

# PROJECT PLANNING

**THEME: ENVIRONMENTAL SUSTAINABILITY, A RESPONSIBILITY FOR ALL**

## PROJECT IDENTIFICATION

- **You can identify the project basing on the problems in the community, around your school and around your home area**
- **Attack a photo of the problem identified to act as the evidence**

## Examples

1. Over time, there have been long-term changes in temperatures and weather patterns resulting in remarkable shifts in climate worldwide. Since, 1800, human activities have been the main drivers of climate change, primarily due to burning of fossil fuels (like coal, oil and gas), which produces heat- trapping gases and clearing of plant cover.
2. In Uganda, several households mainly use firewood and charcoal as the main source of fuel and the trees are cut down. This resulted in the accumulation of carbon dioxide in the atmosphere as the trees are cut down. This phenomenon has accelerated climate change in Uganda. This is realized in general increase in temperature in the country, and changes in rainfall patterns and amounts.
3. However, many local food markets and households release much food wastes into the environment. Therefore, to cut down the usage of firewood and charcoal, biogas production using food wastes, and potential faecal wastes at the household level should be encouraged
4. In certain areas of Uganda and most likely across the world, there are many people who have no access to clean water due to their water sources being

polluted with many things as a result of inadequate waste management, industrial activities such as dirt, faeces etc. and these areas include Mbale, Jinja, Mbarara so this is just to help them in filtering out the unwanted substances so that they can boil their water and use it for domestic needs such as bathing, drinking and cooking as well as washing.

5. Glass is a non-crystalline solid. Because its often transparent and chemically inert, glass has found wide spread practical, technological and decorative use in window panes, table ware and optics. Archaeological evidence suggests glass making dates back atleast 3600 BC in Egypt, Mesopotamia or Syria. Due to its ease to formalities into any shape, glass has been used for vessels like bowls, vases, bottles, jars and drinking glasses used to package food, beverages, cosmetics, perfumery and pharmaceuticals. Due to the current lifestyle of Ugandans, alcohol consumption has risen and these glass bottles have been littered anyhow causing harm to people and animals and also soil. This project will help solve the problem of glass by recycling.
6. The project was initiated to address the prevalent issue of students facing challenges in understanding complex concepts taught in classroom. The solution involves developing a self-study platform using advanced technology.
7. With the high use of chemical fertilizer, soil is losing its fertility and value due to the damaging chemicals that harm nutrients that help in the growth and production of plants around the world.  
With using organic material like decayed fruits or rotten food, you can transform simple food wastes into manure that can help in the growth of these plants. One can make money from selling this manure and can use simple wastes to help maintain the soil nutrients

8. In my school, I have noticed that many plastic bottles are being thrown away after use and is littering the natural environment. By gathering this bottles, I believe they can be recycled to create trash cans and be creative thus solving the issue of pollution.  
Furthermore, it will greatly reduce the carbon print and encourage eco-friendly practices.
9. Every day, on the streets of Kampala and other busy areas in Uganda, you will see people enjoying sugarcane and bananas. But after they are done, the tough outer part of sugarcane and banana peels often end up thrown into pits or dimply discarded. This waste not only clutters our environment but can also make the soil less good for growing things. Thinking about this, I got an idea. We could take these sugar can husks and banana peels, dry them carefully, and turn them into something called biomass briquettes. Biomass briquettes are fuel blocks made from plant wastes that can be burnt to release energy. This project will show how we can turn what we usually throw away into useful and eco-friendly product. By doing this, we're not just cleaning up our streets but also creating a new kind of fuel that is better for our planet.

#### **PROJECT TITLE. (7-25 WORDS)**

**The project title should answer the following questions**

- (i) What are you doing?**
- (ii) What are you using?**
- (iii) Which solution are you offering?**
- (iv) It should be between 7-25 words**

#### **Examples.**

1. Biogas production from food wastes as an alternative to firewood and charcoal, a household solution to climate change in Uganda.
2. Community-Driven Biogas Production initiative for sustainable development in Uganda.
3. Transforming food wastes into biogas: a domestic strategy for mitigating climate change in Uganda.

4. Empowering rural communities with solar cookers: promoting renewable cooking solutions in Uganda.
5. Interactive self-study application for students using AI and stream lit for enhanced learning support.
6. Production of NPK fertilizer using beans residue, cabbage, bananas, water, garden fork, container
7. Etc.

### **PROJECT OBJECTIVES**

- **Should be between 3-5 objectives**
- **Begin with To;**
- **Should follow the SMART acronym**

S- Specific

M- Measurable

A-Attainable

R-Realistic

T-Time bound

### **Examples**

- To produce biogas using household food wastes sufficient for cooking and lighting.
- To reduce the amount of food wastes released by home steads into the environment
- To reduce the rate of deforestation and amount of carbon dioxide.
- To raise awareness about benefits of sustainable energy and promote environmental conservation.

### **PURPOSE (why)**

- Reflects goal or aim the project intends to achieve
- Reflect the title and theme

### Example,

- To use household food waste to produce biogas for cooking and lighting to replace usage of firewood and charcoal

## JUSTIFICATION FOR YOUR PROJECT

### Example

The utilization of sugarcane residues and banana peelings, which are commonly dismissed as waste for biomass briquette production presents an innovative approach to waste reduction and energy recovery. This project addresses the pressing need for economic and environmental benefit.

## RESOURCE IDENTIFICATION

### What are you going to use?

- Sugar cane husks
- Banana peelings
- Cassava flour
- Homemade carbonize

### Table of materials to be used and their purpose.

- Identify everything you are going to use and give their uses.

Material	Use
Cassava flour	It's used as a binder
Charcoal dust	It's used as a filler and ignition enhancer of briquettes
Sugarcane residues and banana peelings	They are used to generate the bio char
Moulder	It's used in shaping the briquettes
Charcoal stove	It's used for boiling water

## Budgeting

No	Description	Quantity	Unit	Total
Moulder	Cylindrical	2	2000	4000
Cassava flour		2kgs	1000	2000
Charcoal stove	clay	1kg	4000	4000
Charcoal dust		1kg	1000	1000

## Integration of different subjects

Should be able to integrate the different subjects' i.e.

### 1. Biology

- **Diversity of living things:** While studying ecosystems, the role of biomass and energy transfer could be discussed
- **Nutrition in plants and animals:** Discussing the energy cycle and how biomass could be used as renewable energy source

### 2. Chemistry

- **Carbons in the environment:** understanding carbon cycle and how biomass briquettes contribute to the carbon-neutral process
- **Fuels and energy:** exploring different types of fuel, including the production and use of biomass energy

### 3. Physics.

- **Energy resources.** Covering various energy sources and advantages of renewable over nonrenewable ones like biomass briquettes
- **Heat and temperature:** this might include the study of combustion and energy transformation, which are relevant to how biomass briquettes burn

### 4. Geography:

- **natural resources and environmental conservation:** discussion on sustainability and alternative energy sources such as biomass briquettes

### 5. Agriculture

- **Soil and water conservation.** Highlighting the role of agricultural waste that can be transformed into biomass briquettes
- **Crop production.** The relevance of crop residues in the production of biomass briquettes.

## **6. Mathematics**

- **Ratio;**
  - (i) Determining the optimal mix of materials for biomass briquette production (sawdust to binder ratio)
  - (ii) Balancing the ratio of different types of biomass materials to achieve desired combustion characteristics.
- **Dimensions**
  - (i) Measuring the dimension of the briquettes to ensure uniform size and shape which affects burning time and efficiency.
  - (ii) Measuring moisture content of biomass materials, as this impacts the quality of the briquettes.
- **Proportion**
  - (i) Scaling up to the production of briquettes requires maintaining the correct proportion in the recipe when increasing the volume of material used.
  - (ii) Proportions adjusting the amount of pressure applied during the briquetting process to maintain consistency in the product

## **7. Entrepreneurship**

- (i) Marketing.

## **8. ICT**

- (i) Logo design

## **9. Art**

Drawing a logo

## **10. History**

\_ Search about the history of briquettes

## **11. English**

-Poem

## PROJECT ACTIVITY/ PLAN

**Activities undertaken.**

### **12.Chronological order of the activities.**

Date	activity	assignment	Teacher signature

- (i) Collection of raw materials (sugarcane residues and banana peelings) from local farms
- In the evening, I visited a dustbin in Nyakyera and collected the discarded sugarcane husks and banana peels that had been carelessly tossed aside, by the end of the evening I had gathered these organic material, separating them from the rest of the waste. I then placed them into a polythene bag, setting the first step in my journey to transform what most see as trash into valuable resources for Energy production.
- (ii) The material into combustive form

### **Project ideas under the theme “Environmental Sustainability, a responsibility for all”**

- (a) Biogas production
- (b) Making trays
- (c) Solar cooker
- (d) Smart garden using water bottles
- (e) Trash bin using water bottles



- (f) Artistic work using the glass bottles
- (g) Chicken drinkers the plastic bottles
- (h) Chicken feeders using the plastic bottles
- (i) Chair using plastic bottles
- (j) Fences using plastic bottles
- (k) Chicken cage
- (l) Block Briquettes
- (m) Door mats
- (n) Pencil holder using water bottles
- (o) Smart stoves from clay.
- (p) Curtain out of plastics