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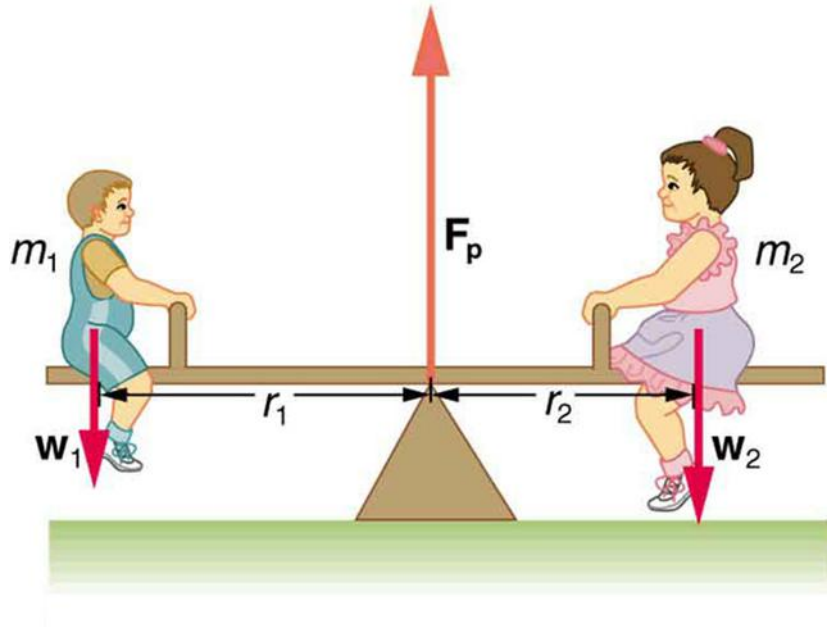
Problems with Recycling and how to fix them.

Recycling: Balancing growth and Sustainability

Sustainability



Economic Growth

Circular Economy

Proximity Principle

Key Recycling Metrics

According to REPAK:

In 2016, 98,238 tonnes of plastic were recycled, representing 36% of the total estimated 275,510 tonnes of waste plastic packaging generated in Ireland.

This 36% of recycled plastic represents the equivalent of 4,912 40ft shipping containers of plastic material.

EU members must achieve 50% recycling for plastic by 2025.

Major problems with Recycling/Circular Economy

1. Some householders are using the green bin as a cheap route to dispose of household waste. (25% contamination).
2. Consumer confusion: large amounts of non-recyclable packaging on the market that is labelled as recyclable.
3. It is very difficult to collect clean single stream recyclate from a co-mingled green bin.
4. Until now, there have been no targets for inclusion of recyclate in packaging or goods.
5. We are massively over dependent on developing nations as an outlet for “recycling”.
6. In developing countries, the external environmental costs are usually excluded. The reject fraction, >30%, is often dumped in fields and streams and then washed into the ocean during monsoon events.

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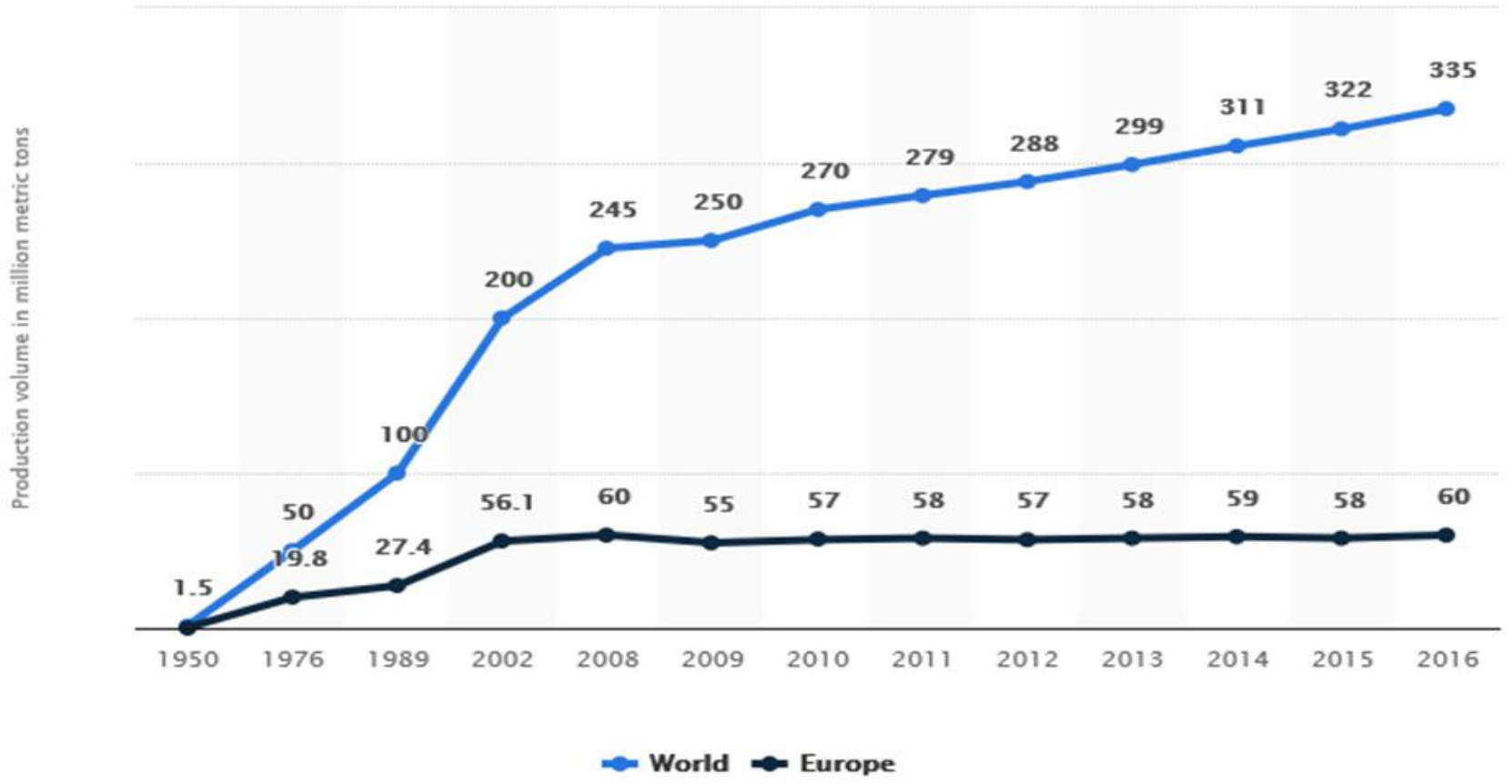
Urgent need to act immediately on plastics



Staggering Numbers

- In 2016, the global production of plastics reached 335 million metric tons
- In 2015 approx. 10% was recycled and 12% incinerated.
- 90% of all plastic used is virgin plastic.
- Until 2017 China was the primary outlet for the vast majority of global recyclate.
- in 2016, China imported 7.3 Million tonnes of plastic scrap from Europe, Japan and USA.
- At least 4.8 million tonnes of plastic end up in the sea annually.
- **80% of ocean plastics arises from 5 countries, all in South East Asia.**

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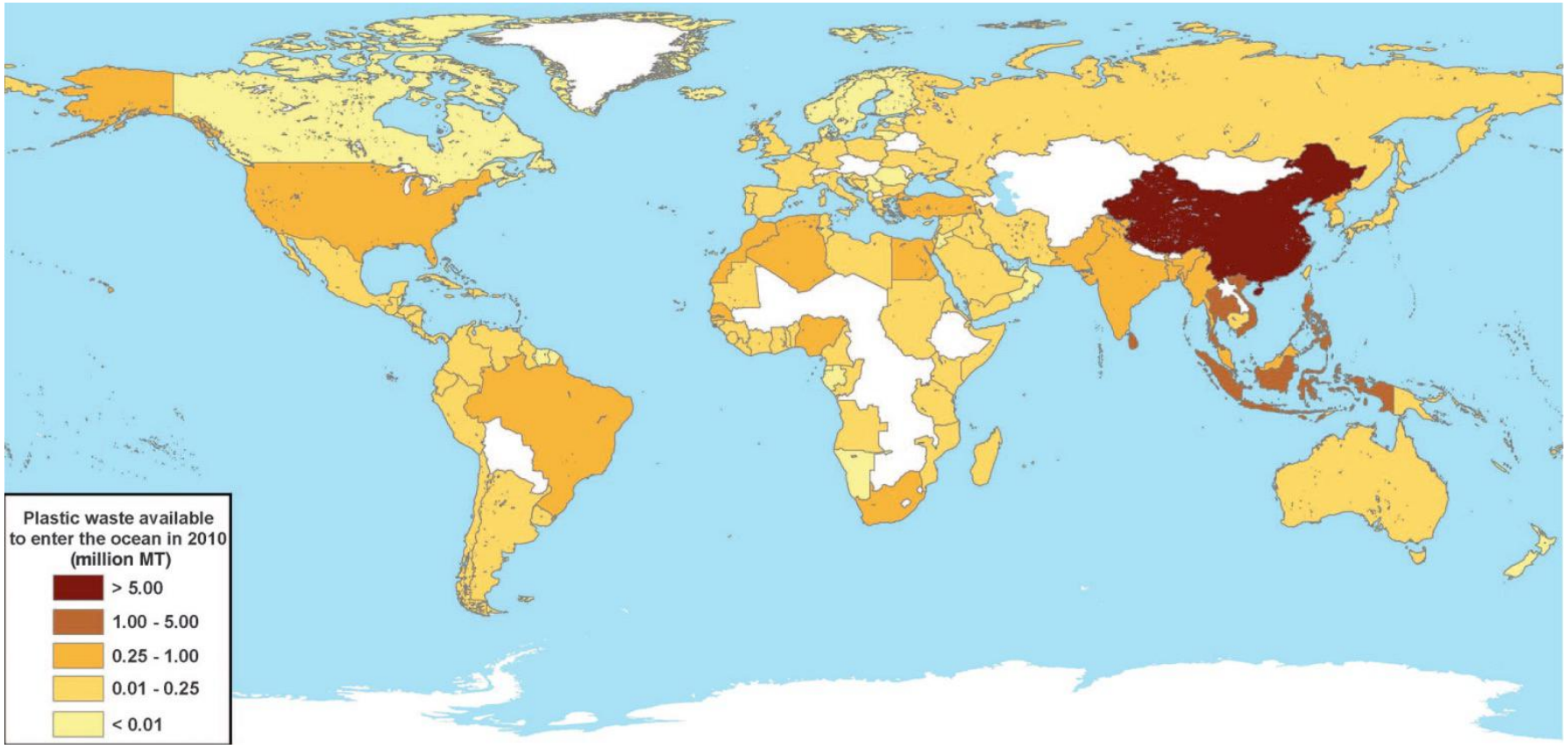
Local origin = global impact



Why did China shut its doors?

According to the Chinese Environmental Ministry there are a number of reasons:-

1. Growing concerns with pollution.
2. No economic outlet for reject material.
3. Growing concerns with human health.
4. Increased labour costs.
5. Increasing urbanisation and growth of middle class.
6. Growth in domestic waste arising.

What needs to happen… (1)

1. Establishment of a national packaging forum.
2. Incorporation of eco-design into packaging.
3. Remove labelling confusion. Additional responsibility on public.
4. Include automation friendly features into packaging/labelling.
5. Producer/Retailer responsibility approach to packaging.
6. Establishment of targets for inclusion of recycled polymer into new products or tertiary packaging. Beat the new EU targets.

What needs to happen (2)

6. Rules based approach to packaging:-
   i. If it can't be recycled within the EU, should it be on the market?
   ii. If it doesn't biodegrade, it shouldn't be sold as biodegradable.
   iii. If it is not recyclable, it should not be labelled as recyclable.
   iv. If its isn't recyclable it should be easily used for energy recovery.
7. Provision of local recycling infrastructure to meet EU recycled content targets.
8. Recycling must fall in line with the proximity principle (out of sight out of mind is not recycling)
9. Indifference is not sustainable

LDPE Recycling Plant