PROJECT TITLE	Integrating Informal Waste Workers and AI Waste Categorization in Lesotho		
Implementing Agency	UNEP IETC		
Other Partners	Ministry of Environment of Lesotho, Maseru City Council, Institute of Global Environment Strategy, African Reclaimers Association	Cooperation with JICA	Yes
Project Location	Urban and peri-urban communities in Lesotho		
Principal purpose	To enhance sustainable waste management in Lesotho by formally integrating informal waste workers—especially women—into the national and municipal waste systems and strengthening their role through policy engagement, cooperative development, and capacity-building in health, safety, and entrepreneurship. The project will thus support development of waste recycle and recovery business in which the existing waste informal sector can be integrated. At the same time, the project will deploy accessible, AI-powered household waste categorization tools that support waste segregation at source, reduce open burning, and improve data-driven planning. These dual objectives aim to increase recycling rates, promote social protection and recognition for marginalized workers, development of private recycling business, and bridge the digital divide in waste management. By leveraging recent national developments such as the Waste Management Information System (WMIS) and aligning with Lesotho's legal framework on waste segregation, this initiative will foster inclusive, tech-enabled, and community-driven waste solutions that contribute to both environmental sustainability and social equity. UNEP-IETC and UNDP-Lesotho are implementing a series of interventions to reduce, recycle and manage solid waste in cooperation with JICA. This project will work closely with the ongoing UNEP-UNDP waste management interventions in Lesotho.		
Main activities	**Objectives:** To promote inclusive and sustainable waste management in Lesotho by integrating informal waste workers—particularly women—into national waste management systems and waste recycling business and to deploy AI-based household waste categorization tools that improve recycling rates, reduce open burning, and enable data-driven decision-making. **Key Activities:** • **Activity 1. Assessment and Stakeholder Engagement for Inclusive Waste Management** - Conduct a comprehensive mapping and needs assessment of informal waste workers (waste pickers and waste reclaimers), with attention to gender-specific barriers, health risks, and working conditions. - Analyze existing national waste management policies, to identify gaps in integrating the informal sector. - Organize multi-stakeholder consultations with government agencies, municipalities, NGOs, private sector actors, and informal workers to co-develop integration strategies and policy recommendations. • **Activity 2. Capacity-Building, Cooperative Formation, and Enterprise Support** - Facilitate the formation of cooperatives or worker associations to improve bargaining power, access to financial services, and social protection. - Provide business development support and mentorship for establishing small recycling enterprises led by informal workers, including women and youth. - Develop recommendations for policy and legal framework to facilitate the integration of the informal workers • **Activity 3. Implementation of AI Waste Categorization and Public Engagement** - Develop and deploy AI-based household waste image analytical tools adapted to local needs and integrate them with Lesotho's Waste Management Information System (WMIS) in conjunction with the ongoing waste characterization exercise in Lesotho. - Train both informal workers and households in the use of the tools to improve waste segregation and tracking (together with Activity 2 and the ongoing UNEP/UNDP project). - Launch awareness campaigns to encourage household waste separation and reduce open burning, emphasizing the value of informal workers in sustainable waste management. Under **Activity 2,** an investment forum will be organized inviting product producers, recycling companies, Japanese companies in South Africa. Most products in Lesotho are imported from South Africa and most recyclables collected in Lesotho are transported to South Africa. Under **Activity 2**, communications about this project will be conducted in all capacity building events. In the communication on this project, support from the Government of Japan and People of Japan will be clearly mentioned. Japanese embassy in South Africa will be invited to participate in key meetings, including the proposed investment forum. **Expected Results:** • Improved social and economic inclusion of informal waste workers		

		• Enhanced community-level waste management through AI innovation • Women's leadership in the Circular Economy	
Applicable goal (s) of SDGs		• SDG 5: Gender Equality (majority of waste informal sector is women and this project will ensure women are not excluded in the informal waste worker integration) • SDG 12: Responsible Consumption and Production (the recycling rate will be increased through development of recycling business) • SDG 11: Sustainable Cities and Communities (waste management and disposal at the municipality levels will be less burdened by introduction of recycling business) • SDG 8: Decent work and economic growth (working conditions for the waste informal workers will be improved and their livelihoods improve)	
Duration		1 March 2026- 27 February 2027	
Target goals		**Indicator(measure)**	**Target value(outcome)**
(key three goals)	***Goal 1***	Availability of cooperatives or associations of waste pickers	**At least 1 association or cooperative group** in targeted communities by February 2027
	Goal 2	Enable AI-supported household waste categorization integrated with national systems	**1 pilot system** deployed in Lesotho and linked to WMIS
	Goal 3	Support policy and legal frameworks for informal waste worker integration	**1 set of recommendations** developed and submitted to government
Estimated budget & its breakdown		▪ Activities: 141,763 / Personnel, Coordination & Technical Backstopping: 46,000/ communication and M&E 5,000 ▪ PSC 13%: 25,059 / levy 1%: 2,178 **Total: 220,000**	
Urgency		Delaying this project to the next fiscal year would miss critical policy and political windows in Lesotho. The national Waste Management Information System (WMIS) is currently in its initial rollout phase, and this presents a rare opportunity to integrate AI-driven waste categorization tools and informal sector data from the outset. Additionally, national discussions on Extended Producer Responsibility (EPR) and informal sector recognition are gaining momentum, and this project is directly informed of those dialogues with evidence-based models. Waiting another year would not only reduce the policy relevance and uptake potential but also risk losing alignment with the global spotlight on informal economy integration at the Second World Summit for Social Development in November 2025. Furthermore, informal waste workers—particularly women—continue to operate under hazardous and unrecognized conditions, and further delays would prolong their exposure to health risks and economic insecurity.	
Necessity		Japan brings unique expertise and leadership in both inclusive waste management systems and ethical digital innovation, making it an ideal partner for this initiative. Japan has long promoted the 3Rs (Reduce, Reuse, Recycle) globally and supported community-based waste systems that emphasize inclusivity, safety, and circularity—principles central to this project. The proposed activities directly build on the ongoing UNEP-UNDP waste management project in Lesotho, which has the objective of developing markets and business for recycling in Lesotho, which would require integration of the existing informal waste pickers and reclaimers. Japan is also at the forefront of AI innovation for environmental sustainability, offering tested technologies and governance frameworks that can be adapted for use in low-resource settings like Lesotho. No other donor combines this dual expertise in informal sector integration and AI-enhanced waste solutions. Supporting this project would reinforce Japan's international role in advancing SDG 12 (Responsible Consumption and Production), digital transformation, and social inclusion—while providing a scalable model for other countries in Southern Africa.	
Unpredictability		The urgency and scope of this project only became clear after March 2025, due to two key developments. First, the Government of Lesotho launched its national Waste Management Information System (WMIS) in April 2025, creating an unexpected opportunity to align informal sector integration and AI-driven tools with a national digital platform from the outset. Second, consultations held in early 2025 as part of the EPR framework development process revealed significant policy gaps regarding informal waste workers' inclusion and digital readiness—gaps that were not previously documented or prioritized. Additionally, recent field assessments exposed worsening health and economic risks faced by informal waste workers due to increased open burning and the absence of formal engagement mechanisms. These converging factors were not anticipated during prior planning cycles, making it essential to respond with targeted support within this budget year.	
Non-substitutability		This project addresses a unique intersection of urgent social, environmental, and digital priorities that no existing programme or donor initiative in Lesotho currently covers. While some development partners support general waste infrastructure or awareness-raising, none are addressing the formal integration of informal waste workers in combination with AI-based household waste categorization tools. The supplementary budget offers a critical opportunity to scale up Japan-funded innovations from other countries (e.g., Cambodia) and adapt them to a new national context at a moment when digital	

	infrastructure (WMIS) is being introduced and policy space for EPR and informal sector inclusion is actively evolving. Missing this timing would mean losing alignment with the rollout of these systems, and future funding windows may no longer allow integration at the foundational stage. No alternative source of funding is currently available to implement such a focused and timely intervention that leverages Japanese expertise in both waste management and digital transformation.
Other reference(s)	This project offers Japan a strategic opportunity to demonstrate leadership in inclusive waste management, digital innovation, and gender-responsive development. The project implementation is led by **Takehiro Nakamura, Head, UNEP-IETC** and technically supported by **Ms. Junko Fujioka, Gender Focal Point of UNEP-IETC**, who will provide technical guidance on informal sector integration and AI-based waste categorization. The project aligns with Japan's SDG priorities—especially on digital transformation, circular economy, and gender equality—and supports the Women, Peace and Security (WPS) agenda by empowering women informal workers through leadership, digital skills, and entrepreneurship. It also creates pathways for collaboration with Japanese private sector actors in AI and in waste recycling and material recovery, while complementing **JICA's engagement in Southern Africa**. JICA has been contacted and a technical request for JICA from the Government of Lesotho on solid waste management was already transmitted. The project is well-timed to support Lesotho's new Waste Management Information System (WMIS) and ongoing EPR policy development (under the UNEP-UNDP project). Though focused on Lesotho, it is designed for regional replication in countries like Eswatini and Malawi. Youth engagement and digital inclusion further promote regional integration and inclusive governance, offering mutual benefits for both Japan and the partner country.

Annex 1: Budget

UNEP-IETC Nairobi	Manpower	Month/Unit	Unit Cost	Total Cost
UNEP IETC_Personal cost				**$ 36,000.00**
IETC Personnel Cost				
Gender Focal Point - Junko Fujioka (30%)	1	12	$ 3,000	$ 36,000.00
UNEP IETC_Travel				**$ 10,000.00**
Oversea travel expenses (2 missions to Lesotho)	1	2	$ 5,000	$ 10,000.00
Activity Costs				**$ 146,763.00**
(Activity 1) Assessment and stakeholder engagement for inclusive waste management				**$ 30,000.00**
Expert fee, fieldwork, workshop with government, NGOs, private sector and informatl workers (IP contract)				$ 30,000.00
(Activity 2) Capacity-building, cooperative formation, and enterprise support				**$ 46,763.00**
training on safety, recycling, entrepreneurship, and digital skills for informal workers, especially women and youth	IP			$ 30,000.00
investment forum in Johannesburg	travel	1	$ 16,763	$ 16,763.00
(Activity 3) Implementation of AI waste categorization and public engagement				**$ 65,000.00**
delopment of AI waste categorization tools integrated with WMIS, including training for users and technical support	for- profit company procurement through UNDP	1	$ 65,000	$ 65,000.00
deployment of the tools	using the same budget under Activity 2			
Comminucation, M&E, Contigency				**$ 5,000.00**
visibility and communication, M&E, contigency (5%)	lump sum			$ 5,000.00
		Program Total		$ 192,763.00
		13% PSC		$ 25,059.19
		1% Levy		$ 2,178.22
		Grand Total		$ 220,000.41