

Plastic food and beverage packaging in small island developing states:

Mapping the flow to identify innovation

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Introduction - Why this study?

After spending eight years working for an environmental education organisation in the small island developing state (SIDS) of Barbados, I grew increasingly interested in how we could make better use of valuable municipal solid waste in island contexts.

I chose to focus on plastic food and beverage packaging materials ('Plastics') in SIDS for three main reasons:

1. Ubiquity of plastic

Globally, the majority of the population engages with plastic daily. It provides a valuable resource and for packaging, helps to contain, protect and preserve the product and inform the user [1].

2. Lack of options

There are limited options for SIDS to adopt the 3R's - reduce, reuse, recycle - for Plastics.

3. Limited literature

When I started, there was a literature gap. A lot of attention on marine plastic and SIDS, but limited attention to how Plastics arrive in SIDS, why it is generated, and how it is managed. I'm happy to say this is now changing.

Plastic provides benefits, but also creates challenges. This study identifies these from the perspective of SIDS.

Global plastic production

1.7

MILLION TONNES 1950

According to PlasticsEurope, all plastic production has increased from 1.7million tonnes in 1950 to 359 million tonnes in 2018 [2].



MILLION TONNES 2018



40%

ALL PACKAGING



Up to 70%

FOOD AND BEVERAGE PACKAGING

BETWEEN 71 AND 100 MILLION TONNES OF PLASTIC IS USED ANNUALLY TO DELIVER SAFE, PROTECTED FOODS AND BEVERAGES GLOBALLY



Why study plastic and SIDS?

Over the last 70 years, many small island developing states (SIDS) have become **import dependant for food supplies**. [3,4,5,6,7]. During this time, with a transition from subsistence lifestyles to modern, cash lifestyles, **convenience** has also driven packaged food consumption increases [8,9,10,11].

But **SIDS have limited voice** in the packaging that products are delivered in as most packaging decisions are made outside their borders [6].

Then, when food and beverage products are consumed, **post-consumption packaging often has nowhere to go**. In smaller, regional areas in SIDS with no collection, packaging waste is burned, buried or dumped. For urban areas with collection, it can go to a controlled dumpsite or landfill [12].

Limited options for recycling are available, primarily because of cost and scale [13].

SIDS are the focus because of their unique constraints and barriers from increasing use of packaging to deliver foods and beverages to the store shelves in these small island, large ocean states.



Research Question: What was studied and where?

What: The flow of plastic food and beverage packaging material (**Plastics**) to and through SIDS to identify opportunities for locally appropriate innovation and other supportive innovation.



Where: 4 SIDS in 3 regions:
 Vanuatu (Pacific),
 Barbados and
 St Vincent and the
 Grenadines (Caribbean),
 and Seychelles
 (Indian Ocean).

Key findings

1. Plastic packaged food is imported from developed and larger manufacturing economies and is governed by world trade agreements;
2. Plastic packaging is in many cases necessary to preserve the integrity of food and beverage product inputs;
3. Case study SIDS are food import dependent;
4. **Plastics** are imported easily but not exported easily due to scale and cost;
5. Information & education, enforcement, separation, and domestic recycling ranked highly as locally appropriate innovations; management is key;
6. Packaging designs do not consider all buying markets;
7. What is known as the SIDS **Plastics System** in this research contains a complex range of actors (those who actively participate in the **Plastics Chain**) and stakeholders (those who influence or support the Chain).



Analysis of more than 250 participant responses across all 4 SIDS plus observation, shelf audits, packaging audits, and document reviews.

Key recommendations

- Regulatory policy:** Reduce packaging produced in-country (if possible);
- Economic policy:** Incentivise and support **Plastics** separation and collection domestically in SIDS;
- Address 'vanishing value':** Re-establish value across all steps in the SIDS **Plastics Value Chain**;
- Education:** Critical at all steps in the Chain;
- Innovation:** Invest in R&D to design locally appropriate management solutions - high-tech is not always necessary;
- Collaboration:** SIDS to work with brand owners/manufacturers to design packaging that does not increase food loss and waste but is appropriate for limited post-consumption management capacities;
- Responsibility:** Shared by all who participate across the SIDS **Plastics Value Chain** (including international actors); and
- Global Integrated Plastics System Innovation (IPSI):** Could offer shared responsibility and value - all the way to and through SIDS.

Acknowledgements

So many to mention! Specifically, thank you to the many wonderful participants - those people whose contributions form the basis of this research; to my advisors, my family and friends. For a fuller list, please email nicole@useplasticbetter.org.

References

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