The UN Secretary-General's Advisory Board on Zero Waste

Development of waste to wealth channel from Non-recyclable and non-biodegradable Municipal Solid waste to energy recovery channel

Zero waste good practice

Siam City Cement, INSEE Ecocycle

Colombo and across 7 provinces, Sri Lanka

Disclaimer

This good practice is based on the information submitted by the owning organization. The language is based on the submission and only minor edits have been made.

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About

Synopsis

The Waste-to-Wealth Channel Development Project aimed to address issues related to 360 open dump yards across the country, in urban areas lacking effective waste management solutions. The initiative targeted a substantial increase in material supply, from 100 tpm to 2000 tpm, a goal successfully realized between 2012 and 2022. Significantly, achieving this vision necessitated a comprehensive transformation in the behavioral dynamics of the entire waste management channel. This transformation was accomplished through a collaborative approach involving both private and public partnerships. Personally engaged from conceptualization to implementation, the initiative was ultimately standardized by establishing connections with 100 local authorities and private partners capable of providing viable solutions. My efforts were acknowledged when I received the title of Project Initiator from His Excellency, the President of Sri Lanka, during the environmental project evaluation conducted by the Central Environmental Authority.

Implementation period	Country	Location
2012 - 2022	**Sri Lanka**	**Various**

Stakeholders and Partners: Ministry of Local government, Ministry of Environment, Central Environmental Authority, Local Authorities (Urban councils, Pradeshiya Sabhas). Private partnership with INSEE Eocycle Lanka Pvt Ltd as the solution partner.

Connection to Zero Waste

Waste reduction took place from 0 to 2000 Mts per month and it is continuing to the future as well. All materials are non-biodegradable and non-recyclable. This initiative supported for some of the Local authorities to zero the onsite disposal of the Municipal solid Waste Management (MSW). Waste to value creation while changing the behavioral change of the government waste management channel.

Contribution to Sustainable Development Goals

Goal 1; End poverty in all its forms everywhere- this supported the waste pickers in the dump yard to recover more valuable materials. Supporting their livelihood development.

Goal 3; Ensure healthy lives and promote well-being for all of all ages- By reducing waste piling up in the dump yards this initiative helps to ensure healthy lives.

Goal 5; Achieve gender equality and empower all women and girls- most of the waste picking community are women. This supports to improve their daily earnings and gave more value for their work.

Goal 8; Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all- This initiative supported to standardize the haphazard waste picking operation in the waste dump yards.

Goal 12; Ensure sustainable consumption and production patterns- The initiative supports to sustainable consumption as it automatically reduces the waste. therefore reduce the scarce material and energy consumption. Part of the waste material divert to recycling channels and part goes the energy substitution.

Goal 13; Take urgent action to combat climate change and its impacts- Supported to reduce waste in almost 100 dump yards. Therefore reduce the CH4 emission in the waste open dumps. Also it is act as alternative fuel in the industrial applications, unless it is required conventional fuel sources such as coal.

Background, Challenges and Objectives

"The initiative supports the reduction from 0Mt to 2000Mts of waste being dumped and used as an alternative energy source."

1. The initiative supports to reduction from 0Mt to 2000Mts of waste being dumped and used as an alternative energy source. I was the initiator of this initiative in 2011 - 2021 period.

2. Initially project was started by connecting a few local authorities, later it became a sustainable waste-to-energy conversion channel and some of the local authorities didn't have the infrastructure to manage their waste without this channel of disposing of waste. Hence the initiative automatically become a need of such local authorities.

3. Initially workers of the waste collection channel were totally negative about the additional work that they needed to do. Ground-level capacity building was supported to convince them. Communication and convincing power played major role there. Political influence had challenge. However, enabling systematic methodology and the process enable to overcome such interference. Continuous capacity building supported the success of the whole initiative over past 10 years.

4. Non-recyclable and non-biodegradable waste material disposal had issue without proper disposal mechanism at the local authority level. Choosing this waste segment and converting it to alternative fuel source made the practical solution in the country's waste problem.

5. Reduce waste volume in waste dump site and converted in to valuable fuel source was the main goal.

Actions and Implementation

In the actions and implementation chapter, the steps taken to achieve sustainable waste management are outlined.

1. Problem identification and lobbying the respective stakeholders.
2. Capacity building and awareness on waste segregation.
3. Piloting the project with key local authorities
4. Rewarding the successfully implemented sites, after action reviews.
5. Continuous monitoring and expanding the channel up to 100 Local authorities.

Community engagement: Address the issues of waste picking and waste collection channel workers concerns. Reward them for good practices.

Engagement with local authority officials to develop the proper material supply channel. Held progress reviews on frequent basis and recognizes the best practices.

Monitoring; Monthly progress is shared. Annual reviews held and best practices were rewarded.

Outcomes and Impact

1. Achievement: Fully establish waste material solution channel development from 0Mt per month to 2000 Mts per month through out to period of 2012 to 2022. and is continuing for future. Benefitted by Local communities, health sector, Private organizations.
2. How success measured. - Monthly progress reports were shared with local authorities. Each year target declared and target achievement monitored, well performed groups were rewarded. Number of beneficiaries; all local communities related to 100 local authorities out of 360 local authorities in the whole country. Volume securely disposed were 0Mt to 2000 Mt per month. Energy generated from the waste were benefits.
3. Continuous monitoring, evaluation and recognizing supported for success of behavioral changes of the waste collection workers. Increased volumes over the period supported the further improvement of the project. Monitory benefit that private organizations gained by substituting the conventional energy source supported the sustainability of the initiative and expand its capacity.
4. This initiative was a win-win situation of all the parties involved. No communities were disadvantaged during the project cycle.
5. Yes. it has medium- and short-term impacts- where it is a solution for waste, partly support for livelihood development of waste pickers. As log term solution for energy crisis.

0Mt to 2000 Mts

Establishment of waste solution channel development from 0Mt to 2000 Mts per month between 2012 and 2022, benefiting local communities, the health sector, and private organizations.

100 communities

Beneficiaries include 100 local communities out of 360 in the country.

Behavioural change

Continuous monitoring, evaluation, and recognition facilitated behavioral changes in waste collection workers.

Replicability and Scaleability

1. It is successfully implemented in 7 provinces out of 9 in the country. It can replicate anyware in the world too.
2. Need disposal facility capacities. Here it was using Cement kiln co processing to dispose the material without any infrastructure improvement in disposal facility side.
3. High urbanized areas are well suited. As transportation charged would be high if there is less waste materials to cover overhead costs. Even semi urban areas too can manage if the volume is sufficient for cover operational cost.
4. Continuous awareness and capacity building, Systematic process in the implementation. Sustainable business model to sustain the initiative after main project period. Avoid political interference.

Inclusion and Innovation

1. 1. Yes, under the public-private partnership (PPP) model all these stakeholders were involved.
2. 2. First provide the solution at a cost for the private partner, then prove the benefits of the solution to all stakeholders. Next Need creation among the stakeholders. Finally, all agreed on the cost-sharing solution after seeing the proven benefits. This is the main reason for sustaining the initiative after the main project period and for the future.
3. 3. How to win the mindset of different communities in the society and multi-stakeholders was the key distinguishing feature. Converting waste material to valuable fuel in existing infrastructure is innovative feature.

Accountability and Sustainability

1. Most of the gaps are being addressed. The reduction of material transportation needs to be further looked at.
2. Yes, it is being monitoring from both ends. Local authority and disposal partner end. This can easily replicate

Financial Data

1. Annual operation cost. Mainly the material partial size reduction and handling cost to disposal facility. (40 USD/Mt) . The aterial transportation cost depends on the distance for facility and material collection location. (50-70 USD /Mt). Conventional fuel substitution benefit aprox 80- 100 USD/Mt of waste (change depend on material quality)
2. At the moment no extremal finding. This is self-sustaining model.
3. Operation coordinators from both sides are allocated.
4. System for volume Monitoring.

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