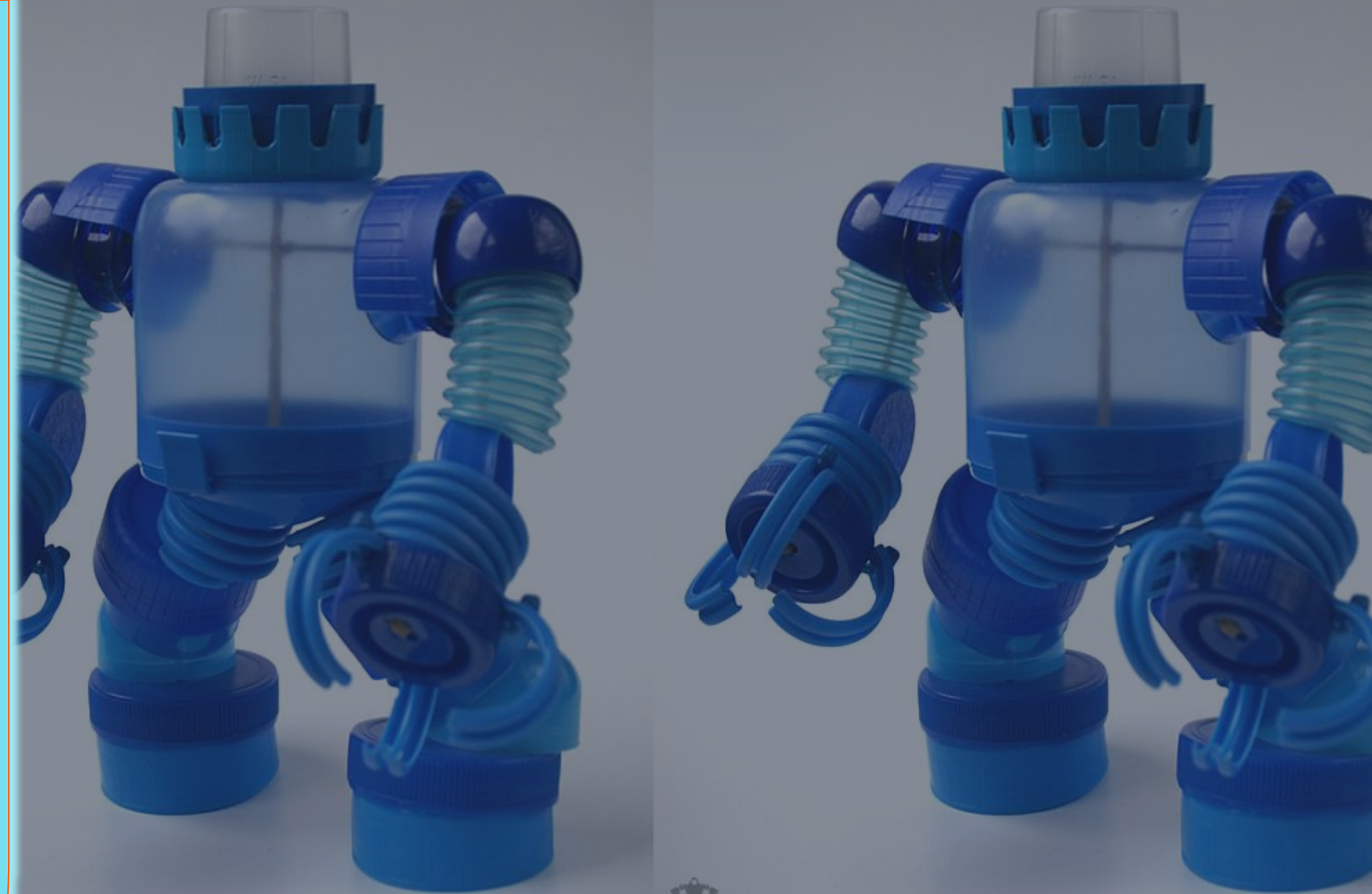
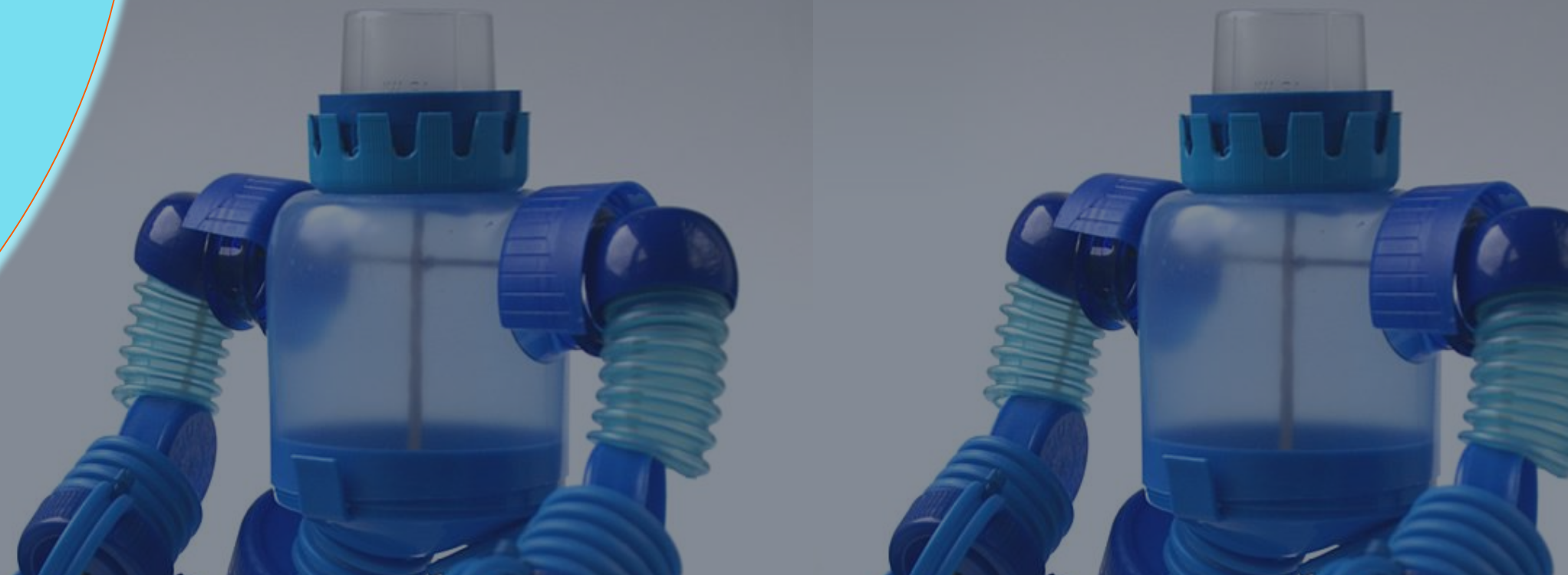


Poor **Plastic** Waste Management in Accra by:

African Transformers
ASHESI



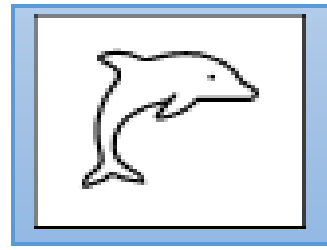
 Bottlerobot.com



WHY DOES PLASTIC WASTE MANAGEMENT MATTER?



In Accra, about 300 tonnes of plastic waste is generated daily at a rate of 0.016 to 0.035 kg/person/day



As many as 51 trillion microplastic particles in the oceans already and about 12.7 million tons of plastic waste are washed into the



Plastic bags we use in our everyday life take 10 to 20 years to decompose, while plastic bottles take about 450 years.



In 2019, the Government of Ghana paid an estimated \$200 million of debt to waste management contractors



Burning of plastics causes heart disease due to the release of harmful particles such as carbon monoxide.

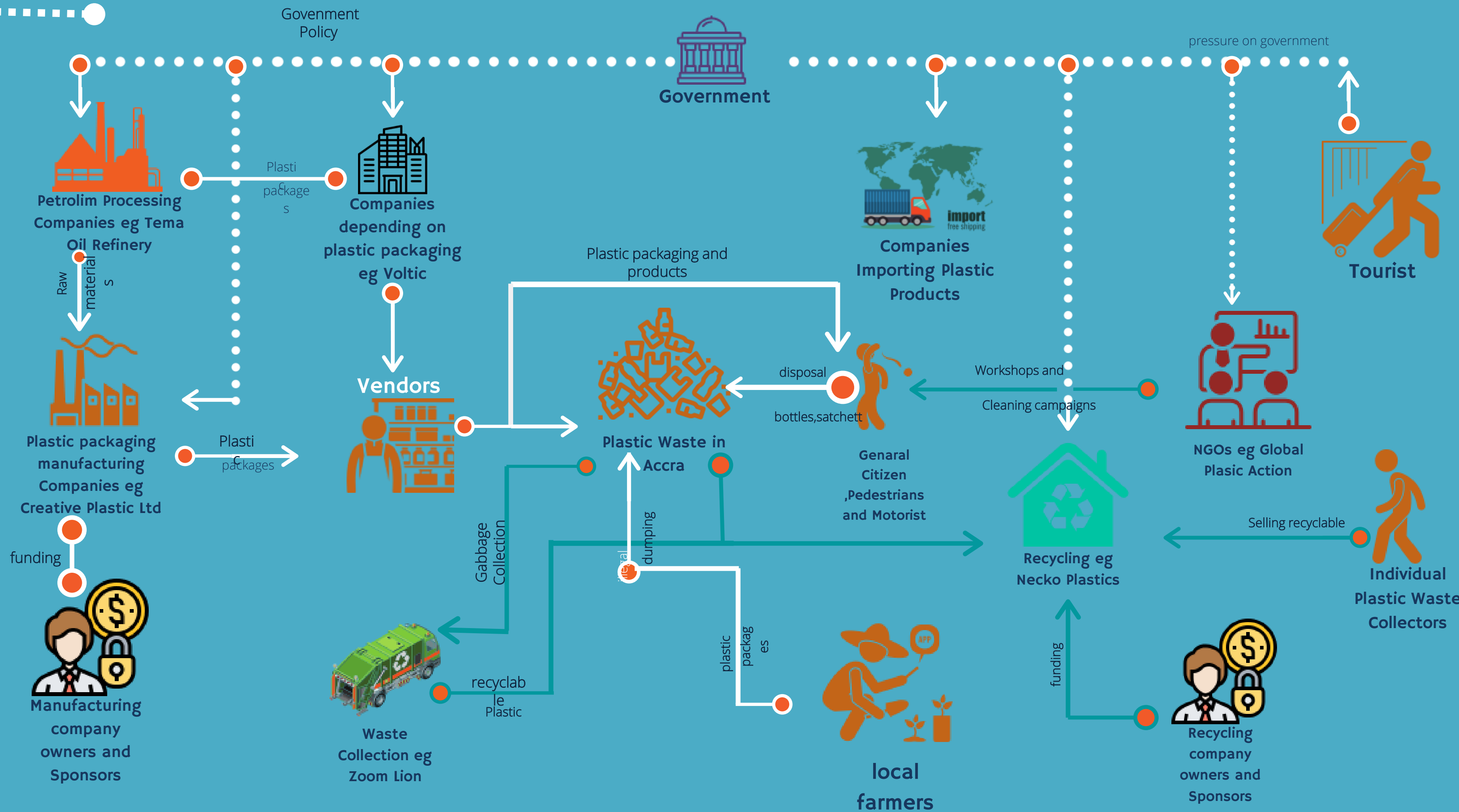
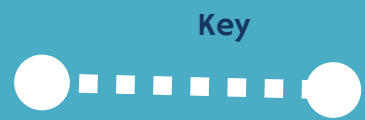
EFFECTS

- Endangerment of marine life
- Improper use of land, affecting settlement
- The presence of plastic on farmland distorts agriculture due to negative effects on soil.

Agriculture contributes to 54% of Ghana's GDP, about 40% of export earnings, and over 90% of the food needs of the country

- Choking of gutters leading to surface floods
Chocked gutters have led to surface floods. In 2015, about 152 deaths were recorded and the destruction of properties estimated to be worth US\$23,000

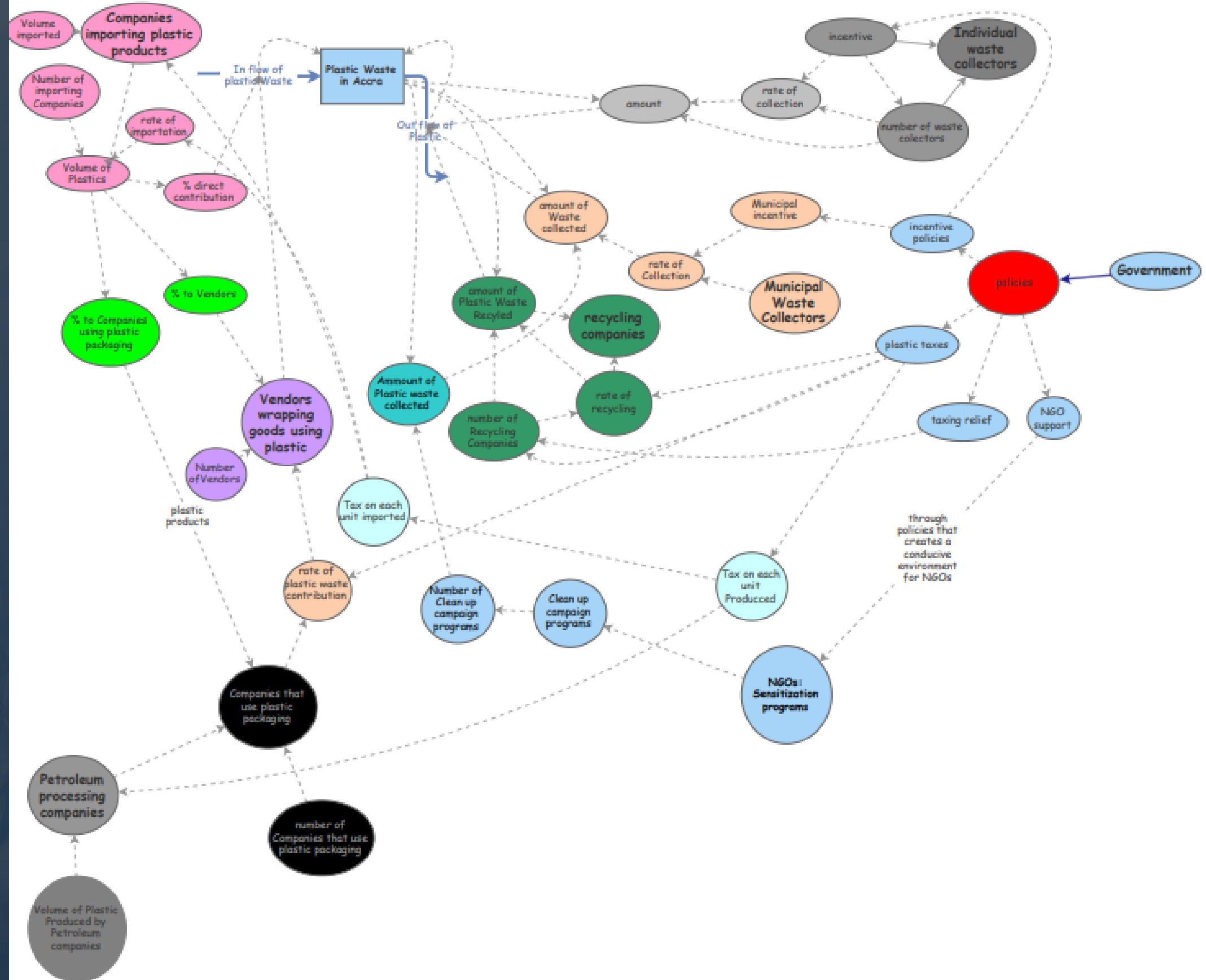
Stakeholder Map



Main system map and simulation

Link to the main System on insight maker

<https://insightmaker.com/insight/198606/Clone-of-Plastic-Waste-in-Accra-African-Transformers>



Overview

Distribution

Consumer Waste

1.7 million metric tons produced annually in Ghana

2.58 million metric tons of finished plastic imported

- Retailers, wholesalers
- companies whose products depend on plastic packaging

300 tons of Plastic waste produce in Accra daily

Sources of Plastic Waste



Producers and Importers



Disribution



Consumers



Collection Companies



66% land



23% sea



Re-use



Re-cylce



Waste



11% Air

Circulation

6% of GDP cost to economy annually

- Health risk of respiratory diseases from burning
- Harm to sea life
- By 2050, ocean will have more plastics than fish and 99% of sea bird ingest plastics
- Destroy soil for farmers

Implications

A photograph of two people rappelling down a cliff face. They are positioned on opposite sides of a gap, holding hands in the middle. The scene is set against a cloudy sky. The image is overlaid with a dark blue gradient.

GAPS AND LEVERS

WASTE COLLECTING COMPANIES

GAP

- Failure to segregate waste
- lack of consistency

LEVER OF CHANGE

- Localized designated bins for plastic waste



GOVERNMENT

GAP

- No proper regulation on the operation of waste management agencies
- Lack of implementation of plastic management policies

LEVER OF CHANGE

- Tracking recycling procedures of companies that recycle waste
- Plastic tax
- Submission of annual reports on plastic management

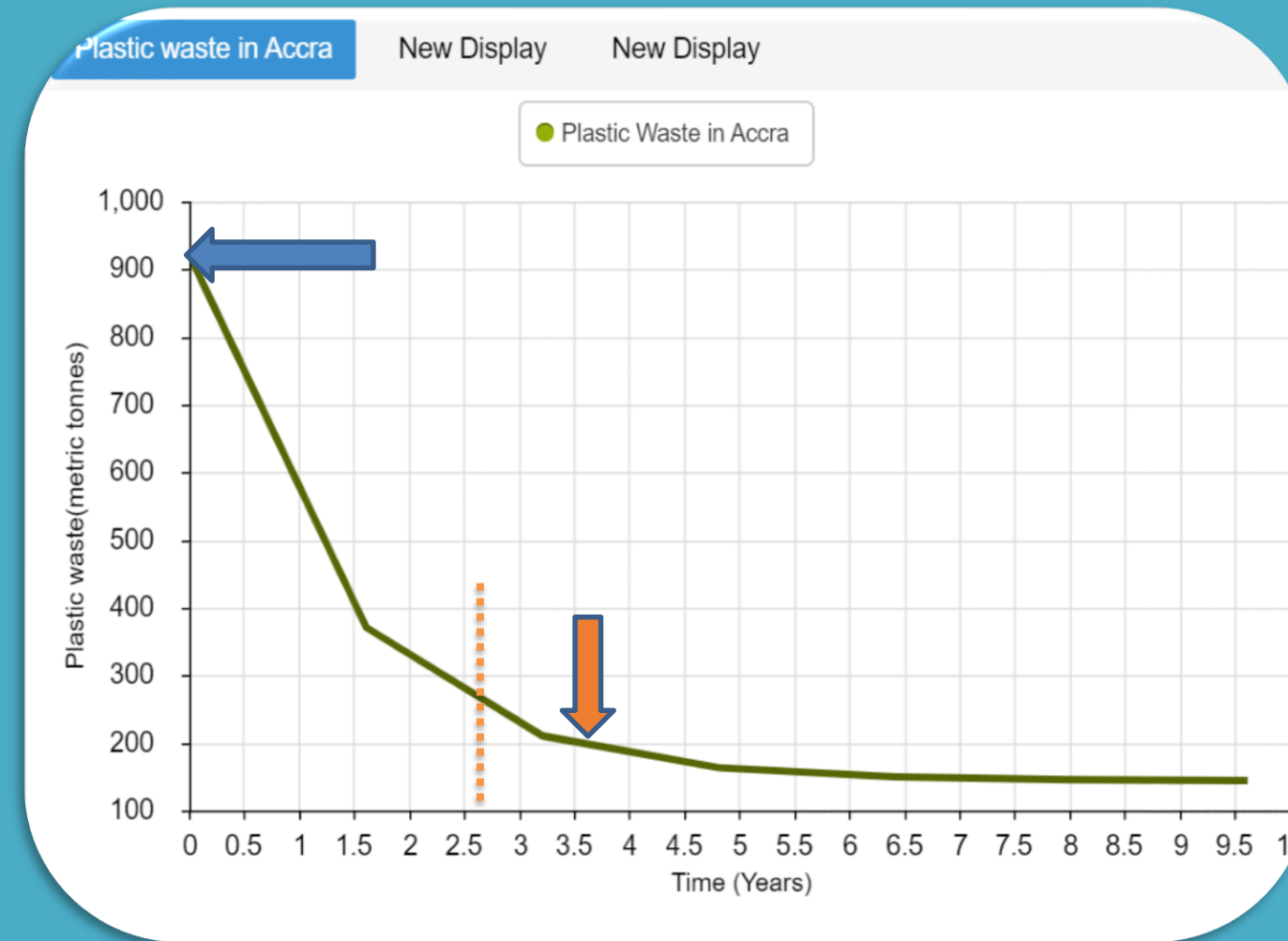


GOVERNMENT

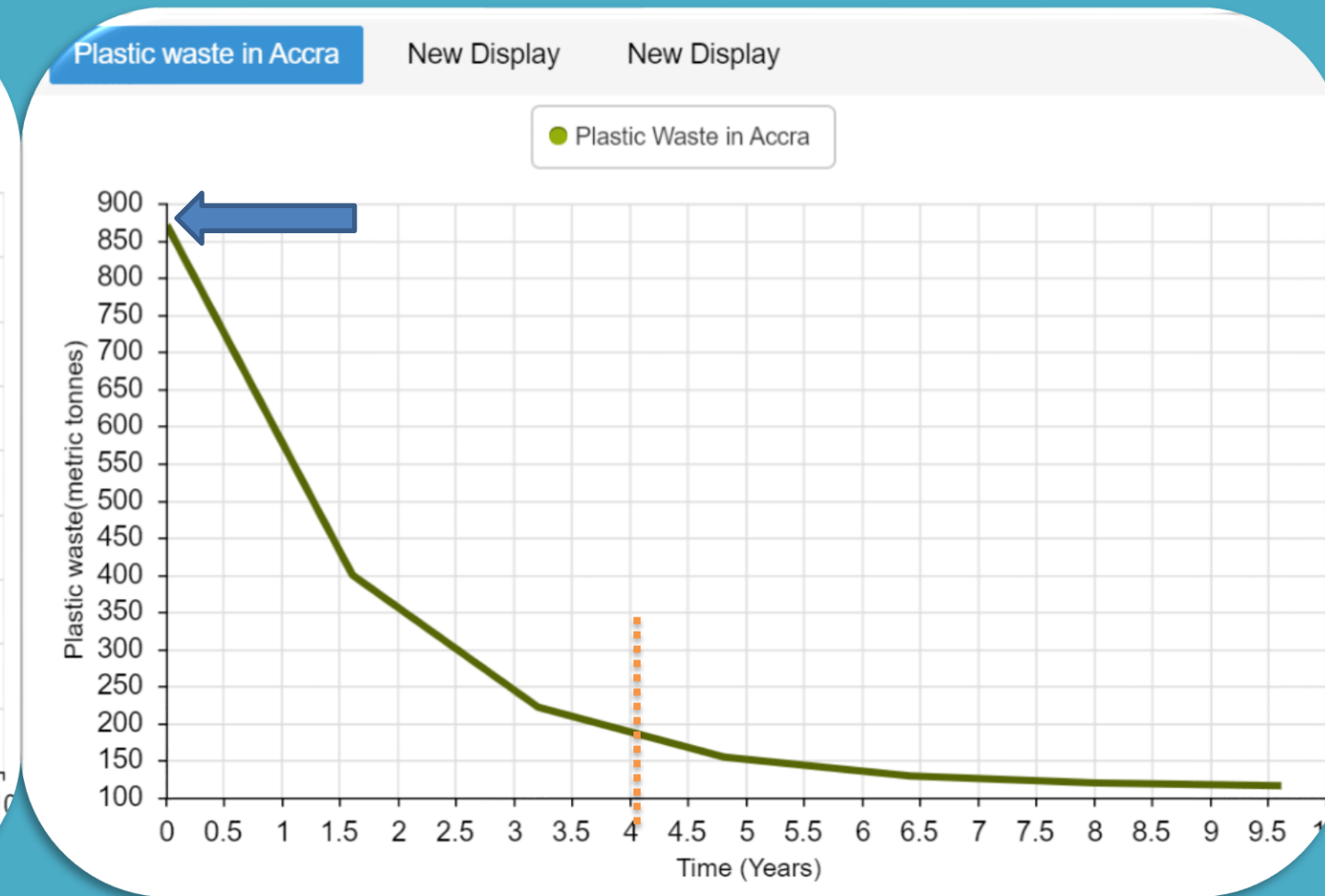
Simulation on the Effect of Introducing Plastic Tax is a lever



- The government should track the recycling procedures of companies that recycle waste and regulate the operations
- Introduction of plastic tax
- Government should enforce submission of annual reports on plastic management for every company that sell of produce plastic products



(a)Plastic tax increases by 0.01



(b)Plastic tax increases by 0.05

The graphs above shows the simulation results of introducing a plastic waste in Ghana based on the insight map we designed. The plastic tax affects both the amount of plastic waste that will Accumulate in Accra and the time it takes to reduce the waste to 200 metric tones .

- The tax also decrease the amount that companies produced (y intersect of the graphs)

INFORMAL WASTE COLLECTORS

GAP

- Lack of recognition
- High volumes of plastic waste required to get money

LEVER OF CHANGE

- Documentation that allow them to sell at minimum selling rate
- Connecting them to companies that recycle
- Incentives for the local collectors for little volume of collection

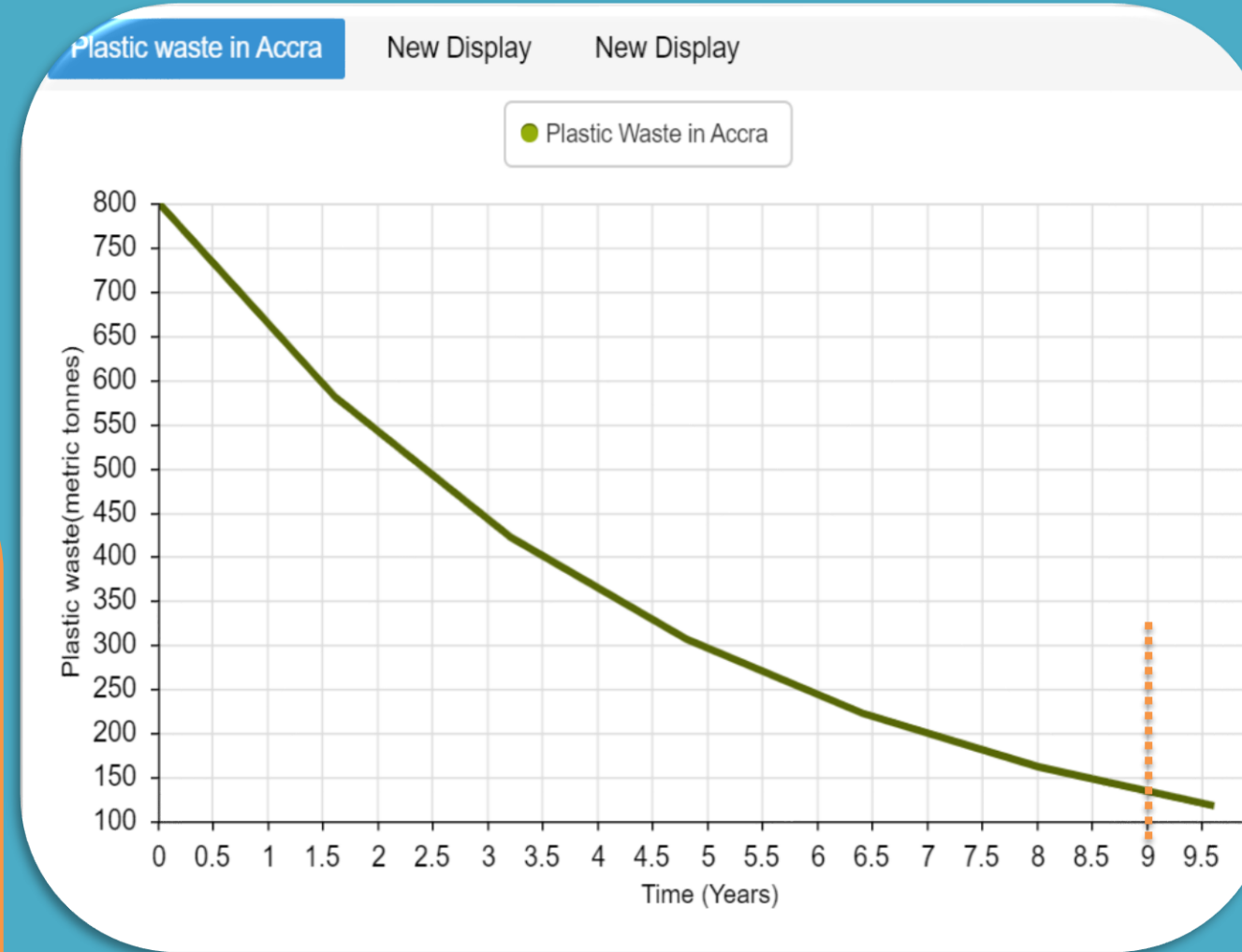


INFORMAL WASTE COLLECTORS

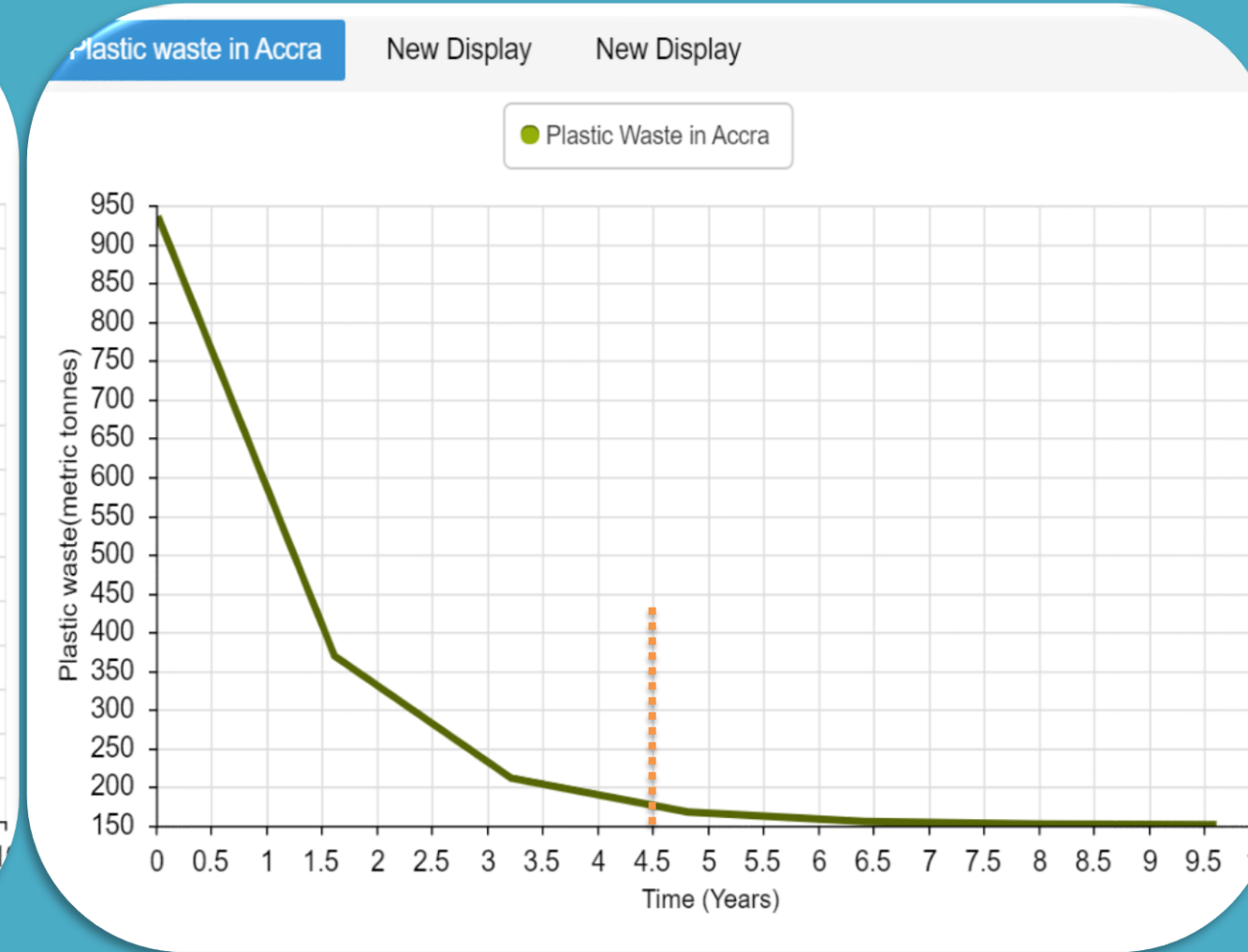
Simulation on the Effects of increasing incentives



- Government should provide documentation that allow informal collectors to sell at minimum selling rate
- Government should further provide platforms that Connect them to companies that recycle plastic waste
- The government should give incentives for the local collectors for little volume of collection



a) No incentive increase



a) With incentive increase

The graphs above show the simulation results(from insight map) when the incentive for collecting plastic waste is increased. It can be observed on (b), that with the incentive increased it will now take half the time for plastic waste to decrease to 150 metric tones . Thus the government can adopt this to help reduce plastic waste in Accra

RECYCLING COMPANIES

GAP

- Limited types of plastic recycled

LEVER OF CHANGE

- Introduction of extended producer responsibility on the type of plastic they produce
- Standardization of the type of plastic that is recyclable
- Collaboration with companies that reuse plastic



SENSITIZATION BY NGOS

GAP

- Lack of consistency in sensitization campaigns

LEVER OF CHANGE

- Maximize the use of media to raise awareness
- Increase the frequency of sensitization workshops



COMPANIES THAT DEPEND ON PLASTIC PACKAGING

GAP

- improper disposal after collecting plastic eg burning
- No localized collection sites
- No localized incentivising structures for plastic collection

LEVER OF CHANGE

- establishing a network of community level waste collectors
- collaboration with companies that re use and recycle plastics

