Circular Economy Infrastructure for Healthcare Operations of Xieng Khouang Province, Lao PDR

Project Location:	Asia / Lao PDR
Project Period:	December 2025 ~ December 2027
Project Funding:	USD 560,000
Theme:	Healthcare Waste Management / Circular Economy
Project Code:	LA045

Donor

KOFIH

Partner Organizations

World Health Organization

Project Summary

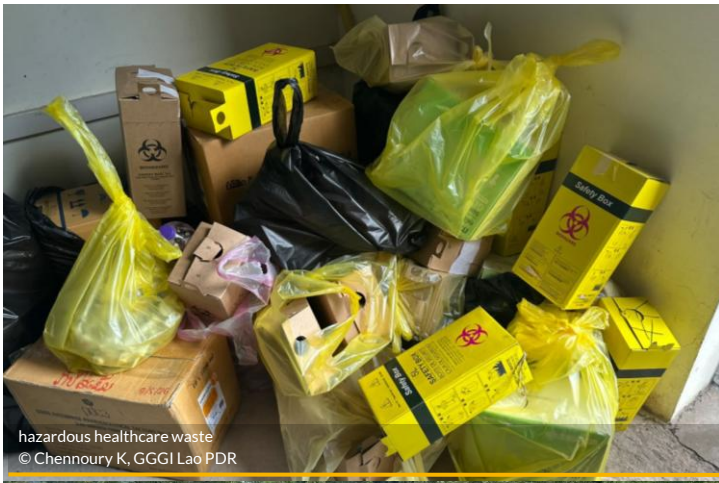
This project establishes a transformative Circular Economy Infrastructure for healthcare waste management operations across Xieng Khouang Province. It introduces a resource-recovery model for project hospitals and establishes a centralized hazardous healthcare waste treatment hub with advanced low-carbon technologies at Pek District. By deploying low-carbon logistics for hazardous healthcare waste and introducing waste-to-resource systems that convert recyclables into income, this intervention directly contributes to Lao PDR's National Green Growth Strategy and the Health National Adaptation Plan. This project builds a robust climate-resilient healthcare waste management system, serving as a national benchmark for the Greater Mekong Subregion.

Project Objectives

- Strengthen regulatory frameworks and technical capacity for sustainable healthcare waste management.
- Standardize segregation and install secure collection infrastructure at six target hospitals.
- Optimize transport and treatment systems to ensure safe disposal and minimal environmental impact.

Strategic Approach

- **Centralized infrastructure -** Construct a specialized incinerator with advanced air pollution controls in Pek District to process medical waste from six provincial districts.
- **Eco-Friendly Treatment -** Install autoclaves for non-combustion thermal processing and treatment, ensuring safe hazardous waste disposal without harmful emissions.
- **Waste-to-resource -** Implement rigorous source segregation to minimize waste volume, divert recyclable waste and generate new income streams for local hospitals.
- **Low-carbon logistic -** Deploy a low-carbon transport fleet to safely move sorted healthcare and hazardous waste from six districts to the central treatment facility.



hazardous healthcare waste
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Current precarious waste disposal site in Xieng Khouang.
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Waste storage and segregation facility model.
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The Pek District Centralized Hazardous Healthcare Waste Treatment Hub

Powering a Circular Economy through Advanced Healthcare Waste Management.

The establishment of the Pek District Centralized Hazardous Healthcare Waste Treatment Hub serves as the primary infrastructure backbone for this initiative. By integrating advanced non-combustion technologies (autoclaves) alongside high-standard incineration with air pollution controls, the facility provides a secure, climate-resilient solution for project healthcare facilities in Xieng Khouang Province. This model ensures the safe disposal of hazardous medical waste while operationalizing a system that converts recovered recyclables into income streams, establishing a scalable benchmark for circular economy operations in the region.

A provincial landfill site.
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Context and Background

In Xieng Khouang Province, health facilities generate approximately 14,600 tons of solid waste annually, yet management remains precarious. Current practices rely heavily on open burning and unsecured burial, with hazardous waste frequently mixed into municipal streams.

A provincial landfill site.
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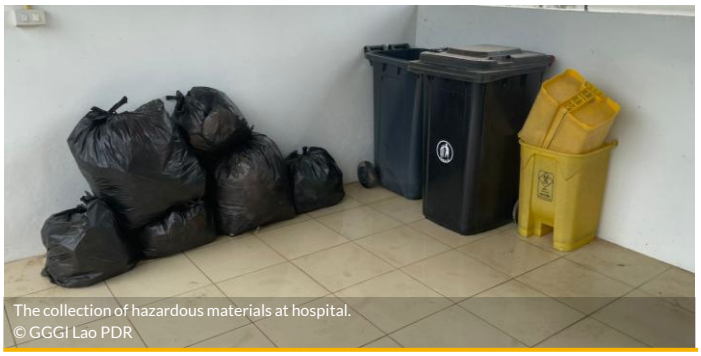
Only 30% of health facilities follow formal disinfection protocols. These conditions pose significant risks of secondary infections and toxic pollution in a region housing a UNESCO World Heritage Site (The Plain of Jars). This project addresses these gaps by mitigating the high carbon footprint and public health hazards associated with improper disposal.



The collection of hazardous materials at hospital.
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Project Expected Outcomes and Results

This project is comprehensively promoting a circular economy in Xieng Khouang Province, delivering significant benefits to healthcare systems and local communities including strengthened regulatory frameworks, enhanced professional capacity for staff, modernized infrastructure for waste management, implementation of non-combustion treatment technologies, low-carbon transportation systems, the diversion of hazardous materials from landfills, and the development of climate-resilient operational standards.

100%
(Target) of six project hospitals implementing proper sorting.

1 Centralized Plant
Facility operationalized for province-wide safety.

2 Policies
Integrate HCWM into MSWM regulation and update HCWM tariff System for Xieng Khouang province.

Group photo of project partners infront of Xiengkhuang province hospital
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