

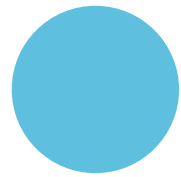
Closing event of the **German project PlasticBudget: Development of Budget Approach and LCA Impact Assessment Methodology for the Governance of Plastic in the Environment**

Optimizing plastic waste generation for environmental sustainability in Ghana, Africa

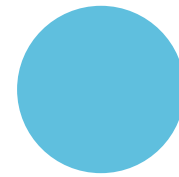
**Justice Kofi Debrah
Godfred Kwesi Teye
Maria Alzira Pimenta Dinis**

4th April 2022





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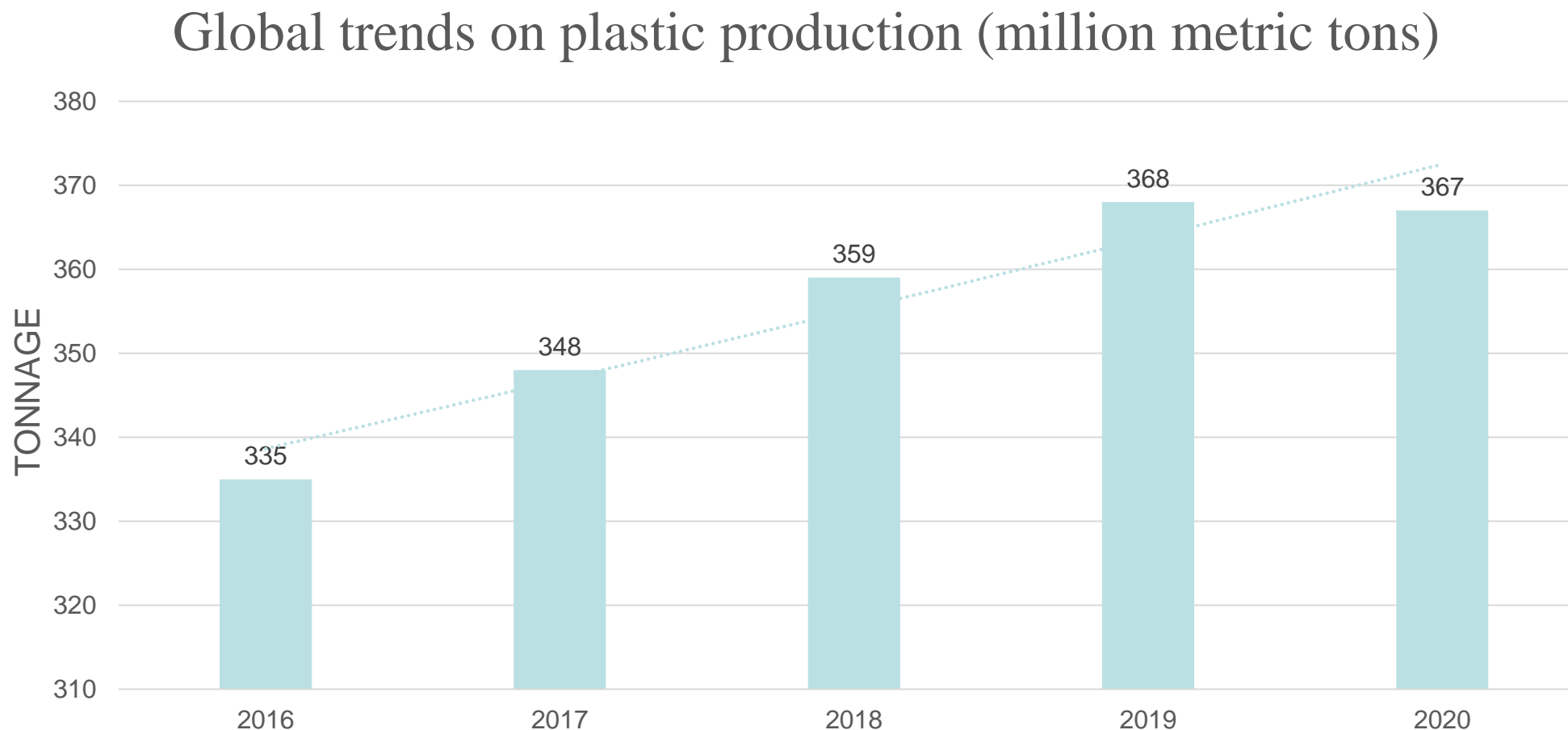
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Conclusions

Introduction

- Plastic is a social good, but it has become a global severe anthropogenic phenomenon for the world to solve in recent times.
- Plastics are now omnipresent in the environment, and this increasing trend needs urgent action.
- Two million plastic bags are used every minute Globally (**Bombelli** et al. 2017; **Nielsen** et al. 2019).
- From 1950 to 2018, plastic waste production globally has increased to 6.3 billion metric tons (**Debrah** et al. 2021; **Geyer** et al. 2017)

Global trends of plastic production (million metric tons)



Year of productions
Source: **Statista 2022**

Global trends of plastic waste productions

- ❖ An average of 355.4 Million Metric Tons (MMT) of plastic is produced globally (**Debrah** et al. 2021; **Statista**, 2022).
 - 12% incinerated
 - 9% recycled
 - 79% untreated plastic
- ❖ Annually 281 MMT of plastic wastes get onto the environment (79% untreated plastic)
- ❖ Eight (8) MMT of plastics end up in the ocean every year (**Nava**, 2018), and this is expected to double by the year 2025 (**Lusher** et al. 2017)

Effects of plastic wastes on human and the environment

- Plastic waste destroys the aesthetic beauty of tourist destinations (**Thushari & Senevirathna**, 2020)
- Plastic waste contributes to climate change and respiratory illnesses as a result of landfilling and incineration
- Trapped shoreline plastic has a negative effect on shipping infrastructure, energy production, fishing, and aquaculture (**Sivan**, 2011).
- Releasing harmful chemicals from chlorinated plastics into the soil, which end up in plants and water



Effects of plastic wastes on human and the environment

- Accumulation of plastics in drains causes flooding when it rains.



source: www.myjoyonline.com/photos-of-piled-plastic-waste



shutterstock.com - 1857812842

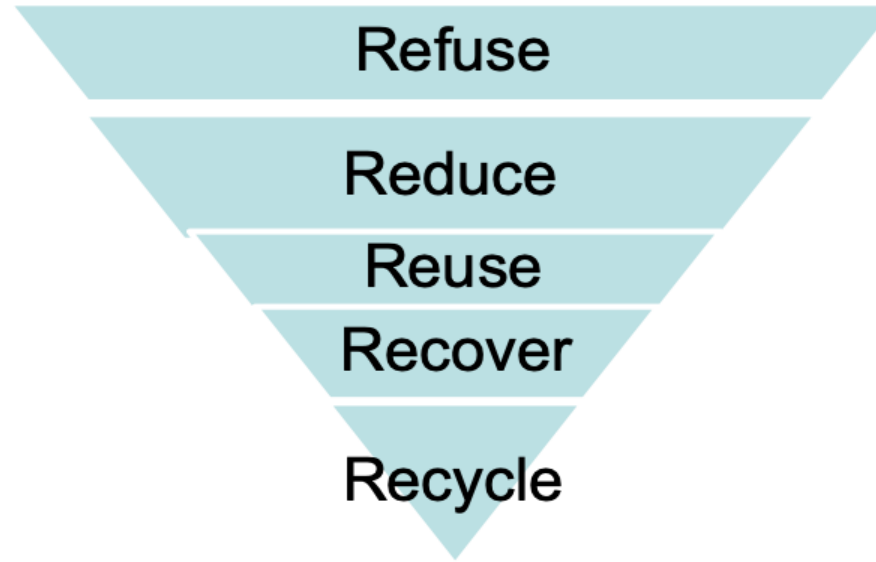
source: www.shutterstock.com/image-photo/accra-ghana-november-19-2020-drains

Effects of plastic wastes on human and the environment

- Choking animals when consumed with food (**Debrah** et al. 2021)



Optimizing plastic waste generation for environmental sustainability

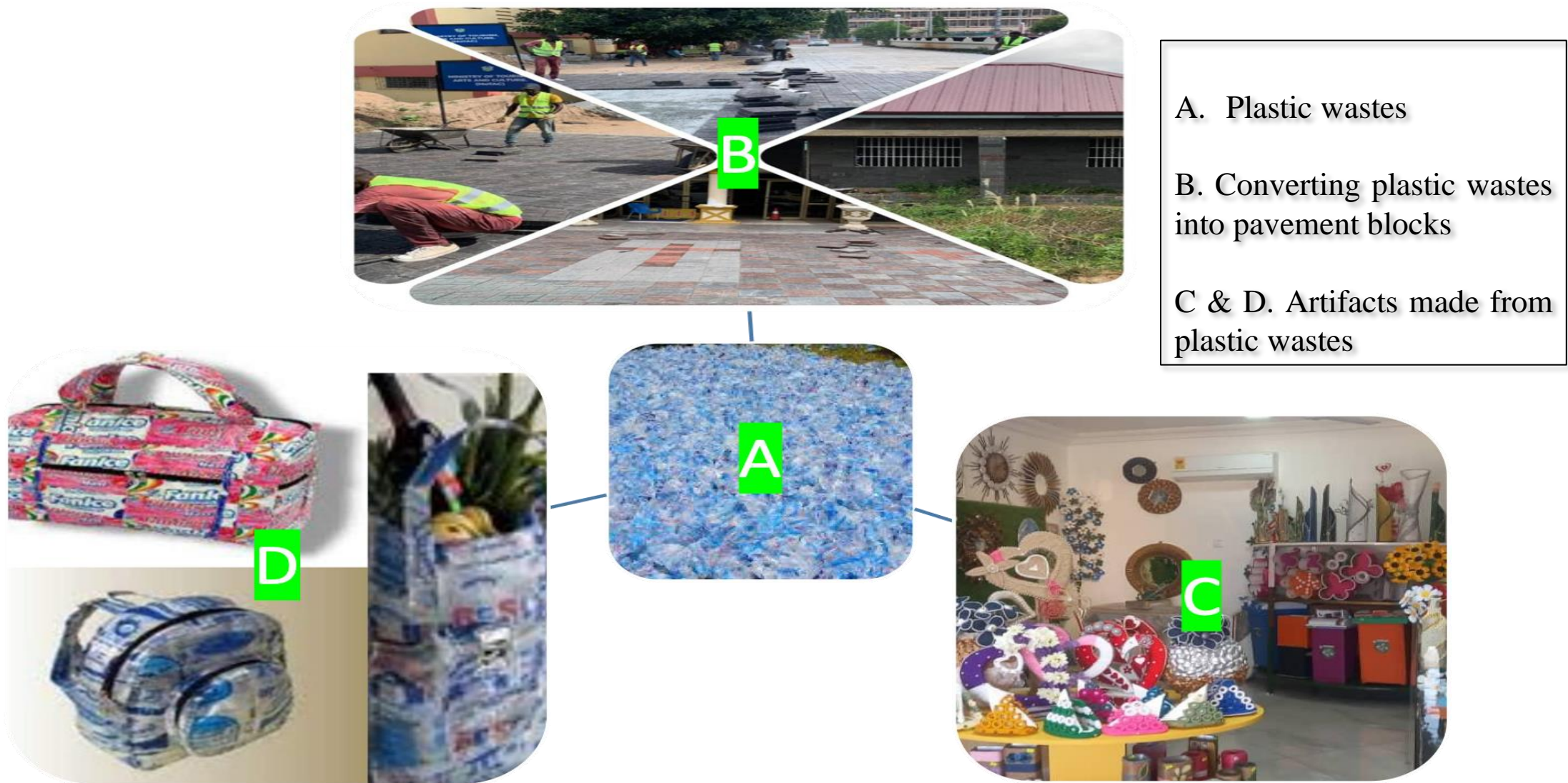


- Introduction of worms to decompose the plastics (**Sharma**, 2018; **Zhao** et al. 2021)
- Growth of natural plants to replace the petroleum
- Building capacity (Human capital, logistics, and Infrastructure)

The Case of Ghana

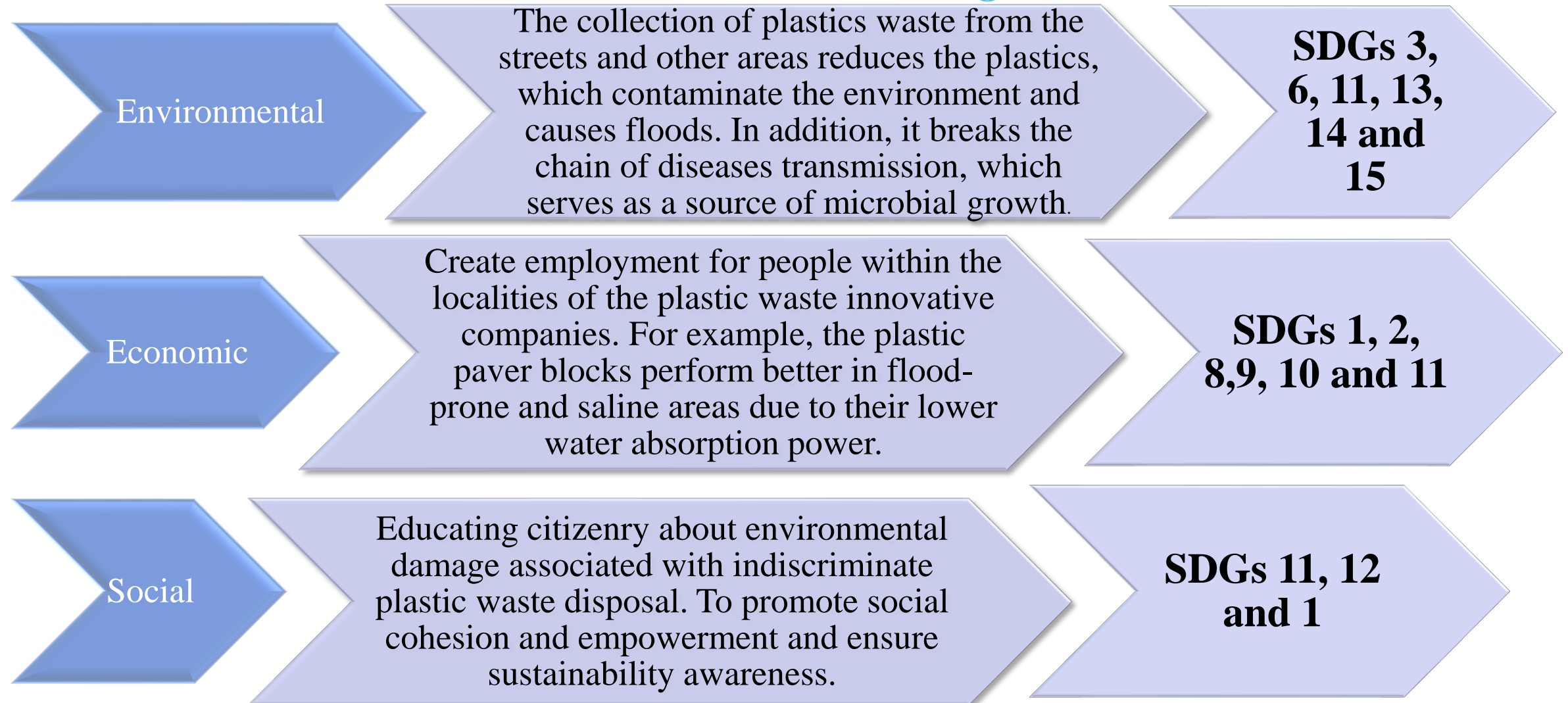
- Ghana imports about 2.58 million metric tons of raw plastic annually (Debrah et al. 2021; Hervie et al. 2021)
- More than 1million metric tons of plastic waste is produced annually (UNDP, 2019; World Bank, 2020)
- About 5 % is recycled.

Innovative use of plastic waste in Ghana



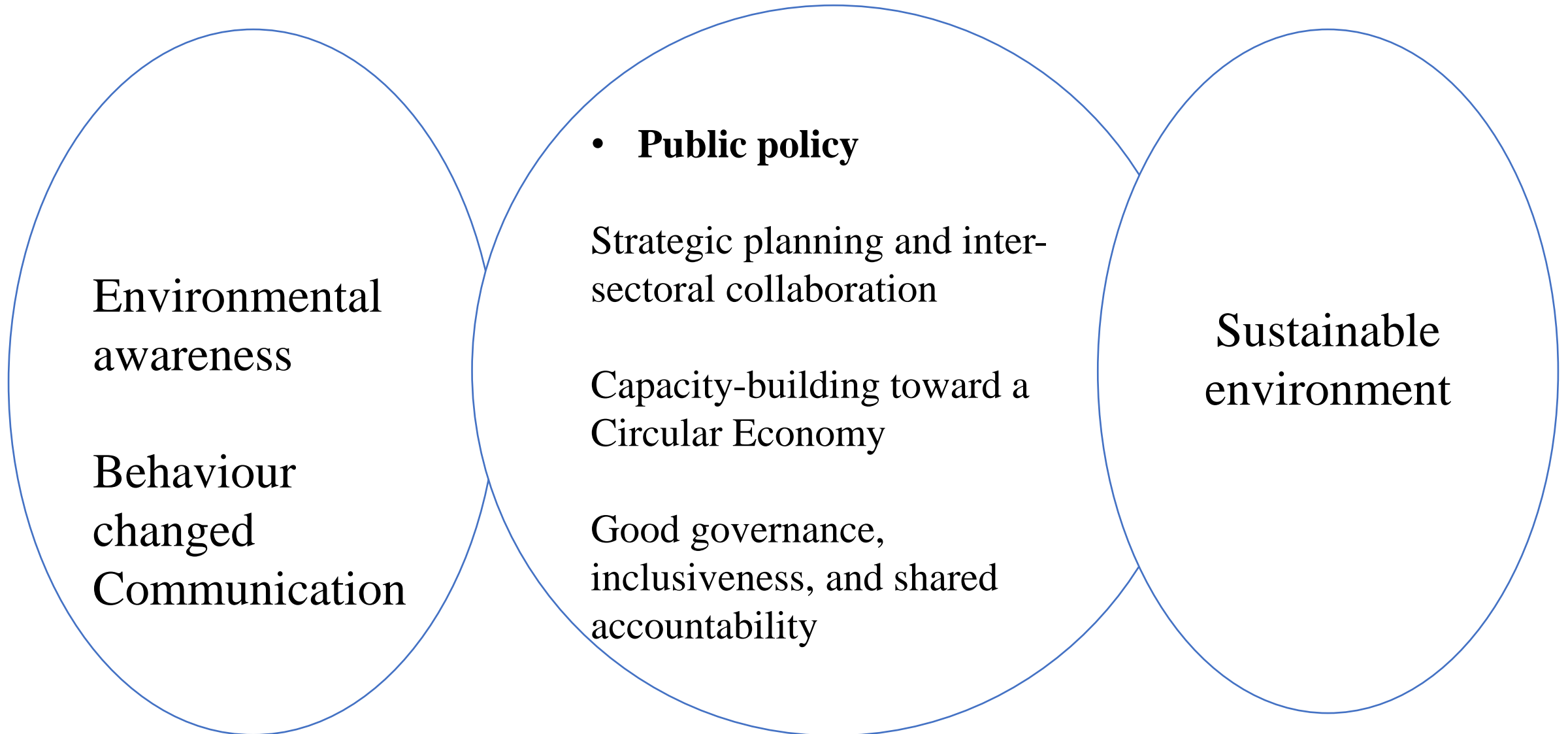
(Debrah et al. 2021)

Environmental and socio-economic benefits of innovative use of plastics and contributions to the United Nations 2030 Agenda



Adapted from (**Debrah** et al. 2021)

Other ways of Optimising plastic waste in Ghana



(Ministry of Environment, Science, Technology, and Innovation (MESTI), 2020)

Conclusions

The development and survival of human society thrive in a serene and innovative environment.

- ❖ Improper management of plastic waste is detrimental to the environment leading to climate change, tourism sites, and habitats for animals among others.

-
- ❖ Hence, optimizing plastic waste management will enhance environmental sustainability when stakeholders, policymakers, and individuals are committed to innovative ways to address the plastic waste menace.
 - ❖ This can be done through education, political commitment, inclusiveness, and shared responsibilities among plastic producers to achieve the SDGs.

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THANK YOU