

REGIONAL WORKSHOP ON PLASTIC WASTE MANAGEMENT

Developing a Strategic Plan for Solid Waste Management Central Province, Sri Lanka

10 October 2019







INTRODUCTION

Solid waste has become a common and challenging issue all over Sri Lanka. Still, the country is trying to find an appropriate solution to minimizing the threat created by solid waste to the country's environment. Huge investments and uncountable awareness programs have done very little to the expectations of the waste management process in the country. It is an obvious fact that the generation of waste is gradually increasing and the solutions applied so far have not been able to manage the issues created by the increasing volume of waste.

It has been recorded that in the Central Province of Sri Lanka, the waste management process has become a critical problem due to several limitations including geographical reasons being the most prominent. Its geographical limitations have created impacts more on air, water, and soil pollution and compounding of all these issues have grown the problems to unmanageable proportion. Especially, the air pollution in Kandy Town has been recorded at the highest level due to the city being located in a valley surrounded by mountain ranges from all the directions. In addition to that, most of the water sources which are originated from the mountains of Central Province are being threatened due to pollution caused by indiscriminate dumping of waste. Therefore, the increasing environmental pollution created by improper waste management should be tackled with appropriate strategies and more participatory approaches.



Although the waste management process in the Central Province is becoming a more challenging issue for the authorities as well as for the people there is no collective effort to formulate strategies for addressing this issue. However, evidence shows that there are some best practices in the country as well as in Asia – Pacific Region by involving the relevant stakeholders in Municipal Solid Waste Management which could be considered for application in our context. Proper identification of possible inputs/engagement from different stakeholders to address specific aspects of Solid Waste would help in achieving collective responsibility to manage the Solid Waste problems in the Province. In this context, waste generators and collectors can play a vital role in managing a considerable proportion of the large waste problem in a city or region. The consultation carried out under the IGES Centre Collaborating with UNEP on Environmental Technologies (CCET), United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC), CITYNET project. It has been found that there is lack of coordination between the waste generators and waste collectors. In this regard, HELP-O, CCET, UNEP IETC and CITYNET were planning to discuss with relevant stakeholders about the importance of networking and coordination among stakeholders in waste management including private sector as well as importance of strategic plan in waste management for local governments. The aim of above discussion was also to create a common platform to share expert knowledge and create networking to manage the available resources for sustainable solutions in the waste management sector through Public-Private Partnerships. As the initial step, the Governors' Office of Central province and the local authorities with the technical assistance of HELP-O, CCET, UNEP IETC and CITYNET organized a valuable workshop with the vision to make "Clean Central Country and Proud Nations" in Central province in Sri Lanka.

Message from the Commissioner of Local Government, Central Province

Mr.Menaka Herath



The Central Province of Sri Lanka is experiencing a critical waste management problem as in other provinces of the country. Especially, the limited land availability is the key constraint, which has been identified concerning waste management in Central Province. Due to these limitations, it is more appropriate that each local authority have a specific waste management mechanism to ensure a sustainable waste management process. There are 47 Local Authorities in the Central Province which include 04 Municipal Councils, 06 Urban Councils, and 34 Pradeshiya Sabah (Rural Councils). It has been reported that there are 29 recyclable waste collection centers located within the Central Province including Kandy, Mathale, and Nuwara Eliya districts.

The key objective of this regional workshop is to create a network between waste generators and waste recyclers. It is more important to bridge the gap between stakeholders to address this issue and facilitate discussions on the formulation of the strategic plan at the end of the workshop.

The strategic plan could be implemented with the support of the government sector by engaging the private sector, community, and recyclers. Under the involvement of HELP-O, this program aims to establish a strategic marketing network among public and private sector stakeholders. For each local government, it is envisaged to engage the public sector institutions in the areas, the recyclers' associations, Community based organizations and social organizations to be incorporated to work together. We would like to give our fullest contribution to the success of this effort and the implementation of the work plan in the future.

Program Goal from Chairman/Chief Executive HELP-O

Mr.Chathura Welivitiya

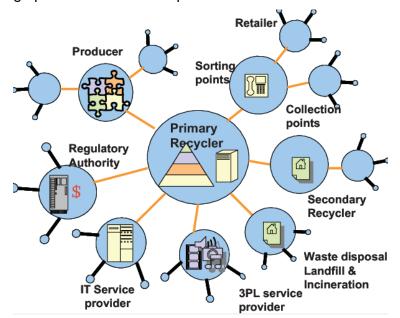
He explained the objective of the program and described the waste management scenarios during the past years. Different types of activities have been carried out in the waste management sector by HELP-O. The energy pit concept has been developed to manage organic waste at the household level. Especially, kitchen waste, sewerage waste, and wastewater are being used to generate bioenergy. While it contributes to energy generation for the house, it also contributes to generating organic fertilizer for home gardening. This concept can be introduced at the building approval process in the primary stage of new housing construction. It helps to reduce the involvement of local authorities in waste management.



Past experiences show that awareness of the people had made more demand on the bioenergy pit concept. To address that demand we are planning to have a pre-cast model of biogas units to fix quickly at the household level.

In addition to organic waste, other wastes such as plastic, polythene, e-waste, and clinical waste are also generated in all most all the local authority areas. To manage these types of waste there should be strategic solutions and the first step has been initiated from the southern province with the participation of all stakeholders in the waste sector.

Under this initiative, waste recyclers in the market who are operating in isolation were invited to participate in the stakeholder consultation process. In this consultation, it was revealed that items like Paper, Polythene, and Glass have been identified as a profitable business. But there is a need for a mechanism to collect the separated waste and store the waste as appropriate to be sold to the large scale recyclers who are managing the market. Therefore, it is important to have an open discussion together both with waste generators and waste recyclers. This workshop aims to establish a regional level stakeholder networking for formulation of strategic plan, further expansion in formulation of national level strategic plan with island wide implementation.



Message from the Governor of Central Province

Mr.Ranjith Keerthi Thennakoon



Waste management issue is the number one problem in every local authority in Central Province. The Central province can be identified as severely affected Province in the waste management sector when it is compared with other provinces of Sri Lanka. It is also important to understand that waste management problems are common in Sri Lanka as well as in other developing countries at present. I have some experiences of waste management in the Southern Province where I have been working as the governor before moving to the Central Province. There, we had to face more critical situations quite similar to the problems that we are facing in Central Province. In the Southern Province, some best practices enable the conversion of Municipal Waste into profitable business at the community and neighborhood level.

In such a manner, we are capable of managing the e-waste problem in Central province and we should do it as soon as possible. However, it is difficult to manage this waste only by the private sector or local authority. To complete that task we should have the technical knowhow, resources, legal background, and comprehensive understanding of the requirement and its impact. According to my experiences, the Central Province has the least diversified waste management process. It means that it has the least number of biogas plants, plastic waste collectors, and polythene recyclers. The waste management process is becoming a problem due to the frequent fluctuation of the market value of recyclable items. Therefore, any efforts to manage waste needs to be coordinated with the public and private sector. At the same time, we need to identify the requirement of each local authority and type of waste management problem they face. In this context, it is most important for sharing knowledge, technology, and expertise in the field of waste management and make a specific waste management plan for your local authority by using this platform. Finally, I wish to emphasize that it is essential to have a waste management implementation plan through expert knowledge, available resources, and partnerships among public and private sectors.

PLANNING FOR AN ACTION

Senior Lecturer in Environmental Engineering University of Peradeniya Dr. Anurudda Karunarathna



When planning for waste management, we should first consider where our country stands in this regard. The main problem concerning waste management is, in its life cycle, actions are not well planned on further approaches for waste.

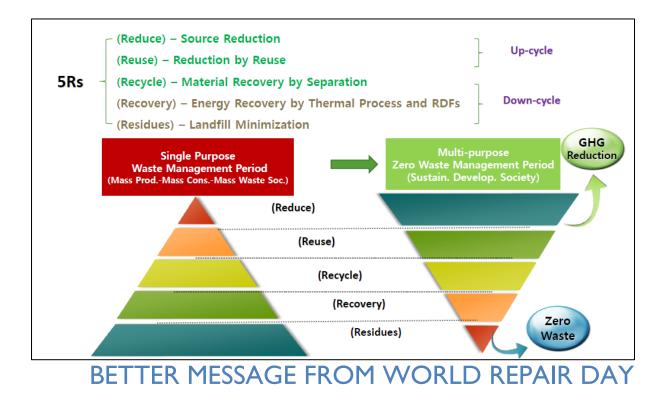
The 3R concept was first started in Japan. The popular and well-known concept of 3R refers to Reduce, Reuse, and Recycle. This helps to minimize the amount of waste we throw away. This concept helps to conserve natural resources and landfills.

The waste management program consists of key three stages to be completed for success.

Ist stage –People should be socially and conceptually advance.

 2^{nd} stage – Waste should be disposed of as a 5R concept, that not affecting people and the environment.

3rd stage –Continue with monitoring for zero waste



Consultant for the Ministry of Environment and Wildlife Resources (MoE&WL)(Waste Management Unit) and CCET *Mr. Nihal Cooray*



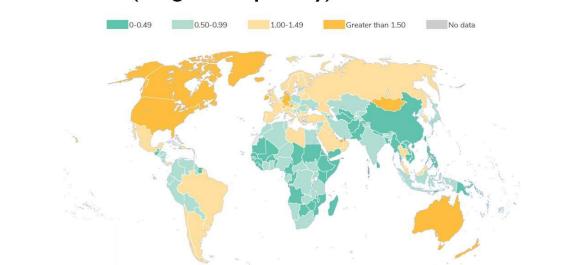
The Ministry of Environment and Wildlife Resources (MoE&WL) with the technical assistance of CCET and UNEP-IETC under the financial support of Government of Japan is developing a national plan for plastic waste management in Sri Lanka. According to the current status regarding plastic management, the amount of plastic waste produced per one person is 0.49%. In, 2016 the world generated 242 metric tons of plastic waste. Among them, 24 trillion were pet bottles of 500 ml. I heard about world repair day and it was long term practice in Sri Lanka. Our ancestors use to repair their items once broken without disposing of. Currently, it has recognized as a better solution for waste reduction internationally.

In Sri Lanka, we can compare the plastic generation amount which shows that Western Province generates a higher amount than others. This comparison is more important to make decisions on waste management. There is a huge difference between the amount of waste generated and the amount collected. We should have a mechanism to reduce that difference.

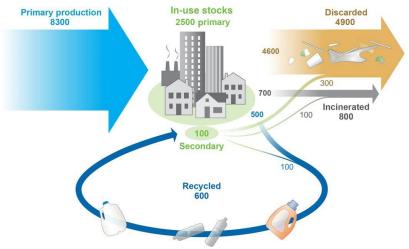
Issues relating to plastic waste management can be identified as; environmental issues such as land pollutions due to open dumping, illegal disposal, air pollutions due to the burning of plastic waste, water pollutions due to disposing of waste into waterways, channels, rivers. Health issues are occurring due to plastic burning, chemical contaminations of plastic, and malpractices of plastic waste collections. Breaking plastic into small particles can create more harm by getting mixed with food webs.

Plastic recycling industries have been neglected in the industrial sector in Sri Lanka. But it should be given priority as other industries. The entire process of the plastic recycling industry should be given priority from the collection to the end product. To do that it needs to change the social attitudes and technical issues related to that.

Annual Municipal Solid Waste Generated per capita (kilograms/capita/day)-world bank-whatawaste 2.0







SOCIAL RESPONSIBILITY THROUGH INNOVATIONS

Group Director of Kubeira IT Park Mr. Shohan Kulasooriya



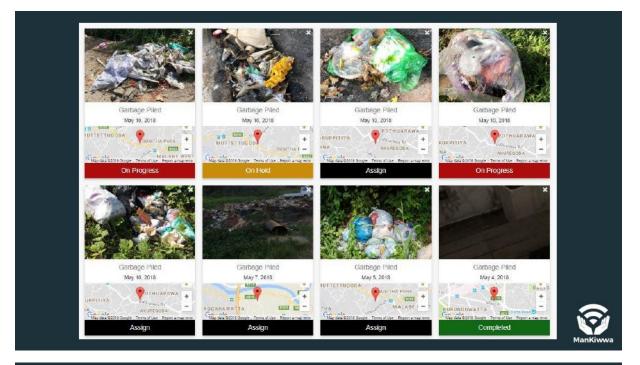
The mobile application has been introduced for the general public to communicate with the local authorities and aware them regarding waste management problems. This application will help in creating networks with relevant agencies such as disaster management agencies, security agencies, and utility providing agencies in particular situations to find solutions by coordinating with local authorities. Existing issues within the local authority will be recorded by the mobile application which helps to improve the efficiency of the problem-solving process.

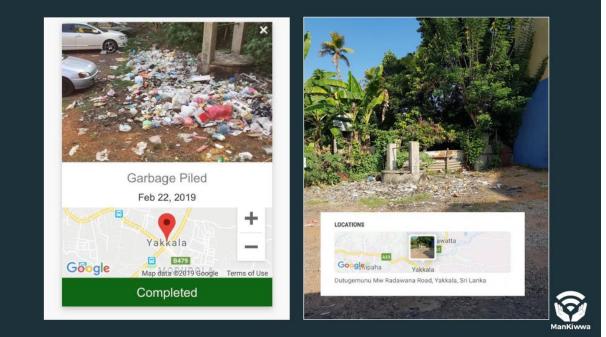
The application can be easily operated after installation in the smartphone. Issues related to a local authority can be reported with a photograph and description. It helps to bridge the gap between people and power. When someone reports a problem to the local authority by using this application, the relevant local authority will take necessary actions immediately and respond to it. At the same time, recorded data can be utilized to prepare plans for the issues occurred in the local authorities.













BRIDGE THE GAP BETWEEN RECYCLERS AND WASTE PRODUCERS

President of Plastic Recyclers' Association in Sri Lanka/ Piramal Glass Company Mr. Priyantha Hapuarachchi

The recycling industry in Sri Lanka is playing a very small role and contributions from local authorities are very less. The recycling industry is not only based on plastic waste. Municipal waste has consisted of other recycling materials as well. Recyclers won't get profit from recycling only one product but from many. It needs to have one supply chain of material types. It has a hidden potential to harness the financial benefits as a business.

In this industry, we can identify different role players such as door to door collectors,



nattami, value additions. But the problem is that role players are not addressing in anywhere and not having policy-level decisions to increase the community. At the same time, it should have a mechanism to reach the waste materials into recyclers. Private companies are willing to help and develop this industry with community participation and general public recognition. But, the major problem is not having recognition as recyclers. We should make a bridge between recyclers and waste producers to succeed in this process.





Paper products and empty paper containers







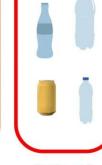




Food waste and paper napkins







Bottles and aluminium cans





Non-recyclable waste and mixed materials





"WORLD WITHOUT WASTE" & "GIVE BACK LIFE"

Director in Corporate Social Responsibility Projects of Coca-Cola Mr. Hemantha Balasooriya



The vision of the Coca-Cola company is to have "World without Waste" through the PET bottle collecting all over the world which they have produced. The goal is to "Help collect and Recycle the equivalent of 100% of the packaging of PET bottles we sell by 2030." In Sri Lanka, they are practicing the "Give Back Life" program related to PET bottle recycling. It has introduced in three pillars such as Design, Collects, and Partner. We have prepared PET bottle collecting points in fuel stations, supermarkets, expressways and public locations, etc. A special program has been conducting within 560 school premises to collect PET bottles.

However, the major problem is the improper disposal of PET bottles into the environment by people. Per month 1600 metric tons of pet bottles arrive in Sri Lanka. Among them, 30 % are re-exported. But we are trying to collect remaining plastic and, make the plastic-free country.

PET bottles can be recycled 100%. It has three steps to complete: collect, clean, and convert. PET bottle design has been changing following to support of the recycling process. It was planning to reduce the usage of raw materials even in the production process. At the same time, it was important to have an attractive collection process like event-based PET bottle collection. On the other hand, it was creating partnerships with the public and private sectors to continue the recycling process. If we can make a common channel to integrate this process it will create higher income, employment opportunities, and re-exporting possibilities, etc.

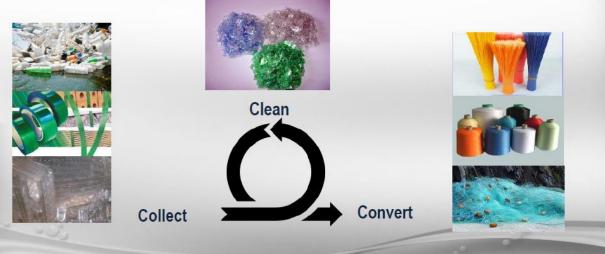
Why PET is popular Is All Recyclable

Every package has value and life beyond its initial use and should be collected and recycled



Value addition for PET bottles

help generate solutions that leave our world better for generations to come





WE RECYCLE TO SAVE THE ENVIRONMENT

The Executive Officer in Nawam Lanka Limited Mr. Rajesh Rao

Navam Lanka is the first eco-friendly lead metal recycling company in Sri Lanka. It confirms the international environmental standard of ISO 14001: 2004. Navam Lanka Company is engaged in the recycling of Used Lead Acid Batteries, Cable Scrap/other Lead Scrap, and Poly Propylene Boxes. It has established at Mirigama Board of Investment Zone on the year 2000 and registered in all government institutions including CEA. Its annual capacity is 7,000 MT.

There were three steps regarding battery recycling as following;



- Collecting batteries, stocking, and processing
- Separation and store the lead and plastic portion separately
- Dissolve in the lead burner and making lead quality with a standard
- Recycling of Plastic

All these things are doing with ensuring the safety of the workers and without any harm to the environment.



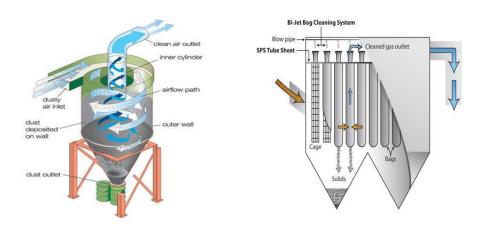
GRAVITA GEOGRAPHIC PRESENCE



GRAVITA

We Recycle to Save Environment

POLLUTION CONTROL EQUIPMENTS





We Recycle to Save Environment



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Panel Discussion

Moderator of the panel discussion; Dr Anurudda

Point raised	By whom
Shared the experience of Raththota Pradeshiya Sabha; They have collected Pet bottles. As they	Environment officer
could not find a recycler, ultimately dump.	
They do engage in polythene bailing. Does it require to differentiate polythene before bail?	
Coca-cola and Eco Spring show the interest in buying PET bottles	Coca-cola and Eco
- Eco Spring contact details; 0763139677	Spring
It would be great if they could sort plastics before bail. Because it is difficult to separate after the	Mr. Priyantha, SLRA
process. Therefore it is better to encourage separation at the point of generation.	
Information of the recyclers are available in the CEA web site (<u>www.cea.lk</u>)	Deputy Director, CEA
It is about to start tetra pack recycling plant and introduce yogurt cup recyclers	
Need to identify the ways of promoting source segregation	Mr. Nihal Cooray
Polythene segregation is a skill to be acquired. Most of the time waste collectors are talented	Dr. Anurudda
enough to segregate polythene. The Kandy Municipality trained its workers on polythene	
segregation.	
Many people were not much practiced the recycling in Gampola Area. Lack of awareness might	Major Chandana
be one of the main reasons for that. Therefore he proposed to include waste management into	(Participant for from Sri
to school syllabus where the majority can sense the importance of it from the beginning.	Lanka Army)
The subject was already introduced to GCE AL, Technology Stream.	Dr. Anurudda
But yet to be addressed in the primary school as well.	
Proposed few activities to promote recycling among schools;	Mr. Priyantha, SLRA
 Develop a system to earn money from recycling items 	With Hydricha, SENA
 Cost for classroom paints can be acquired through the sale of recyclables 	
- Under Pilisaru Project there were Pilisaru schools. At that time children were asked to	
bring waste papers to the school and they were paid according to the weight. Money	
was used to paint the school.	
Privet companies have a limited space to speed u and expand the collection process. That is why	
it requires a strategy to go beyond that.	
Attitudinal change is more important to promote recycling societies. The government also needs	Mr. Sena Peries
to facilitate the recycling industry.	Mil. Sena Penes
Acquiring community involvement is necessary for the recycling industry to make it sustainable.	
Obtain Technical advice from experts is low in Solid Waste Management in Sri Lanka	Dr. Anurudda
	DI. Alluluuua
It is proposed to establish a Waste Management Authority (WMA) for the central province. There	Commissioner Local
are 47 LAs in the central province. All the legal provisions are already completed. LAs provide	governments
collection targets of recyclables to Environment officers.	
Appreciate the regional workshop organized with the assistance of HELPO Sri Lanka, which could	
develop the network and to aware of LAs.	
As people said that there were so many workshops to develop strategic plans, none of the plans	Ministry of
is properly implemented. They agreed with that. That is why they introduced WMA to the central	Environment
province as a monitoring and coordination mechanism.	
Are there any policy barriers for financial handling within LAs? We have faced certain difficulties	Mr. Nihal
in negotiations with LAs in recycling projects.	
There are no such legal barriers to that. If there are such problems Commissioner shows his	Commissioner Local
interest to support the process. He said that please contact the Department of Local	governments
Government.	
He has mentioned that he is willing to corporate in meetings, discussions, and programs which	Mr. Priyantha, SLRA
supports recycling	
Small scale recyclers face difficulties in earning sufficient quantities of money through the sale of	Participant (Privet
plastic pellets due to the importation of plastic pellets at a cheaper price.	Sector Recycler)
Therefore, it would be better to increase the import tax.	
CEA mentioned that people can't import recycled pellets. Therefore, it is required to increase the	CEA
capacity of the volume processed. Recyclers need to use novel technologies, machinery, and	
other techniques to get the entrepreneurial advantage. CEA intends to support in developing	
entrepreneurs.	
Though there were policies to reduce plastic, with the population increase and the development,	Mr. Priyantha, SLRA
plastic waste generation occurs. Therefore it will increase the opportunity for recyclers.	

Point raised	By whom
According to him, lack of law enforcement by the LAs is the major problem lead to the improper garbage disposal. (ex; Gampola UC, Hatton-Dikoya UC) There are so many Polythene and plastic and in roadsides and villagers used to dispose of waste into the closest river due to no proper legal actions or collection methods.	Mr. Amith, Hanthana Conservation
It is difficult to find lands for waste disposal due to protects done by villagers (ex; Hatton, Dikoya). Therefore, the compostable waste of Gampola UC transferred to Dambulla Kawashima facility though it is a costly operation. He requests the corporation of NGOs in aware people on sanitary waste disposal to avoid such field problems.	Commissioner Local governments
With the Meethotamulla incident, people are reluctant to have dumpsites around	Dr. Anurudda
There is a plastic patch in the Indian Ocean and the Pacific Ocean. In 2025, Microplastics in the sea will be a major problem. Mixing of biodegradable polythene in recyclable plastic waste is also a problem in the recycling industry.	Mr. Priyantha, SLRA
It is important to develop the mentality to perceive waste as a resource.	CEA
The most difficult part is to change attitudes. If they are good in that there won't throw PET bottles in Sri Pada (Adams Peak). What is the follow-up plan for the strategic plan?	Mr. Liyanarachchi, Green Life
In housing plan approvals, LAs consider wastewater management and solid waste management methods	Dr. Anurudda

Conclusion.....

With an exponentially increasing population, it is even more important to be considering how well individuals take care of the planet. The land is limited, resources are limited, and the health of the plant can only be hurt to a limited extent. As more and more waste is generated yearly, it is evident that this increasing trend is unacceptable in the long run. Landfills and recycling can only temporarily mitigate the immediate consequences of this large waste production. However, if the problem of municipal solid waste is to be truly addressed, the root of the issue must be looked at first. If less waste is generated in the first place, the challenge of finding environmentally feasible ways of disposing of waste will be much easier.

It can be observed there are many difficulties which are present in the waste management sector in the Central Province. It may be due to the less priority given by the Central Province for waste management. At the same time, proper waste management is further critical in Central Province due to land limitations with a geographical location in the mountain range. Hence, there are very few diversifications in waste management options that local authorities have to select. However, the Central Province needs to be kept clean and unpolluted as it the critical water catchment and watershed of the entire country. Considering the significance of the Central Province all the stakeholders need to collaborate to create coordination and networking efforts among others to achieve sustainable waste management and reserving the total ecosystem in the Province.

Lessons and Learned.....

- > Waste management is an important issue that needs government-led action quickly.
- > At present there is very little awareness exists regarding this issue in our society.
- The practices of ignoring the waste management issues are too risky not only for today but they could be dangerous for our future generations too.
- It is very important to educate people and encourage them to adopt practices on Recycle, Reuse, and Reduce (3R Concept).
- Government and Local Authorities should pay priority attention to properly collect and manage the waste generated in the respective Local Authority area.
- Individual participation of city dwellers in responsible waste management is to be promoted.
- It is essential to update the data on SWM and fill the data gaps to understand the existing situation and way forward in SWM in the Province.
- Introduce strategies to bridge the gap between waste producers and recyclers.
- Formulation of a strategic action plan for implementation and monitoring of activities on solid waste management in the Province.

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