

SMART Siem Reap

Sustainable Waste Management and Agroecology for Resilience and Green Transition in Siem Reap

Project background

The mostly rural district of Sotr Nikom, in Siem Reap province, has a population of 111,000 and significant prospects for economic development. This district is estimated to produce 54 tons of waste daily; however, solid waste collection is relatively new, with services provided by CINTRI only since late 2019. These services were legally and formally contracted in 2020 by the district authority's Department of Agriculture, National Resources and Environment, which has limited staffing and budget to oversee their mandate of managing urban solid waste management (SWM).

CINTRI's current service route covers only the central district Dam Daek commune, where the district's largest local market is located and more than one ton of organic waste is discarded daily. It is here that the farmers of the agricultural cooperative Ecofarm, which has been supported by GRET's APICI project for over 10 years, sell safe fruits and vegetables cultivated following agroecological principles.

The demand for safe foods, large quantities of organic waste, and improved solid waste services presents an opportunity to explore recovery of organic waste and its transformation into compost, which can in turn increase farmers' production to meet the demand.

It is in this context that GRET, Ecofarm, and the waste management stakeholders of Sotr Nikom district are bringing together SWM expertise, vermicomposting technologies, and agricultural knowledge to collaborate on the first pilot phase of the SMART Siem Reap project.

Prospects

It is expected that all 111,000 inhabitants of Sotr Nikom will benefit indirectly from the project via improved waste management services in Dom Daek, as well as from strengthening of the district authorities' capacity to ensure sustainability of service management. Similarly, farmers from Ecofarm and other cooperatives, as well as purchasers of the compost marketed by Ecofarm, will benefit from the project. It is possible the compost may reach a wider clientele of indirect beneficiaries, which will be assessed at the end of the project.

Organic waste sorting awareness-raising campaign at Dam Daek market, Siem Reap



Project objectives

- Optimize the waste collection and recovery chain.
- Improve vermicomposting practices in Sotr Nikom.
- Promote compost to farmers as a valuable resource.

Key project figures

- Support for structuring of waste management and organic waste recovery services.
- Raising waste producers' awareness on sustainable solid waste management practices.
- Promotion, valorization, and use of organic waste for compost.
- 6 to 8 tonnes per month of organic waste is collected separately from the Dam Daek market.
- 2.5 tons per month of vermicompost are produced.

Agroecological farm at Ecofarm using compost as fertilizer



Project Actions

Support for the structuring of organic waste management and recovery services.

- > Training in collection techniques and methods for collectors and the district as part of SWM.
- > Engineering design and construction of vermicomposting unit
- > Training in the administrative and financial management of a composting unit for the operator (Ecofarm).
- > Training/action for the commissioning, maintenance, and operation of a vermicomposting unit.
- > Training/guidance of the district authorities for general capacity building in SWM.

Raising awareness of sustainable solid waste management practices.

- > Design of communication tools for conducting awareness raising campaigns with all stakeholders including the district to sort organic waste at Dam Daek market, as well as to initiate a change in practices on issues of waste management in general.

Promotion, valorization, and use of organic waste in compost.

- > Marketing campaign with target farmers, fertilizer wholesalers, and cooperative members.
- > Laboratory and demonstration plot tests over two crop seasons.

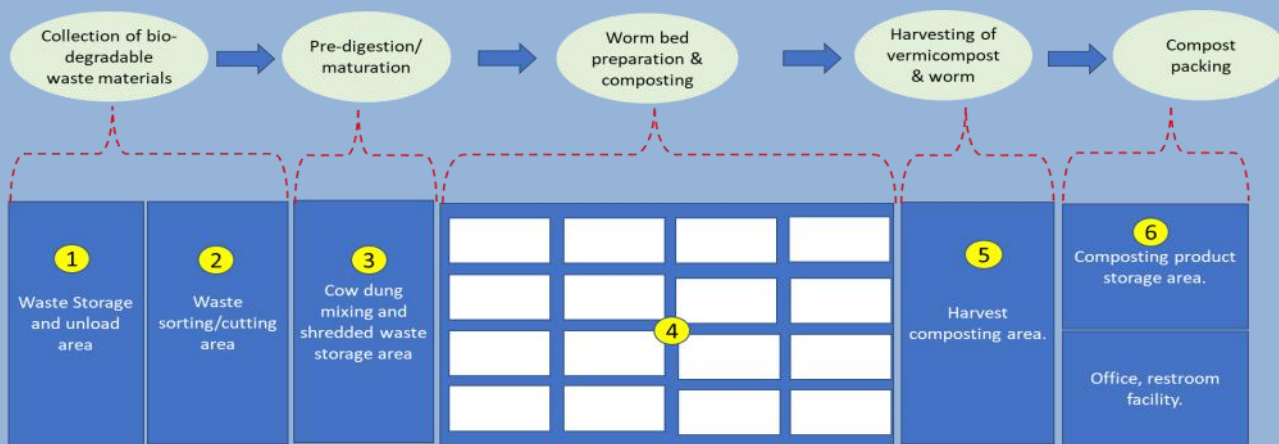


Vermicomposting operation facility at Sotr Nikom district in Siem Reap province

EXPECTED RESULTS

- The pilot vermicomposting unit is designed, constructed, and in operation.
- The system for separating organic waste at source is designed and implemented at the Dam Daek market.
- Local authorities in charge of SWM are trained and sensitized to sustainable waste management.
- The rate of coverage of the operating expenses of the composting unit is 50% at the end of the project.
- At least 20% of the organic waste generated in the Dam Daek market is sorted at source at the end of the project.
- The waste producers at Dam Daek market (100%) are made aware of the use of the dumpsters for sorting waste.
- Awareness kits on waste recovery and ecology are designed, tested and used by the municipality and the operator.
- Compost quality is confirmed through laboratory and field tests.
- At the end of the project, the operator is selling at least 70% of the compost produced.

Vermicomposting Operation Process



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