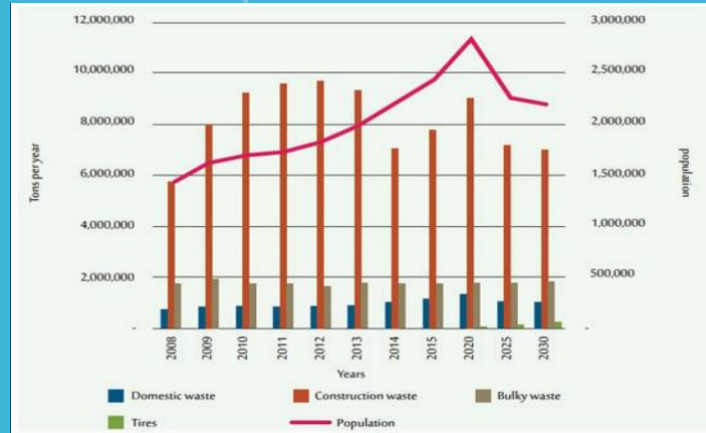


Single-Use Plastic Pollution in Qatar's Marine Ecosystems

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Problem: Plastic Pollution

- Plastic consumption has increased due to its durability and low cost
- Single-use plastics take hundreds of years to decompose and lead to pollution
- Qatar is experiencing an excessive use of single-use plastic
- The west coast of Qatar has 1.98 items per square meter of marine litter, with plastics making up 71.4% of that total.



Historic and projected waste production from 2008 to 2030, from the Planning and Statistics Authority in Qatar

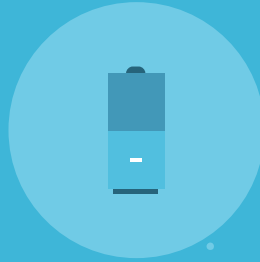
300,000

Whales, dolphins and propoises die from plastic ingestion annually (Faunc & Flora International)

Possible Solutions



Upgrade plastic recycling facilities with advanced sorting tech



Biodegradable plastic use



Install Waterway Filters to Trap Plastic Waste



Develop Plastic-to-Fuel Conversion Methods

1 Upgrade plastic recycling facilities with advanced sorting technology

1. Improved Sorting Accuracy
 - a) Use optical scanners and NIR spectroscopy
 - b) Better identification and sorting of plastics
2. Reduced Contamination
 - a) Minimize contamination in recycled bales
 - b) Prevent un-usability in applications
3. Increased Recycling Rates
 - a) Advanced technology boosts sorting accuracy
 - b) Higher recycling rates for plastics



2 Biodegradable Plastic Use

1. Biodegradable Plastics Overview
 - a) Designed for faster decomposition than traditional plastics
 - b) Appealing alternative to conventional materials
2. Variability in Biodegradability
 - a) Decomposition rates of biodegradable plastics vary widely
 - b) Some may take years to fully decompose
3. Application Limitations
 - a) Not suitable for all uses due to varied decomposition rates



3 Install Waterway Filters to Trap Plastic Waste

- Capture plastic debris before it reaches the ocean
- Prevent harm to marine life
- Reduce microplastic pollution



4 Develop Plastic-to-Fuel Conversion Methods

- Convert plastic waste into usable fuels
- Reduce reliance on fossil fuels
- Important to consider environmental impact



Decision Matrix

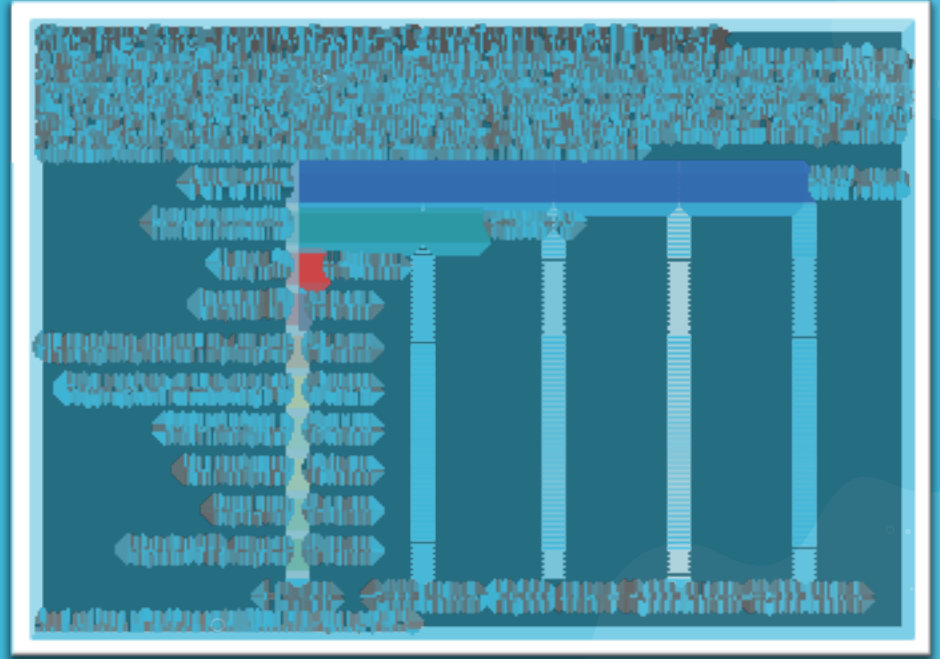
Criteria	Upgrade Recycling	Biodegradable Plastic	Waterway Filters	Plastic-to-Fuel
Environmental Impact	3	4	3	3
Social Impact	2	5	2	1
Economic Impact	4	3	2	2
Technical Feasibility	4	5	2	4
Total	13	17	9	10

(1 = lowest 5 = highest)

As biodegradable plastic has the largest value it will be the most effective solution

Implementation in other countries

- Bangladesh was the first country to impose a total ban on plastic.
- The ban was enacted in 2002.
- The primary reason for the ban was to address flooding issues caused by plastic.



Chosen Solution: Biodegradable Plastic

- Reduced Waste in Landfills
- Potentially Lower Environmental Impact
- Help Reduce Plastic Pollution



References



Thank You Questions?

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