



March 2026

IMPACT AND INSIGHTS ON ORGANIC WASTE MANAGEMENT IN SIDS

Opportunities to Advance Waste Sector Mitigation Action



STRATEGIC PARTNERS:



This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de:



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Organic Waste Management for Methane Mitigation in Small Island Developing States

Despite being on the front lines of climate impacts, Small Island Developing States (SIDS) are leading with urgency—advancing practical, high-impact climate solutions to rapidly reduce methane emissions from the waste sector. The Recycle Organics (RO) Program, supported by an \$8 million CAD contribution from Environment and Climate Change Canada (ECCC), helped turn this ambition into action from 2023 to 2026. By working directly with municipal representatives, national governments, local partners and non-governmental organizations (NGOs) in six SIDS across the Caribbean and Pacific (Belize, Guyana, Grenada, Saint Lucia, Samoa and Fiji), the RO Program has accelerated the development and implementation of organic waste management systems to deliver measurable environmental, economic and social benefits to these island nations. Its efforts are anchored in three strategic pillars:

- **Developing policy and regulatory frameworks, including:**
 - 5 National-level policy instruments across 5 countries
 - 6 Planning instruments for national and subnational governments
- **Providing financial and technical assistance for project portfolio acceleration, including:**
 - 76 organic waste management projects identified across 6 countries
 - 19 developers assisted with prefeasibility studies, including business model analysis and mitigation potential
 - Technical and implementation support to launch pilot home composting programs across 6 countries, reaching over 1,000 households, diverting 1,300 tonnes of food and garden waste annually
 - Provision of key equipment, such as woodchippers, front loaders, modular anaerobic digesters, composting bins, open pyrolysis systems for biochar production, among others, to scale promising methane mitigation projects
- **Capacity building and raising awareness, including:**
 - The implementation of 3 educational networks across schools, hotels and municipal offices

- The development of Monitoring, Reporting, and Verification (MRV) Protocols to track key climate data for emissions estimates
- Developing Waste Characterization Studies to improve local data
- Nine onsite trainings to improve composting and black soldier fly operations for over 140 project-operators participating

To keep the momentum in all beneficiary countries, **the RO Program has identified several opportunities that are outlined in this document.** These opportunities were identified throughout the implementation of the program and in specific discussions held during the regional workshop, “Recycle Organics: Deepening Impact, Expanding Action in SIDS,” held in Florianopolis, Brazil, from September 23–25, 2025. These opportunities have been further refined as the program approaches the completion of its implementation phase in March 2026. **This document highlights how and where continued efforts can generate the greatest impact, strengthen ongoing initiatives and facilitate the long-term expansion of effective organic waste management practices in SIDS.**

Recycle Organics is committed to supporting policy and regulatory framework development at the national and subnational levels, engaging with public and private organizations to advance projects in the pipeline towards implementation, creating capacity among diverse stakeholders and raising awareness for citizens to promote sustainable organic waste management practices. **The insights presented here aim to guide partners interested in contributing to lasting improvements in organic waste management and methane mitigation across the region.**



KEY RESULTS OF THE RO PROGRAM IN SIDS

Policy support:  11 policy instruments supported



Belize

4 local-level Organic Waste Management (OWM) Plans developed.

Belmopan, Orange Walk, Dangriga and Benque Viejo now have a strategic roadmap to advance OWM. Templates for the future development of regulations and plans are now available for other local governments.



Fiji

Quantification and development of waste mitigation targets for NDC 3.0.

Fiji incorporated concrete and quantifiable methane mitigation targets developed by RO to guide its investments in waste management infrastructure and meet its climate goals.



Saint Lucia

Regulation for separating organic waste at the source. RO created a draft regulation for Saint Lucia that provides mandates and incentives for all waste generators to divert organic waste from the landfill.



Grenada & Belize

Implementation plans for organic waste under national solid waste management strategies. Grenada and Belize now have implementation plans and tools to sustainably promote and reduce emissions through improved OWM.



Guyana

Guyana: Technical support for Guyana's Solid Waste Management (SWM) Bill.

Once approved, Guyana's SWM Bill would become the country's first national policy framework on circular and sustainable practices in waste management.

Project pipeline



76 methane mitigation projects identified across 6 countries

These include projects focused on diverse technologies, including reducing food loss and waste, composting, vermicomposting, anaerobic digestion, co-digestion in wastewater treatment plants, black soldier flies, biochar and landfill gas capture.



51 projects received technical assistance, equipment provision and funding support

If implemented, the portfolio of assisted projects would treat **288,000 tonnes of organic waste** and mitigate **2.7 MM tCO₂e** over a 20-year period.

Key metrics on this support include:



19 pre-feasibility studies developed with detailed designs, business models & emission mitigation potential.



9 onsite training sessions conducted by experts on composting and BSF with approximately 140 project operators participating



\$412,000 USD worth of equipment provided to scale up project implementation

Financial assistance:

115 financing sources identified and characterized

Limited access to finance is a key barrier to implementing OWM projects. The program addressed this gap by converting project concepts into bankable opportunities and mobilizing concrete financial resources:



22 funding opportunities shared with project developers.



30 funding applications submitted for project implementation.



\$229,035 USD in additional funding leveraged, supporting the expansion or implementation of 8 projects.

In addition, the RO team developed **two strategic reports on accessing finance for implementation**, listing financial support options and resources available for implementing organic waste management projects in the Caribbean and the Pacific.

Pilot Home composting programs:

1,200 composting units have been delivered across the six countries.

The program strengthened engagement among national authorities and citizens, while improving key stakeholders' understanding of the link between organic waste and methane emissions—and the strategic, low-cost actions available to reduce them. In total, Recycle Organics:



Trained 66 monitors



Will mitigate 2,100 tCO₂e if home composting continues over a 10-year period



Reached over 1,000 households, equivalent to over 4,350 people who now compost at home



Contributed to 1,300 tonnes of food waste & garden waste being composted annually



Equipment Provision:

16 ORGANIZATIONS

were supported with the delivery of machinery or equipment for waste treatment.



Saint Lucia

Providing a front loader and screener to the Authority's composting plant to increase treatment capacity and compost quality.



Belize

2 Town Councils received wood chippers to set up new public composting initiatives.



Grenada

Supplying a wood chipper to a Public-Private Partnership to start the country's first composting facility.



Fiji

3 City and Town Councils received composting equipment and market segregation bins to replicate successful market waste composting initiatives.

Capacity Building

Educational Program Networks:



Over 1,100 people engaged through 3 educational networks fostered to facilitate knowledge sharing and connect communities.



Saint Lucia



Hospitality sector network: Participants joined from 22 hotels in 12 countries. 7 hotels received technical assistance to start composting green & food waste in their facilities.



Belize



Composting at Schools: The program engaged over 500 students with no prior knowledge of composting. This empowered them to practice composting at school and share this new skill with family members.



Network for municipal governments: All 9 of Belize's cities and towns participated in capacity-building sessions to strengthen local action and create actionable OWM strategies.



Climate change and waste curriculum: 16 schools are working to improve their knowledge about climate change & sustainable waste practices, bringing Recycle Organics practices into their curriculums.



Samoa



The RO Program provided 21 biogas systems for small farmers, alongside delivering trainings on anaerobic digestion for the Ministry of Agriculture, local trainers & beneficiary farmers. Through capturing methane emissions, these small-scale biogas systems can convert manure and organic waste into renewable energy and nutrient-rich fertilizer. This presents an excellent opportunity to significantly reduce GHG emissions, enhance soil health, lower energy costs, replace less efficient cooking fuels and create more localized, circular economies.



Guyana



22 schools are actively participating in diverting organic waste and initiating composting programs with the involvement of teachers, students and families.



Grenada



Recycling Organics Composting at Schools (ROCS Network): 7 schools are implementing organic waste source separation techniques, composting and using compost to grow produce and plants in school gardens.

Data Management:



Grenada

Conducted a national waste characterization study with local stakeholders and provided training to develop local capacity for future updates. Disaggregated waste generation data and composition is now available to guide decision making for the country's leaders.



Samoa

By developing a dedicated MRV methodology and GHG inventory tool for the waste sector, the RO team strengthened Samoa's ability to quantify the sector's greenhouse gas emissions.



Across All Countries

4 MRV protocols were developed for composting, anaerobic digestion, wastewater treatment and food loss and waste projects. These will assist project developers in monitoring and reporting key data for GHG estimations



Raising Awareness:



100+ knowledge products developed and shared

23 KNOWLEDGE PRODUCTS DEVELOPED

Topics focused on:



Access to financial sources.



Home composting program design.



Policy incentives for source separation.



Communication and educational guides for municipal authorities and schools.



Organic waste management case studies.



94 WORKSHOPS AND WEBINARS

Were held on technical topics, including:



Program design.



Food waste reduction.



Policy incentives.



Methane mitigation project management



Organic waste management practices.

PRIORITY NEEDS AND OPPORTUNITIES

The following table summarizes the priority needs and opportunities identified in close collaboration with local stakeholders, grounded in four years of hands-on experience implementing the RO Program in the region. More details on the prioritized activities are presented below.

Support Type	Medium term	Long term
Policy Support	Support for financial sustainability in the waste sector 	Establishing national-level goals, mandates and strengthening enforcement 
	Support for implementation at the local level 	Developing national-level incentive structures 
	Reforming environmental regulations to include organic waste 	
Project Pipeline	Identifying and developing projects from the agriculture and livestock sectors to leverage economies of scale 	Developing centralized composting projects to achieve waste diversion from landfills 
	Identify and secure sources of funding for project implementation 	Supporting landfill gas capture projects for new landfills 
	Building off of the momentum gained on the biodigester implementation 	
Community Composting	Scaling up the home composting initiatives based on proven pilots 	Making home composting initiatives nationwide programs 
	Promoting cost-effective and locally produced composting solutions 	Scaling and institutionalizing school composting programs 
	Implementing community composting initiatives 	
Educational Programs	Raising awareness of waste management costs and willingness to pay 	
	Expanding stakeholder networks 	
	Strengthening capacity for diverse stakeholders 	
	Promoting successful biodigestion examples 	
Capacity Building	Capacity building activities for project implementation 	Equipment selection and provision 
Data Management	Developing standard MRV protocols 	Updating waste characterization studies 



Policy Support:



Transition from policy and planning tools to applied incentives and enforcement: National and local governments shared that explicitly adding organic waste mandates and goals into national policy frameworks will be key to incentivizing local climate action in the waste sector. Generating this information would support future NDC updates and strengthen ambition towards commitments based on concrete national goals and strategies to reduce methane emissions. Building on the policy support provided by the RO Program, the following list highlights the course of action envisioned by the participating countries:

- **Establish national-level goals, mandates and strengthening enforcement:** As a first step, **Guyana** identified the need to establish organic waste diversion targets under a SWM strategy to advance waste separation at the local level. In parallel, they request support to develop GHG emissions modeling to quantify reduction potentials and establish methane mitigation targets to be included in their NDC. **Fiji** has expressed interest in developing landfill guidelines, including requirements for methane abatement. **Saint Lucia** would be interested in setting organic waste recovery goals for the tourism and hospitality sector. **Grenada, Guyana, Saint Lucia** and **Belize** are looking to receive support to strengthen enforcement mechanisms and data collection systems at the national and local levels. These updated systems are expected to support data-driven decision making.
- **Develop national-level incentive structures:** Several countries now aim to establish incentives for organic waste management alternatives at the national level. **Belize** and **Guyana** are interested in developing concrete incentives to increase private sector participation. For **Grenada**, the incentives should focus on promoting both: alternative technologies to divert organic waste from landfills (i.e., composting, anaerobic digestion, pelletization, black soldier flies), and in parallel, setting regulation and incentives to reduce the reliance on imported chemical fertilizers and increase demand for organic alternatives.
- **Support for financial sustainability in the waste sector:** The lack of waste management fees charged directly to waste generators stands as a challenge faced by most beneficiary countries. **Belize, Guyana** and **Saint Lucia** shared the urgent need to move towards developing cost-recovery mechanisms. For instance, **Saint Lucia** is interested in

developing Pay-As-You-Throw (PAYT) structures for large generators to incentivize in-situ organic waste management and reduce the amount of waste sent to landfills.

- **Reform environmental regulation to include organic waste:** Due to an outdated environmental policy framework, **Fiji** has decided to carry out a thorough review of key regulatory documents. Support will be needed to ensure that this review includes actions, incentives and institutional arrangements to specifically improve organic waste management and promote alternative treatment options. Technical support for this review will be key to achieving the methane reduction targets for the waste sector included in Fiji's NDC 3.0 (6 Gg CH₄ under the unconditional scenario and 13.5 Gg CH₄ under the conditional scenario) submitted to the UNFCCC ahead of COP30.
- **Support for implementation at the local level:** In **Belize**, the local governments require technical and financial support to implement the activities identified under their OWM Plans, which were developed by the RO Program. These plans include pilot activities at the local level. The initiatives identified are diverse—they range from technical support for touristic areas to address the sargassum inundating their coasts, to developing information systems incorporating GPS data for waste collection services and testing fee structures and incentives to improve waste sector investments and cost recovery. Financial and technical support will be key to establishing local composting facilities, piloting segregated waste collection, continuing community/school composting programs/source separation initiatives and sustainably managing market food waste.



Project Pipeline:



Provide technical assistance for project development: In addition to the support provided by the program over the past four years, country representatives expressed the need for further assistance to continue advancing project implementation to achieve emission reductions.

- **Develop centralized composting projects to achieve waste diversion from landfills:** Composting is the most widely implemented technology across participating countries. Several initiatives supported by Recycle Organics are at varying stages of development, ranging from early concepts—such as **Samoa's** proposed composting facility adjacent to

the Tafaigata Landfill and **Belize's** composting sites at transfer stations supported by the Inter-American Development Bank (IDB)—to near-operational projects like the Haags Bosch composting site in **Guyana**, and more advanced efforts such as the expansion of **Saint Lucia's** Deglos facility. Across all countries, there is strong interest in receiving further assistance to advance projects through technology assessment, facility and pilot design, business model evaluation, detailed engineering, and the development of operational procedures.

- **Identify and develop projects from the agriculture and livestock sectors to leverage economies of scale:** Representatives highlighted their interest in exploring opportunities to design cross-sector projects. In **Belize** and **Fiji**, the sugarcane industry has shown interest in optimizing their waste to increase crop yields and reduce soil degradation. In **Grenada**, the National Authority is looking to valorize the country's mounting volume of waste coming from farms, as it faces a growing demand for local meat products.
- **Identify and secure sources of funding for project implementation:** Limited financial resources remain one of the main barriers to project implementation. National representatives requested support to identify funding opportunities, develop applications and strengthen proposals to secure financial resources. For example, **Belize's** municipalities require access to international funding sources to implement the OWM plans developed under the RO Program. Projects supported in **Fiji, Grenada, Saint Lucia and Samoa** also require additional financial resources to continue advancing towards implementation. For instance, **Saint Lucia** expressed interest in replicating the market source-separation programs implemented in Fiji.
- **Support landfill gas capture projects for new landfills:** **Fiji** has requested assistance from RO to incorporate methane capture in the initial designs and procurement documents for the new landfills planned in the Northern and Western divisions—these are planned to be designed in the near term. Additionally, guidelines that provide clear operational direction, strengthen compliance with environmental standards and support the effective and sustainable management of the Naboro Landfill have also been deemed necessary.
- **Continue the momentum gained on biodigester use in the agricultural sector:** **Samoa** has ramped up its number of biodigesters in recent years and has built capacity in both the public and private sectors, which now more widely recognize the opportunities this technology provides to reduce GHG emissions, enhance soil health, lower energy costs and replace polluting cooking fuels. Continued support will be key to achieving widespread implementation for biodigestion across the country. The strong interest in the agriculture sector can potentially be expanded to the tourism sector, as well as in schools and rural communities.



Community Composting



Expand decentralized composting programs to scale household-level organic waste diversion: Decentralized composting is one of the most cost-effective ways to reduce methane emissions and manage household organic waste in SIDS. Beyond its environmentally positive impact, it has numerous economic benefits, including reducing transportation and disposal costs for local and national governments. Building on the success of the pilots implemented with Recycle Organics, country representatives have requested targeted technical and financial support to scale these initiatives into country-wide programs and maximize their climate and economic benefits.

- **Scale up home composting initiatives based on proven pilots:** Based on the results from the home composting pilot, all country representatives have expressed strong interest in scaling the initiative to country-wide programs. **Saint Lucia** will receive 2,000 composting kits to expand the initiative to southern communities through World Bank funding, while **Guyana**—based on its experience with the program—is assessing the purchase of an additional 200 kits using national resources. In **Belize**, organizations, such as the Rotary Club, the World Bank (through the Blue Cities and Beyond Project) and the IDB (through ICOAST) have demonstrated strong interest in supporting expansion in targeted communities. Countries have requested support to coordinate the implementation of these opportunities and to continue identifying and securing additional funding to scale the program.
- **Promote cost-effective and locally produced composting solutions:** Transport and customs represented a significant share of program costs, averaging 24% of the total cost. To enable cost-effective nationwide expansions, stimulate local economic development and accelerate community uptake, countries are seeking targeted technical assistance to support local entrepreneurs and small businesses in the development and production of composting equipment and local solutions. This approach aims to build local capacities, create new green business opportunities and retain value within local economies, ensuring long-term sustainable value beyond the life of the project. Specifically, **Grenada** has requested support to explore composters produced from locally available materials, and in **Belize**, the Recycle Organics team has already

assessed and adopted locally manufactured options, including composters made from repurposed wood and recycled plastic.

- **Scale and institutionalize school composting programs:** School composting pilots implemented in **Belize**, **Guyana** and **Grenada** have demonstrated how teaching sustainable practices to children can create real agents of change, engage families and strengthen community awareness. Building on these results, countries are seeking support to scale successful pilots to the national level or to replicate the model in new contexts. The program can provide targeted support through the development of educational materials, “train-the-trainer” sessions with schools, matchmaking with funding opportunities and the formal integration of composting into national curricula. **Saint Lucia** and **Fiji** are interested in implementing new school composting initiatives. In parallel, **Guyana** and **Belize** are advancing efforts to institutionalize composting through the national school curricula route.

Implement community composting initiatives: Community composting provides a practical solution for households without space for on-site composting, enabling participation through shared systems in condominiums, community gardens, soup kitchens and other communal spaces. Building on successful experiences supported by the program, countries are seeking support to replicate and scale these models. In **Belize**, a pilot has already been implemented with HelpAge, an NGO operating a soup kitchen, thanks to the support and equipment provided by the RO Program. **Grenada** is now looking to develop new pilots, including two in condominiums and one in a public space. The program could provide technical assistance for these initiatives’ design and early-stage implementation.



Educational Programs



The main interest of the beneficiary countries on educational topics focuses on fostering a deep public understanding regarding the value and costs of waste services, expanding partnerships that can mobilize broader participation and strengthening the capacities required to sustain source separation and treating organic waste. The next steps outlined to accelerate progress are:

- **Increase awareness of waste management costs and willingness to pay:** Government representatives agreed that the perception of the general population towards waste management can be an important barrier to implementing local action. To tackle this challenge, **Belize** is interested in raising awareness on the importance of paying fees through educational programs that disseminate the link between organics, methane, climate change and service costs, as well as the important connection between fees, revenues and investments that improve service quality.
- **Expand stakeholder networks:** **Grenada** is committed to expanding the Recycling Organics Composting at Schools program to further support its nationwide educational goals and expand efforts on source separation, while producing their own rich compost to nurture their school gardens and orchards. **Guyana** shared its interest in following the steps of Grenada to build a school network through the local schools that have started composting under the RO Program. For both **Grenada** and **Guyana**, integrating these programs into nationwide school curricula will be crucial as a next step to consolidate this progress and momentum.
- **Strengthen capacity for diverse stakeholders:** **Grenada** envisions expanding organic waste separation efforts to additional stakeholders. In one hand, farmers need to build capacities to integrate source separation and other sustainable waste management practices into their production practices. On the other hand, regarding the operational side, waste sector workers need to prepare to start collecting organic waste separately, while the Grenada Solid Waste Management Authority builds internal capacity to strengthen the Integrated Resource Recovery Unit to support those efforts. **Belize** would like to continue building local-level capacity for government officials to execute separate organic waste management and treatment initiatives. **Guyana** is looking to create a network of markets that actively work on separating organic waste at the source.
- **Promoting successful biogas examples:** Biodigestion systems in **Samoa** are concentrated in small communities, colleges and small-scale farms. Showcasing these successful programs can create interest in other schools and communities, while also increasing biogas use across more farms, for which the national government has expressed support.

Capacity Building



Build capacity and co-finance equipment for waste management: To adopt and sustain organic waste diversion practices, strengthening local capacity is essential to ensuring quality, safety and compliance with regional regulations and standards. Country representatives expressed the need for technical training and equipment to support organic waste management initiatives.

- **Capacity building activities for project implementation:** Stakeholders in **Belize** and **Guyana** require operation and maintenance training for new composting facilities developed with support from the Recycle Organics Program. In **Fiji**, several town and city councils are initiating market organic waste diversion programs with support from

Recycle Organics. For these initiatives, training is required for market vendors and customers to ensure clean waste streams and effective value chain integration.

Equipment selection and provision: Representatives from several countries highlighted the need for specific equipment to operate composting plants, such as **Samoa** and **Saint Lucia**, as well as collection trucks for municipal organic waste—a need **Fiji** has brought up. The program would identify the most suitable equipment options and help throughout the acquisition process.



Data Management



Improve data collection and information management in the waste sector: With support from the RO Program, participating countries have made significant strides in data collection efforts, including the development of NDC targets and MRV indicators for the waste sector in **Fiji**, an MRV data collection methodology and GHG inventory tool in **Samoa** and an updated waste characterization study in **Grenada**. Country representatives emphasized the need to continue strengthening data collection through the following activities:

- **Develop standard MRV protocols:** Building on Samoa's experience, **Grenada** is considering the development of MRV systems to identify data gaps that could be addressed and systematized in the pilots with large generators. These pilots would also allow for testing different data collection scenarios aligned with existing national data collection systems.
- **Update waste characterization studies:** Accurate waste data was identified as a critical need for strategic planning and project design. Following Grenada's progress, representatives from **Samoa** expressed interest in conducting a waste audit to update their 2021 Waste Audit, while building local capacity to replicate audits in future years.



RECYCLE ORGANICS

Reducing Methane
From Waste

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