by offering opportunities for jobs in the waste sector and further enahncing the tourism sector by offering cleaner environments for eco-tourism. Ultimately, the program will simultaneously increase the income level of those participating in the proposed micro-enterprises and permit better access to information, innovation, and clean development in the waste sector. Women will be specifically targeted in this project by 1) inserting women into the more profitable segments of the recycling route (i.e. feasibility of women metal collectors, boaters, etc.), 2) promoting at least half of the MSEs to be created be women-owned and offer women-tailored training for the businesses; 3) making sure women leaders are involved in the public awareness campaign in leadership capacities; 4) ensuring that both women and men are doing the house-to-house training, 5) determining if the majority of people to be trained (in the home) are women, and if so, tailor the training content to women and their specific family/household/waste needs
3. Beneficiaries: Direct beneficiaries of the project include: 80 families in the 4 communities working directly at the dumpsites. The indirect beneficiaries will be:The total number of inhabitants in each municipality which is approximately 120,000[[2]](#footnote-1).
4. Risks
5. The occurrence of emergencies and disasters, such as hurricanes, floods, and droughts may affect the life time that is proposed for the project. With regard to the specific content of the proposed project: a) Recycling route (micro enterprise for collecting, sorting, and transporting recyclable material)- recycling route transport fees might prove to be too costly to support a recycling micro-enterprise. The executing partners has made estimates based on the consultant study that reports the tonnage of waste in Bluefields and on research of transport costs to Managua that has led to conclude that the recycling enterprise is economically viable. Furthermore, as of September 2011, UNDP will be working with MIT’s Center for Latin American Logistics and a local university (either BICU, or URACAAN) to determine the best possible recycling route for potential income generation. Simultaneously, to create additional options for selling recyclables to potential brokers in locations other than Managua, UNDP is reaching out to global recycling transporters; b) Composting initiative (composting of organic waste to be used in small scale agricultural projects). Although the proposed strategy has proven successful in other locales and the positive feedback in interviews conducted by MIT students during their January 2011 fieldwork, cultivating home and community gardens may not be enough of an incentive to inspire the collection and composting of organic waste. If so, this component will be shifted to a model akin to Community Supported Agriculture (CSA) where an agricultural micro-enterprise will be created that uses compost for fertilizer; c) There is an inherent risk of child labor in waste projects as well as local cultural limitations may prevent women from their participation. This will be mitigated by the strong presence of partner organizations monitoring and supervising the project that is compliant with national and internatonal labor and child protection laws and standards, and the performance of sound gender analysis to help designing the gender related focus activities; d) The project also presents environmental and occupational health and safety risks for waste pickers and workers that are moderate to low. These risks are mainly associated with their exposure to contaminants and accidents and spills, especially when handling/sorting the household waste and its transportation by boat from Corn Island to Bluefield to El Rama, and by trucks from El Rama to Managua. These risks will be addressed by the implementing agency and partner organizations by developing and implementing measures to prevent, minimize, and control accidents and injuries in workers and contamination in the environment.

# Environmental and Social Considerations

* 1. Based on the IDB Environment and Safeguards Compliance Policy, this project is Category ‘B’ because of its low to moderate social and environmental impact and risks mainly associated with workers’ health hazards and safety issues (accidents during collection and handling of household waste and its transport by water from Corn Island to Bluefields and then onto El Rama) and the construction and operation of two biodigesters. The executing agency, UNDP Nicaragua and project partners (MIT, Blue Energy, UNESCO and the regional/municipal governments) have strong commitments to promoting positive environmental and social businesses practices. Prior to the first disbursement, the executing agency (with the involvement of the local universities in the region BICU and URACCAN) will conduct a Social and Environmental Analysis of the Project and prepare an Environmental and Social Management Report (ESMR) which includes an Environmental and Social Management Plan (ESMP) based on the outilne provided in Annexed  
     Guideline for ESMR. The analysis will assess, among other issues, (i) Potential Impacts and Risks of the operation particularly those related to: water transport of recyclable material, risks of accidents and weather events, and effects on ecosystems and species of aquatic fauna marine, lake and riverine, (ii) Management of Environmental, Social, Health and Safety and Labor Impacts and Risks. This is for all people involved in the process of collection, separation, recycling and water transport of the material. The ESMR must have prior review and approval of the bank before implementation. The measures identified in this report and plan will be implemented by the executing agency with financial resources from the project.

1. [↑](#endnote-ref-1)
2. Bluefields 55,000 + Rama, 22,000.00  Corn Island 12,000 Total population Urban and rural is (Bluefields 80,000 +  Rama  35,000 and Corn Island  12,000) [↑](#footnote-ref-1)