

UNITE for the Environment

Solid Waste Management Training

2nd Term

2017



INTRODUCTION TO PLASTIC RECYCLING

What is recycling?

Recycling is the process of collecting and processing of materials such as plastic bags (Kavera), straws, old cloths and off-cuts, nets, plastic bottles, compact discs (cds) etc, which would otherwise be thrown away as trash and turning them into new useful products. Plastic recycling is in two forms;

- (i) Industrial recycling
- (ii) Local recycling

NB. When recycling plastic, it is very important to use the plastic in form of waste rather than buying new plastic. However sometimes additional products may be added to improve the quality and value of the product most especially with industrial recycling.

Why recycle plastic waste

Plastic is among the most popular and important material used in the modern world. In Uganda, there has been an increase in the use of plastics most especially as packaging material unlike in the past when people used natural materials like banana fibers and leaves. For example water, porridge, juice, gin (waragi) and others are all packed in plastic.

Plastic waste does not decompose and because of this, there is a lot of plastic waste that has accumulated in our communities and has a huge negative impact on the environment.

However, plastic can be reused for manufacturing and producing various types of goods and items that can be used on a daily basis. Therefore, instead of throwing plastic waste away to pollute the soil and water bodies, we can optimize the lifespan of plastics by recycling them hence taking care of the environment.

NB. Recycling is an important aspect of waste management but all of us should strive to reduce the quantity of plastic waste generated in our homes, trading centers and schools by looking at recycling as a secondary option.

INDUSTRIAL RECYCLING

This involves use of advanced technology to produce new products from plastic waste. Under industrial recycling, an item is recycled into a different product, which usually cannot be recycled again. Through industrial plastic the following products can be got, basins, tarpaulin for construction, egg trays, crates, cups, shelves etc.

The major contribution schools and local communities can make towards industrial recycling is to collect plastics in large quantities, gather them in one place and work with recycling industries to pick this waste.

This has already started in big towns such as Entebbe, Mukono and Kampala

LOCAL RECYCLING

This is the use of local technologies to make new products from plastic waste. Through local plastic recycling the following products can be got; floor mats, table mats, door mats, money purses, shopping bags, bangles, necklaces, bathing sponges, belts, ropes etc.

Local recycling is very relevant to our communities since we do not have industrial recycling services at the moment.

Process of Local Recycling

1. Collection: This is the first step in plastic recycling. Plastic waste collection for local recycling is simple as can be collected in small quantities by anyone from the nearby trading centers and homes.

2. Sorting: Once the waste is collected, it should be sorted according to the type (bottles, bags, straws etc), texture (hard or soft) and color. Hands are used for this process but it is advisable to put on re-usable gloves if possible to sort the waste. If one can't afford the gloves, they should wash their hands after handling waste.

Thereafter, one can select the plastic waste to use as raw materials and dispose of the other waste that he/she may not use in the right way e.g. to the incinerator.

3. Washing: Once the sorting has been done, the plastic waste needs to be washed properly ensure all contaminants such as soil, water and other contents are eliminated.

4. Drying: This is a very important step in local recycling. The drying process helps in enhancing the quality of the product. The drying should be done on moderate sun. This can be for one to three days depending on the intensity of the sun and the volumes of "raw material".

5. Cutting pieces: After sorting and drying the plastics, to make some products such as bags and beads, the next step is to cut the plastics into tiny pieces using scissors so as to get the right material size to use. However cutting may not be necessary in making some products such as ropes and most times when straws are used as raw materials as this only necessitates joining a number of pieces together.

6. Making the product. Depending on the product, the materials are put together to make a new product. Important to note is that most of the products are weaved and the process may not necessarily take one day. One can weave on a part time basis while doing other duties.

Benefits of Plastic Recycling

After knowing the processes and stages of plastic recycling, it is also important to know its various benefits.

- Recycling plastics provides a sustainable source of raw materials for the manufacturing industry. Once the plastics are collected, they are sent to manufacturing industries to be redesigned and converted into new shapes and used in different appliances.
- Conservation of energy and natural resources: The recycling of plastic helps save a lot of energy and natural resources as these are the main ingredients required for making new plastic. Saving petroleum, water, and other natural resources help conserve the balance in nature.
- Clears landfill space: Plastic waste is accumulated on land that should be used for other purposes. The only way this plastic waste can be removed from these areas is by recycling it.
- Recycling helps to reduce diseases. When biodegradable waste material is thrown on the same ground as plastic waste, it decomposes slowly and emits hazardous toxic fumes after a certain period. These fumes are extremely harmful to the surrounding area as they can cause different diseases. In addition, recycling substitutes open burning of waste that has harmful effects on human health
- Plastic recycling not only promotes proper utilization of plastic waste but also helps conserve the environment, making it cleaner and greener.

- It helps to raise revenues. This is creation of employment in local craft and manufacturing industries. These revenues can help improve the country's GDP as well as improve people's livelihoods.
- Recycling helps in soil conservation. This is through making use of the plastic that would otherwise hinder proper water percolation and micro-organisms activity in the soil. This in turns improves soil productivity hence better yields and improved livelihoods.

LESSON DEVELOPMENT

Procedure

1. Discuss with the teachers the main components of a lesson plan and together agree on the best design/format.
2. Divide teachers in groups of 6 and allocate each group a subject, topic and sub topic.
3. Allocate each group 60 minutes to develop a lesson plan that is in line with the given subject, class, topic and sub topic in the text book
4. In the lesson plan developed, each group should be able to share in summary how they can deliver the lesson in 40 minutes while integrating information about waste management.
5. Have some groups present
6. Allow 10 minutes for comments and questions from other participants.

Training 1

<p>Group 1 Primary 1</p> <p><i>Subject: English</i> <i>Topic: Home</i></p>	<p>Group: 5 Primary 1</p> <p><i>Subject: English</i> <i>Topic: School</i></p>
<p>Group 2: Primary 2</p> <p><i>Subject: Literacy</i> <i>Topic: Human Health</i></p>	<p>Group 6: Primary 2</p> <p><i>Subject: Literacy</i> <i>Topic: Types of change in the Environment</i></p>
<p>Group 3: Primary 3</p> <p><i>Subject: Mathematics</i> <i>Topic: Graphs and interpretation</i></p>	<p>Group 7: Primary 3</p> <p><i>Subject: Mathematics</i> <i>Topic: Algebra</i></p>
<p>Group 4: Primary 4</p> <p><i>Subject: Science</i> <i>Topic: Vectors and diseases</i></p>	<p>Group 8: Primary 4</p> <p><i>Subject: Science</i> <i>Topic: Growing crops</i></p>

Training 2

<p>Group 1: Primary 5</p> <p><i>Subject: Science</i> <i>Topic: Managing change in the environment</i></p>	<p>Group: 5 Primary 5</p> <p><i>Subject: Science</i> <i>Topic: Human health</i></p>
<p>Group 2: Primary 6</p> <p><i>Subject: English</i> <i>Topic: Sanitation</i></p>	<p>Group 6: Primary 6</p> <p><i>Subject: English</i> <i>Topic: Safety at home</i></p>
<p>Group 3: Primary 7</p> <p><i>Subject: Science</i> <i>Topic: Environmental degradation</i></p>	<p>Group 7: Primary 7</p> <p><i>Subject: Social Studies</i> <i>Topic: Africa's challenges</i></p>
<p>Group 4: Senior 1</p> <p><i>Subject: English</i> <i>Topic: Reading and Comprehension</i></p>	<p>Group 8: Senior 3</p> <p><i>Subject: Mathematics</i> <i>Topic: Statistics</i></p>