H1 Geography Weighted Assessment 1

Marking scheme

1 Resource 1 shows the Waste Generation Index and Recycling Index of countries in 2019. Resource 2 shows disposal methods of non-hazardous solid waste of countries by income level. Resource 3 shows a photograph of the Bhalswa landfill site in New Delhi, India- a middle income country.

a) With reference to Resource 1, describe the relationship between the Waste Generation Index and Recycling Index of countries. [4]

Award 1 mark for each description of the relationship between the Waste Generation Index and Recycling Index of countries, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each description, where applicable.

Possible responses include:

- Generally, countries with higher waste generation rate (low index) tend to score higher in the Recycling Index as well. E.g. Germany with 10 on Recycling Index and 1.2 on Waste Generation Index [1]
- On the other hand, countries with lower waste generation rate, (high index) tend to score lower in the Recycling Index as well. E.g. India with 2 on Recycling Index and 7.5 on Waste Generation index [1]
- There are some exceptions/outliers to this trend, especially for some high income and upper middle income countries away from the best fit line (e.g. Japan with a significantly higher recycling rate despite having a lower waste generation rate than countries like US) [1]
- Income has a strong correlation with the Recycling and Waste Generation Index as higher income countries tend to have higher recycling and higher waste generation (E.g. US) whilst lower/lower middle income countries have lower recycling and lower waste generation rate (E.g. India) [1]

b) Using Resource 1, suggest reasons for the United States' position as shown in Resource 1. [4]

Award 1 mark for each reason for the position of US, to a maximum of 4 marks. Award a maximum of 1 additional mark for further development of each description, where applicable. Award a maximum of 2 marks for mention of only 1 Index.

Possible responses include:

- US scores the lowest on the waste generation index (0), which means that it generates the highest waste amongst all countries→ This is due to capitalistic consumerist culture in America with high affluence and demand for material goods which generate much waste in terms of packaging as well [2]
- US has a high score of 8 on the Recycling index due to technology and funds in investing in recycling infrastructure like machinery/ recycling stations [1]
- However, it is still lower than other countries like Germany and Japan who generate less waste→ could be due to mindsets of population/ lack of countrywide policies to encourage recycling [1]

c) With reference to Resource 2, describe the differences in disposal methods between high-income and low-income countries. [3]

Award 1 mark for each difference, to a maximum of 3 marks.

Possible responses include:

- More varied types of disposal methods in high income than in low income countries with landfill, recycling and incineration each taking up 30% of disposal methods compared to low income countries where its largely open dumps (93%) [1]
- Most common disposal method in low income countries is open dump (93%); in high income countries it is landfill (39%) [1]
- No 'other advanced methods' of waste disposal in low income countries but approximately 1% of such method used in high income countries [1]
- Most common method in high income countries landfill is the least common method in low income countries (39% vs 3%) [1]

d) Using Resource 2, explain how high-income countries can reduce their ecological footprint. **[5]**

Award 1 mark for each explanation, to a maximum of 5 marks. Award a maximum of 1 additional mark for further development of each description, where applicable.

Possible responses include:

- High income countries can reduce their eco footprint by reducing reliance on landfills as shown in resource 2 through taxing companies or consumers. [1] Landfills contribute to a high eco footprint as it requires land space to absorb waste generated by countries [1]
- High income countries can reduce their eco footprint by incorporating energy generation with incinerators as incineration is the 3rd most common method as seen in Rs 2. [1] Incinerators can have a large footprint as they generate emissions and require a large area of land as well→ a possible way is to incorporate waste to energy plants to reduce the footprint as energy generation can reduce the land needed for energy/fuel needs. [1]
- High income countries can reduce their ecological footprint by increasing recycling rate as it is only 29% as seen in Rs 2. [1] This can be done through campaigns/ making recycling infrastructure more accessible so that less land will be needed to produce goods needed for the city [1]

e) With reference to Resource 3, explain how waste generation can influence progress towards sustainable development in cities like New Delhi. **[6]**

Award 1 mark for each explanation, to a maximum of 6 marks. Award a maximum of 1 additional mark for further development of each description, where applicable. Award a maximum of 3 marks for only 1 dimension of sustainable development.

Possible responses include:

- Waste generation and accumulation in landfills as shown in Rs 3 can influence progress towards environmental aspect of SD→ as seen in the picture, burning waste can emit GHG into the atmosphere which can contribute to air pollution. When wastes end up in waterbodies, it can lead to water pollution and affecting marine life as well. [2]
- Waste in landfills can also influence progress towards the social aspect of sustainable development. Decomposing waste often produce toxic leachates and a health hazard for people who live near landfills and rely on it as a livelihood thorough waste picking [2]
- Waste generation can affect progress towards economic aspect of development as open dumps and landfills as shown in Rs 3 as seen in most developing countries take up a large area of land and there are opportunity costs involved as this can be a viable piece of land for economic development in cities where industries can be developed instead. This can also deter foreign investors. [2]