PACIFIC OCEAN LITTER PROJECT

Assessment of the effectiveness of bans, levies, and other instruments addressing single use plastics in the Pacific Islands region

Australian Aid

SPREP
Secretariat of the Pacific Regional Environment Programme

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Assessment of the effectiveness of bans, levies, and other instruments addressing single use plastics in the Pacific Islands region.

Apia, Samoa :
SPREP, 2024.

58 p. 29 cm.

ISBN: 978-982-04-1363-4 (print)
978-982-04-1364-1 (ecopy)

1. Recycling (Waste, etc.) – Technical reports – Oceania. 2. Waste management – Refuse and refuse disposal - Oceania. 3. Waste minimization – Cost effectiveness – Oceania. I. Pacific Regional Environment Programme (SPREP). II. Title.

363.728 20961

This study was commissioned by the Pacific Ocean Litter Project and conducted by Justin Rose Consulting.

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SPREP's vision: *The Pacific environment, sustaining our livelihoods and natural heritage in harmony with our cultures.*

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Executive Summary

This Executive Report

This is the report for the project: Assess the effectiveness of bans, levies, and other instruments addressing single use plastics in the Pacific Islands region, undertaken on behalf of the Pacific Island Litter Project (POLP) at SPREP.

Thirteen of the fourteen Pacific Island Countries (PICs) included in this project have enacted legislation banning non-biodegradable single use plastic (SUP) shopping bags. Tonga, which has no SUP ban, has instead enacted a levy. Tuvalu, Vanuatu and Solomon Islands have banned a broader range of SUPs.

The findings of this project, which report a variety of experiences and success-rates for SUP bans, largely mirror the global conclusions reached by UNEP in *Single Use Plastic: A Roadmap for Sustainability*. This report aims to contribute to higher rates of compliance and SUP reductions as PICs move forward in developing future SUP programs, policies and legislation. Its recommendations include specific reform measures as well as 'big picture' or 'high ambition' options.

This report is based on knowledge and information generated from consultative meetings with key stakeholders, including discussions with responsible government officers from every PIC, and from reviewing relevant literature. Stakeholder discussions consisted of 27 consultative meetings undertaken between February and April 2024.

Single Use Plastics

The United Nations Environment Programme (UNEP) defines SUPs as **plastic items intended to be used only once before they are thrown away or recycled**.

Examples of SUPs include cotton buds, plastic straws, plastic drink stirrers, plastic cutlery, polystyrene food containers, most processed food packaging, produce wrapped in plastic twine or plastic film, plastic netting, sweet wrappers, miniature bottles of shampoo or conditioner, miniature tubes of toothpaste, ice-blocks that come in throwaway plastic wrappers or tubes, and small plastic drink containers that are designed for consumption in a single sitting.

SUPs flow through consumptive chains from first introduction to eventual destruction or discharge. Most SUPs in PICs are imported (some are manufactured in Fiji and Papua New Guinea). Banning the manufacture or import of SUP categories reduces the flow of SUPs into PICs and so relieves the burden of disposal or eventual leakage of plastic waste; SUP bans have a strong potential to be an effective mechanism.

This emphasises the logic inherent in the 'waste management hierarchy': the best and highest priority solution in waste management is to avoid creating any waste in the first place.

Not all SUP waste can be avoided and there are advantages of using a combination of interventions (e.g., bans, taxes, container deposits, education and information, and improved waste management and recycling) to achieve change across the whole system.

PIC SUP Measures

All PICs have legislated measures to reduce the harm of SUPs. Tonga is the only PIC that has not legislated a ban on non-biodegradable single use shopping bags. In Nauru, Palau and Cook Islands the only measure in place is a ban on non-biodegradable single use shopping bags. Niue and Papua New Guinea banned both biodegradable and non-biodegradable shopping bags. All other PICs banned wider categories of SUPs.

The general trend among PICs is towards expanding the bans to include a broader range of products. Four countries (Vanuatu, Solomon Islands, Tuvalu and soon Cook Islands) have a significantly broader range of banned products specifically determined in response to observations of their SUP waste streams and/or marine litter audits.

Levies are applied in Fiji, Tonga (shopping bags) and Vanuatu (non-biodegradable nappies).

Effectiveness of PIC SUP Bans

No reliable quantitative data was available in any jurisdiction to make 'scientifically sound' judgements regarding effectiveness. The evidence available regarding the effectiveness of the SUP bans were self-assessing observations by the PIC respondents. While relying solely on self-assessment answers is not ideal, the views reported do provide legitimate evidence of SUP ban effectiveness.

Effective SUP Bans	Partially Effective SUP Bans	Non-Effective SUP Bans
Vanuatu	Federated States of Micronesia	Cook Islands
Tuvalu	Fiji	Samoa
Marshall Islands	Kiribati	Papua New Guinea
Solomon Islands?	Palau	
	Nauru	Tonga (levy only)
	Niue	

The following factors are considered in explaining the differences in effectiveness of the SUP bans:

- Capacity of PIC agencies to enforce the law
- Authorising all appropriate compliance officers in enforcing the SUP ban
- The availability of summary enforcement notices (on-the-spot fines)
- Eliminating exemptions for biodegradable SUPs
- Availability of alternatives for banned SUPs
- The culture and politics of SUP compliance and enforcement
- Measures that are complementary of SUP compliance and enforcement, such as awareness and education programs

Policy Gaps and Recommendations

The following were identified as regulatory and policy gaps or additional required measures for SUPs in PICs:

- Expand SUP bans in phases over time
- Improve enforcement of SUP bans
- National strategic planning for SUP reduction
- Enhanced auditing of SUP imports through new HS classifications
- Improved design and enhanced monitoring and evaluation of SUP awareness and education programs
- Promote and facilitate sustainable alternatives
- Explore additional regulatory options for SUP reduction
- Promote recycling and waste reprocessing, prioritising in-country options
- Assess the feasibility of plastic packaging taxes to reduce SUPs and direct revenue towards reducing harms of SUPs
- Improve and expand waste collection services
- Field monitoring of SUP content in the waste and litter streams to gauge ban participation and effectiveness

The final section of the report outlines 14 recommendations to address SUP policy gaps and to enhance the effectiveness of PIC measures to address SUPs.

Authors and Acknowledgements

Authors of the report are Justin Rose, Paul Martin and Catherine Moltzen. Stewart Williams reviewed the report.

The authors express their gratitude to all the respondents who generously volunteered their time in sharing their deep knowledge and experience of managing SUPs in PICs.

1. Introduction

This report documents the outcomes of the project: 'Assess the effectiveness of bans, levies, and other instruments addressing single use plastics in the Pacific Islands region', undertaken on behalf of the Pacific Island Litter Project (POLP) at SPREP.

Every Pacific Island Country[1] (PIC), except one, has enacted legislation banning non-biodegradable single use plastic (SUP) shopping bags. Tonga, which has no SUP ban, enacted a levy in 2013 and has recently indicated that they intend to ban a selection of SUPs. Tuvalu, Vanuatu and Solomon Islands have banned a broader range of SUPs including straws, cutlery and polystyrene containers, among others. PIC's have implemented their SUP measures in a country-specific manner. The reported outcomes of the measures differ substantially between countries. We note that robust quantitative assessment data is absent in all cases.

The core findings of this project largely mirror the global conclusions reached by UNEP in *Single Use Plastic: A Roadmap for Sustainability*:

> *It is too early to draw robust conclusions on the environmental impact that bans and levies have had. In 50 per cent of cases, information about their impact is lacking, partly because some countries have adopted them only recently and partly because monitoring is inadequate. In countries that do have data, about 30 per cent have registered drastic drops in the consumption of plastic bags within the first year. The remaining 20 per cent of countries have reported little to no change. Of the countries that have reported little to no impact, the main problems appear to be (i) a lack of enforcement and (ii) a lack of affordable alternatives.*[2]

Despite a lack of reliable data to confidently measure the effectiveness of SUP bans, levies and other measures in PICs, the information and experiences documented in this report can contribute to the development and implementation of SUP programs, policies and legislation moving forward. The recommendations include specific reform measures and 'big picture' or 'high ambition' options.

1 For the purposes of this project, PICs are Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

2 UNEP (2018). *SINGLE-USE PLASTICS: A Roadmap for Sustainability* (Rev. ed., pp. vi; 6).

The **Terms of Reference** required the authors to:

a. Identify the regulatory and other measures currently in place as of 2023 to ban, reduce or replace SUPs in PICs.

b. Analyse the effectiveness of existing measures – what is or is not working well?

c. Analyse why existing measures are effective or not, including consideration of root causes and behaviour that lead to non-compliance by customs, businesses, and consumers.

d. Analyse where regulatory and policy gaps exist and what additional measures could be effective.

e. Recommend measures that would be most impactful for reducing the import and use of SUPs in individual PICs.

f. Recommend actions that could be implemented under the POLP to improve effectiveness of regulatory or other measures in individual PICs.

Accordingly, the report is structured as follows:

Section 2 describes the project's methodology and definitions.

Section 3 discusses the context for managing SUPs in PICs.

Section 4 outlines the regulatory and other measures in each PIC.

Section 5 analyses what is (or is not) working well and discusses possible reasons for non-compliance.

Section 6 draws upon the consultation meetings and published literature in discussing policy and regulatory gaps, as well as possible additional measures.

Section 7 sets out recommendations for PICs and for POLP.

2. Methodology, Definitions of SUPs and Characterising SUP Flows

2.1 Methodology

The information upon which the project is founded was generated from consultative meetings with key stakeholders, including discussions with responsible government officers from every PIC, and from the relevant literature. These sources provide differing perspectives, as the interviews primarily reflect the outlook of those creating and implementing programs, compared to the typically critical (and often retrospective) perspective of the literature, which usually aims to identify areas where things are not working to arrive at recommendations for improvement. All perspectives are valid, but they may create different impressions.

The stakeholder discussions consisted of 27 consultative meetings with representatives of the organisations noted in Appendix 1 and were undertaken between February and April 2024. The topics and themes covered in the discussions were:

1. General Observations Regarding SUP Management
2. Bans on SUPs
    - 2.1 Products covered by bans
    - 2.2 Stakeholder engagement
    - 2.3 Lead times (phase-in periods)
    - 2.4 Alternatives to SUPs
    - 2.5 Public education and outreach
    - 2.6 Compliance and enforcement issues
    - 2.7 Summary enforcement notices (on-the-spot fines) vs court procedures
    - 2.8 Biodegradability exception for plastic shopping bags
    - 2.9 Observations regarding the effectiveness of bans
3. Levies on SUPs
4. Container Deposit (or Advanced Recycling Fee) Schemes
5. Litter laws, policies and compliance
6. In-country Recycling of SUPs
7. Waste Collection Systems and SUP Leakage
8. Rural v Urban SUP Management
9. Other SUP Issues

The literature review commenced by assembling a library of documents and websites for analysis, from sources including:

- The SPREP virtual library (https://library.sprep.org) and documents provided by POLP;
- Research materials previously assembled by the authors, particularly those concerning environmental behaviour change and program evaluation;
- Google Scholar keyword searches (https://scholar.google.com.au); and
- Materials collated in the Nicholas Institute for Energy, Environment & Sustainability, Plastics Policy Inventory, and Plastics Policy Effectiveness Study Library
- (https://nicholasinstitute.duke.edu/plastics-policy-inventory and https://nicholasinstitute.duke.edu/effectiveness-study-library).

Two preliminary issues were apparent. First, there is a lack of directly relevant empirical evidence to address the evaluation questions asked in the Terms of Reference, i.e., how effective are PIC SUP bans, levies and other measures? The second is that though many documents deal in some way with SUPs, waste generally, waste audits and assessments there is little authoritative analysis of the effectiveness of SUP initiatives, and specific quantitative data to judge SUP controls effectiveness is rarely collected.

Numerous 'waste audits' have been conducted in PICs in recent years, but these do not disaggregate the data in a manner that matches SUP measures in place. These audits are mostly 'general waste' audits and not specific to SUPs. The IUCN Plastic Waste Free Islands surveys in Fiji, Samoa and Vanuatu were an exception to this, which audited against plastic resin types but did not identify other data such as product, brand or package type.

In addition, the waste audits are snapshots in time, and do not provide measurements prior to and after bans or levies are enacted, so the impact of specific initiatives is not objectively identifiable. The absence of data to assess SUP measures is reported in the literature, not just for PICs, but for most countries and regions.[3]

For example, the Australia, New Zealand and Pacific Plastics Pact (ANZPAC Plastics Pact)[4] in seeking to also use the recent mostly generic waste audits to inform their planned 'State of Play Analysis' on soft plastics, have found the same lack of data granularity and are currently considering other approaches such as new targeted plastics audits.

Our interviews confirmed both the absence of this data, and the need for it to be generated in the future to enable accurate evaluations of PIC's SUP measures. Several recommendations address this need.

3 March, A., Karasik, R., Roberts, K., & Evans, T. (2023). Limited knowledge of national plastics policy effectiveness may hinder global progress. *Cambridge Prisms: Plastics*, 1(2021), 1–6.

4 https://anzpacplasticspact.org.au/

Beyond this search for quantitative data, the main thematic areas categorised in our literature review were:

- Waste data and waste analyses (particularly coastal and marine)
- Effectiveness evaluations of waste and plastics management, particularly in the PIC regions
- Social behaviour change strategies, concerning plastics waste and (given the limited sources) more broadly
- Information concerning plastics pollution, including micro-plastics
- Plastic recycling initiatives
- Waste and plastics management strategies and policies, including regulation.

We particularly sought documented evidence specific to the PICs, but expanded out this focus when the available evidence was very 'thin' (and where the issues being considered justified this).

The voluminous plastics literature required significant filtering to ensure focus on the most relevant and potentially useful documents. This literature selection was performed manually. PIC laws, policies and strategies were examined separately.

160 records were initially selected and "tagged" for further consideration (using 218 "tag" words or phrases, such as country names). The list was further refined to 90 records after considering what was most directly relevant to the research issues and to the target jurisdictions. Some of these documents contain consolidated evidence from previous studies (viz. meta-analysis or literature reviews). We prioritised information concerning the 14 countries of concern, but jurisdiction-specific information was limited for many issues (e.g., effectiveness, behaviour change interventions).

2.2 Defining 'Single Use Plastics' and Related Terms

The United Nations Environment Programme (UNEP): defines SUPs as "plastic items intended to be used only once before they are thrown away or recycled."[5]

The *European Union Directive on Single-Use Plastics* defines SUPs as "a product that is made wholly or partly from plastic and that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived."[6]

The draft *Vanuatu National Plastics Strategy* (2020-2030)[7] defines SUPs as "products made of, containing, or packaged in plastic that are designed to be used only once" and provides the following examples: cotton buds, plastic straws, plastic drink stirrers, plastic cutlery, polystyrene food containers, most processed food packaging, produce wrapped in plastic twine or plastic film, plastic netting, sweet wrappers, miniature bottles of shampoo or conditioner, miniature tubes of toothpaste, ice-blocks that come in throwaway plastic wrappers or tubes, and small plastic drink containers that are designed for consumption in a single sitting.

5 UNEP (2018). *SINGLE-USE PLASTICS: A Roadmap for Sustainability* (Rev. ed., pp. vi; 6).

6 Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019 on the reduction of the impact of certain plastic products on the environment.

7 Government of Vanuatu (draft) *Vanuatu National Plastics Strategy* (2020-2030) Port Vila, 2020.

The draft *Vanuatu National Plastics Strategy* defines several useful sub-categories and closely related terms:

> "Avoidable single-use plastics are SUPs that are non-essential or sustainably replaceable, and which can be removed from circulation without negatively impacting on human health or wellbeing."[8]
>
> "Tragic plastics are a sub-set of single-use plastics and comprise flexible plastic food packaging such as biscuit packets, lolly wrappers, chip wrappers and noodle packets. This waste type is considered 'tragic' because it is a dominant source of terrestrial and marine litter, but hard to regulate in that its use ensures that products are kept fresh, contained and/or uncontaminated."[9]
>
> "Mobility plastics are another sub-set of single-use plastics and may also include tragic plastics. Mobility plastics are associated with being 'on the move', that is they are consumed or used outside of the home environment, and therefore have a higher chance of being improperly disposed of."[10]
>
> "Medium-use plastics are products made of, containing, or packaged in plastic that are used for up to two years. In most cases they comprise a plastic vessel that contains another product. Examples include: large format personal care products (such as shampoo and conditioner), large drink bottles, dishwashing liquids, oils, sauces, plastic toys, toothbrushes, plastic razors, and plastic combs."
>
> "Primary microplastics are solid plastic particles that have a diameter of between 1–5 millimetres which are intentionally added to a manufactured product."[11]

We note that microplastics are plastic pieces less than five millimetres long, which can be harmful to the ocean, aquatic life, the health of humans and other mammals.[12] Apart from primary microplastics, other sources of microplastics include degrading paints, tyres, textiles, and geotextiles.

8 Government of Vanuatu (draft) *Vanuatu National Plastics Strategy* (2020-2030) Port Vila, 2020.

9 Government of Vanuatu (draft) *Vanuatu National Plastics Strategy* (2020-2030) Port Vila, 2020.

10 Government of Vanuatu (draft) *Vanuatu National Plastics Strategy* (2020-2030) Port Vila, 2020.

11 Government of Vanuatu (draft) *Vanuatu National Plastics Strategy* (2020-2030) Port Vila, 2020.

12 National Oceanic and Atmospheric Administration (NOAA) *What are microplastics?* (https://oceanservice.noaa.gov/facts/microplastics.html).

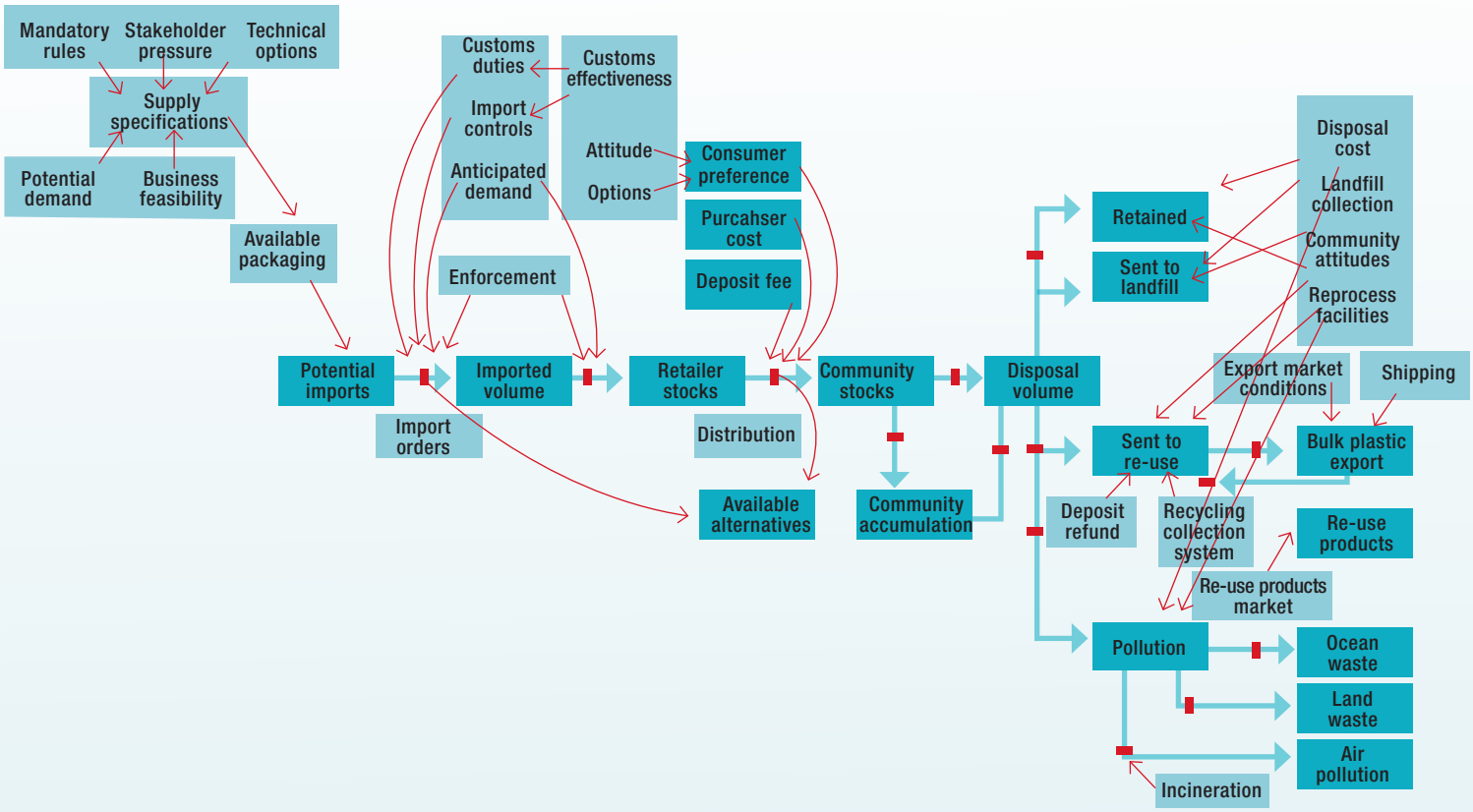
2.3 Characterising SUP Product Flows

The category "Single Use Plastic" disguises the subject's complexity, as outlined below. This complexity impacts choices and options for SUP reduction and management.

- The term 'SUP' encompasses diverse products and chemistries. The category includes everything from PET bottles, plastic film and plastic bags, packaging material, polystyrene containers and diapers, through to specialised disposable equipment (e.g., plastic tweezers, syringes, or single use tools), and micro-plastics embedded in other products.
- Each product type involves a particular "material flow" from initial introduction to eventual disposal or discharge into the environment. Some follow a conventional retailing chain from the consumer to the environment; others follow an industrial value chain; and still others (e.g., catering equipment for the tourism trade, or medical disposables) involve specialised channels.
- The relevant transactions involve actors with various roles - and behaviours - which in turn affect the flow of SUPs. The behaviour of these actors is shaped by many influences and institutional arrangements.
- There is increasing awareness of the risks that different plastic materials pose to human health and the environment. This evolving understanding particularly concerns damage from microplastics, and the effects of plastic on human health, in addition to the more conventionally understood environmental impacts.
- The technical, regulatory and social instruments and strategies being used around the world for SUP reduction and management are rapidly changing.

In common with many other countries and regions, PIC SUP policies and strategies typically focus on a few product types and use a limited range of interventions.

The materials flow for retail plastic bags

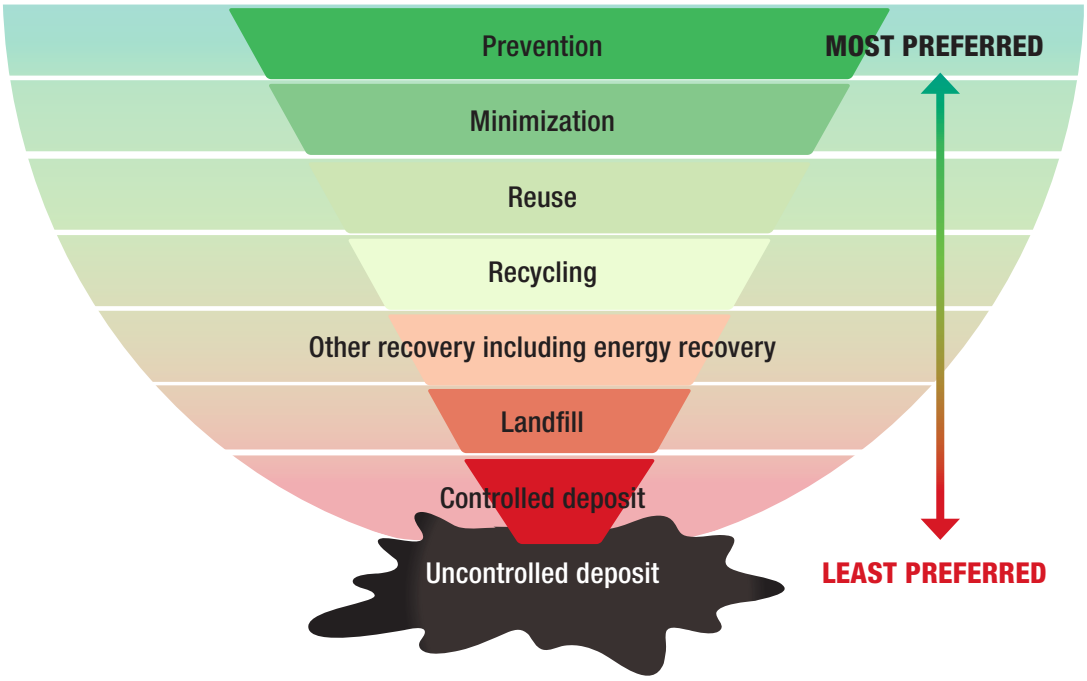


This diagram illustrates the stages and transactions that determine the flow of imported plastic bags into ocean waste, land waste (managed or unmanaged) and air pollution. Many public and private variables affect that flow, with decisions made by importers, users, suppliers, government agencies, retailers, consumers, landfill and reuse bodies, and the community. Similar material flow diagrams could be prepared for other plastic products to guide comprehensive materials flow management strategies.

The diagram above highlights that plastics move in stages from first introduction through to eventual destruction or discharge. Plastics are either locally manufactured or imported. Most SUPs in PICs are imported, although some are manufactured in Fiji, Papua New Guinea and previously in Vanuatu. Banning the manufacture or import of SUP categories reduces the material flow and so relieves the burden of disposal or eventual leakage of plastic waste; bans thus have a strong potential to be an effective mechanism.

Identifying the flow of various SUP classes through social and economic pathways assists in identifying optimal points along the pathway to intervene. Typically, as plastic material moves from entry, through distribution and use, and then disposal or leakage, the number of transactions and actors whose behaviour is relevant increases dramatically. It is also apparent that the greater the number of variables that affect that behaviour, the more complex (and uncertain) is the task of governance.

The above observations emphasise the inherent logic of the oft-cited 'waste management hierarchy': the best and highest priority solution in waste management is to avoid creating any waste in the first place.



Source: Global Waste Management Outlook, UNEP, 2015.

Not all SUP waste can be prevented and studies point to the advantage of using a combination of interventions (e.g., bans, taxes and container deposits, education and information, and improved waste management and recycling), to achieve change across the whole system.[13]

The types of intervention that are likely to be feasible also change depending on what stage of material flow the intervention is directed. Arrangements such as bans are more likely to be effective in dealing with a concentrated population that can be cost-effectively supervised – or in the case of small PICs, a very small number of customs-controlled entry points for imported products - unlike attempting to deal with a large and distributed range of actors (whether these are retailers, citizens or other classes) whose behaviour is difficult to influence or monitor.

It is acknowledged that achieving community support for strong prohibitive or cost-increasing actions can, in many contexts, be difficult. This can lead to political complexities and community dissatisfaction, challenging the potential for tight control. A growing number of jurisdictions are introducing taxes to engage market forces to disincentivise plastic (or non-recycled plastic) manufacture and import across a much broader class of products than are typically subject to bans. Such measures also raise complex questions of political acceptance and economic efficiency. In all cases, effective enforcement is frequently a significant challenge.

13 Tudor, D. T., & Williams, A. T. (2021). The effectiveness of legislative and voluntary strategies to prevent ocean plastic pollution: Lessons from the UK and South Pacific. *Marine Pollution Bulletin*, *172* (July); Borg, K., Lennox, A., Kaufman, S., Tull, F., Prime, R., Rogers, L., & Dunstan, E. (2022). Curbing plastic consumption: A review of single-use plastic behaviour change interventions. *Journal of Cleaner Production*, 344 (September 2021).


Say NO to
PLASTICS
Single-Use Plastic Items
BANNED
PLASTIC CUPS
PET BOTTLED WATER (<1.5L)
PLASTIC STRAWS
PLASTIC CUTLERIES
PLASTIC BAGS
POLYSTYROFOAM TAKEAWAYS, CUPS & PLATES
PACIFIC OCEAN LITTER PROJECT
Australian AID
SPREP
Say NO to
PLASTICS
Choose Eco-friendly
ALTERNATIVES
RE-USABLE WATER BOTTLES/CUPS
CARDBOARD TAKE-AWAY BOXES & CUPS
COMPOSTABLE PLATES
ALTERNATIVE DRINKING STRAWERS
REUSABLE KITCHEN UTENSILS
REUSABLE ECO-BAGS
PACIFIC OCEAN LITTER PROJECT
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3. The Context of SUP Management in PICs

Contextual factors influencing the avoidance, reduction and management of SUPs in PICs are well reported in literature and well known to most readers of this report. This report thus outlines them only briefly.

In 2020 it was estimated that 310,000 tonnes of waste plastic was generated annually by PICs with less than 5% being recycled effectively.[14] Globally, modelling projections suggest that under current policies the use of plastics will almost triple by 2060, driven by economic and population growth. While developed countries are projected to double their plastics use during that period, the largest increases are expected in emerging economies in Sub-Saharan Africa and Asia.[15] In the absence of substantial policy commitments and effective action to reduce and avoid plastic usage, PICs should expect comparable rates of increase.

There is extreme asymmetry between those who benefit from creating the problem of plastic pollution and those who are forced to suffer its detrimental impacts and who spend scarce financial and other resources in trying to manage it and mitigate its harms on human health and the environment. This asymmetry exists in many locations throughout the world but is particularly severe in PICs, where most plastics are imported, where options for recycling, re-export or safe disposal are limited and comparatively more expensive.

The asymmetry noted above results in compounding injustice for PICs and Pacific islanders. The international plastics treaty currently being negotiated will hopefully provide mechanisms, including financial mechanisms, to reduce and address the serious problems caused by plastic pollution in the Pacific Island Region.

The geographic profile of PICs adds further difficulties. While there are substantial differences between countries, and excepting Papua New Guinea, PICs have small land areas and are remotely dispersed across the vast Pacific Ocean. Geographic isolation creates substantial challenges for waste management, including high transboundary transportation costs to recycling facilities, and in the smallest nations very limited availability of suitable land for safe waste disposal. Even in countries with larger land areas, inadequate infrastructure and frequent extreme weather inhibits the transporting of waste to engineered landfills. This often results in plastic waste being improperly disposed of or burned, causing severe environmental and health hazards.

Small populations and economies, in additional to the noted geographic remoteness, greatly inhibit the development and availability of in-country plastic recycling opportunities. The theory of a circular plastics economy assumes sufficiently high volumes of plastics that can be efficiently accumulated and transported to recycling facilities. These conditions are absent in PICs, which if they opt for recycling must pay high costs to tranship relatively low volumes of low-value plastic waste to international receivers. The Moana Taka Partnership (MTP) is assisting to alleviate some of this cost in several PICs but several countries cannot use this service and MTP applies to plastic waste, not products at an initial stage of reprocessing such as granulated or pelletised plastics.

Many PIC citizens rely heavily on marine resources for their livelihoods. Plastic pollution in coastal

14 SPREP, *Plastic Waste: Waste Technology Management Options*, 2020.

15 OECD *Global Plastics Outlook: Policy Scenarios to 2060*, OECD Publishing, Paris, 2022.

areas not only harms marine life but also threatens local economies dependent on fishing and tourism. The studies conducted by the UK CEFAS project found pelagic fish, reef fish and crustaceans had all ingested plastic in its Vanuatu study in 2018/2019.[16]

Tourism is a significant industry in many PICs, and while it can bring substantial economic benefits, it also generates a substantial amount of waste, including a disproportionately high volume of SUP waste. The UK CEFAS study for example found prominent Touristic locations dumping and burning plastic waste.[17] Balancing the economic benefits of tourism with the need for sustainable waste avoidance and management is crucial.

PICs are particularly vulnerable to the impacts of climate change, including rising sea levels and extreme weather events. Plastic pollution exacerbates these challenges by contaminating coastal ecosystems and contributing to habitat degradation. It has been noted that plastic wastes can act as a raft carry bacteria that damage coral reef integrity, accentuating climate vulnerability.[18]

PIC governments have severe deficits in financial and technical capacities in most areas of governance including waste management and SUP avoidance and reduction. Staff, knowledge, money and equipment are all in short supply. Among the core gaps in this 'governance armoury', as emphasised in several sections of this report, is the availability of necessary information to respond effectively to the challenges presented by SUPs.

16 Cefas Marine Litter Team et al (2019). *CLiP Vanuatu Microplastics in biota 2018*. Cefas, UK. V2.

17 Nicole T Garofano, Mike Webster *The Commonwealth Litter Programme: Final Report – Best Practices For Vanuatu,* 2019

18 https://www.abc.net.au/news/science/2018-01-26/plastic-pollution-killing-coral-reefs-study/9356194?utm_campaign=abc_news_web&utm_content=link&utm_medium=content_shared&utm_source=abc_news_web

4. SUP Measures in PICs – Bans and Levies

4.1 Introduction

All PICs have legislated measures to reduce the harm of SUPs. Table 1 presents a summary of the banned SUPs in PICs. Tonga is the only PIC that has not legislated a ban on non-biodegradable single use shopping bags. In Nauru, Palau and Cook Islands the only measure in place is a ban on non-biodegradable single use shopping bags. Niue and Papua New Guinea banned both biodegradable and non-biodegradable shopping bags. All other PICs banned wider categories of SUPs.

As outlined in Table 1, the selection of SUP products subject to bans in PICs differs between countries. As is the case globally, shopping bags are the ubiquitous example. The next most commonly banned product is polystyrene. The general trend among PICs is towards expanding the bans to include a broader range of products.

Four countries (Vanuatu, Solomon Islands, Tuvalu and Cook Islands - although Cook Islands are yet to enact the legislation that will expand their list) have a significantly broader range of banned products specifically determined in response to observations of their SUP waste streams and/or marine litter audits. Notable country-specific banned products in these PICs include flags, plastic table cloths, cling film and ice lolly bags (Tuvalu), flowers, egg cartons, food netting (Vanuatu) and single-serve butter packets and products containing microbeads (proposed for Cook Islands).

Levies are applied in Fiji, Tonga (shopping bags) and Vanuatu (non-biodegradable nappies).

The following pages outline the existing legislated measures. Where available, hyperlinks are provided to the relevant legislation.

TABLE 1 PIC SUP Bans

X = banned X = ban in Bill not yet enacted

	Non- bio-degradable shopping bags	Bio-degradable shopping bags	Poly-styrene plates, cups, takeout	SUP straws	SUP cutlery	SUP flowers	SUP cling film	SUP egg containers	SUP table sheet	SUP flags	Ice block bags	PET bottles > 1.5 litre	SUP single serve butter, spreads	SUP food netting	SUP drink stirrers	Products with plastic micro-beads	PET food containers no3, 4, 5, 7 or unnumbered	General exception for recycled or bio-degradable
Cook Islands	X	X	X	X	X								X		X	X	X	
FSM National	X		X														X	X
FSM Chuuk	X		X															
FSM Kosrae	X	X																
FSM Pohnpei	X																	
FSM Yap	X	X																
Fiji	X		X															
Kiribati	X	X									X							
Marshall Islands	X	X	X															
Nauru	X																	
Niue	X	X																
Palau	X																	
PNG	X	X																
Samoa	X	X	X	X														
Solomon Islands	X	X	X	X	X							X						
Tonga	levy																	
Tuvalu	X	X	X	X	X		X		X	X	X	X						
Vanuatu	X	X	X	X	X	X		X						X	X			

4.2 PIC Legislation on SUPs

4.2.1 Cook Islands – Plastic Bag Ban

Legislation

Prohibition on Importation of Plastic Shopping Bags Regulations 2012 under the *Environment Act 2003.*

Pending legislation

Solid and Hazardous Waste Bill (due for consideration by Parliament in 2024).

SUP Policy

Solid Waste Management Policy 2016-2026

Single-Use Plastic Ban Policy 2019

Summary of Measures in Place

Cook Islands law currently bans the importation of non-biodegradable plastic bags and requires licenses to import biodegradable bags.

Pending Measures

Upon passage of the *Solid and Hazardous Waste Bill* the following will be banned in the Cook Islands:

- Lightweight plastic bags including shopping bags
- Plastic straws and cocktail stirrers
- Plastic cutlery
- Plastic containers with no PET number or with numbers 3, 4, 5, and 7 including plastic plates and sealable food containers
- Plastic and polystyrene cups, including plastic-lined coffee cups
- Polystyrene containers and meat trays
- Single-portion breakfast spreads
- Products containing microbeads

An Advanced Deposit Recovery Fee will also be included in the pending *Solid and Hazardous Waste Bill*. It will include various items including PET bottles.

4.2.2 Federated States of Micronesia – SUP Bans, Container Deposits

Legislation

National – *Act for the Prohibition on the Importation, Sale or Distribution of One Time Use Disposable Styrofoam and Plastic Food Service Items and Plastic Shopping Bags (Public Law 21-76),* effective 7 February 2020 amends *FSM Code Title 25*

Chuuk – *Clean Environment Act of 2018*

Kosrae – *Kosrae State Code Title 11, Ch19* (Plastic ban) *Kosrae State Code Title 9, Ch22* (Container deposit scheme), *Recycling Program Regulations 2006 under Title 9*

Pohnpei – *Pohnpei State Code Title 27, Chapter 3* (Container deposit scheme), *and Chapter 4* – (Control of Plastics Waste)

Yap - *Yap State Law 8-45* (Control of Plastics Waste), *Yap State Recycling Act (YSL7-18), Yap State Recycling Program Regulations* (Container deposit scheme),

Summary of Measures in Place

FSM National law bans the import, sale or distribution of non-biodegradable single use plastic bags and disposable styrofoam or plastic food service items. The four States have similar legislation, although neither Kosrae nor Yap allow biodegradable bags. Kosrae, Pohnpei and Yap have container deposit schemes that include PET bottles.

4.2.3 Fiji – Plastic Bag and Polystyrene Bans

Legislation

Environmental Management Act 2005, s45A and s45B

Environment and Climate Adaptation Levy (Plastic Bags) Regulations 2017

Environment Management (Exempt Plastic Bags) Regulations 2021

Summary of Measures in Place

S45A of *Environmental Management Act 2005* creates the offense of manufacturing, selling or supplying plastic bag with penalties of FJ$500,000 fine and 7 years prison (2021). S45B of *Environmental Management Act 2005 is the* same as above for polystyrene. (2021). The definition of 'plastic' has the effect of excluding biodegradable bags. The 2021 Regulations exempt medical, police and agricultural bags.

Levy Regulations introduced a 10c FJD levy on both high- and low-density plastic bags, effective from August 2017. In 2018 and 2020, the levy was amended increasing it to 20c and 50c FJD respectively. The levy only covers plastic bags distributed by businesses with a point-of-sale system, meaning that many smaller shops are not affected by the levy.

Pending Measures

Fiji is planning to introduce a container deposit scheme that will include PET bottles (PM speech March 2024)

4.2.4 Kiribati - SUP Bans, Container Deposits

Legislation

Customs Act 2019 (Schedule 3)

Special Fund (Waste Materials Recovery) Act 2004

Special Fund (Waste Materials Recovery) Regulations 2004

Summary of Measures in Place

Customs Act prohibits imports of ice-block bags, non-biodegradable nappies and single-use plastic shopping bags. The ban on single-use plastic bags includes carrier bags that are dispensed from a roll, but does not extend to garbage bags.

The *Special Fund (Waste Materials Recovery) Act* and Regulations establish a container deposit scheme for aluminium, PET bottles and ULABs. 5 cents deposit, 4 cents refund on PET bottles.

4.2.5 Marshall Islands – SUP Bans, Container Deposits

Legislation

Styrofoam and Plastic Products Prohibition Act 2016 (amended in 2018 to incorporate container deposits)

Summary of Measures in Place

Prohibits the import, manufacture, sale or distribution of styrofoam cups and plates, disposable plastic cups and plates, and plastic shopping bags.

Container deposit scheme for aluminium cans, PET bottles, glass bottles. Deposit 6 cents, refund 5 cents.

4.2.6 Nauru - Plastic Bag Ban

Legislation

Environmental Management and Climate Change (Ban on Single Use Plastic Shopping Bags) Regulations 2021, under the *Environmental Management and Climate Change Act 2020*

Summary of Measures in Place

Prohibits import, manufacture, sale or distribution of single use plastic shopping bags. Exemptions for (a) bio-degradable plastic bags; (b) degradable plastic bags; and (c) reusable bags.

4.2.7 Niue - Plastic Bag Ban

Legislation

Customs Import Prohibition (Plastic Shopping Bags) Order 2020.

Summary of Measures in Place

Bans the import of single use plastic bags.

4.2.8 Palau - Plastic Bag Ban, Container Deposits

Legislation

Plastic Bag Use Reduction Act, RPPL No. 10-14 2017

Palau National Code Title 11, Chapter 16: Recycling Program

Responsible Tourism Education Act 2018

Summary of Measures in Place

The *Plastic Bag Use Reduction Act* bans retailers providing non-biodegradable or non-compostable plastic bags to customers. Limits the mark-up on the sale of reusable bags. Bans the import of plastic bags for retail distribution. Mandates an educational program on reducing plastics.

PNC T11, Chap 16 establishes a container deposit scheme including PET bottles.

The *Responsible Tourism Education Act 2018* requires tour operators to supply tourists with reusable alternatives to disposable plastic or polystyrene cups, bottles, straws and food containers.

4.2.9 Papua New Guinea - Plastic Bag Ban

Legislation

Environment (Control of Biodegradable Plastic Shopping Bags) Regulation 2010

Customs (Prohibited Imports) (Plastic Shopping Bags) Amendment Regulation 2011

Summary of Measures in Place

Regulation requires approvals for the manufacture and importation of biodegradable plastic bags through the issuance of an environment permit. Bags are required to be labelled and must meet the standards of the Department of Environment and Conservation. The importation, manufacture, sale and distribution of non-biodegradable plastic shopping bags is prohibited. Maximum penalty of Kina 50,000 or 2 years imprisonment.

4.2.10 Samoa – Plastic Bag Bans

Legislation

Waste (Plastic Bag) Management Regulations 2018

Waste (Plastic Bag) Management Amendment Regulations 2020

Summary of Measures in Place

The importation, manufacture, sale and distribution of plastic shopping bags and single use styrofoam containers is prohibited. Maximum penalty of 100 penalty units.

4.2.11 Solomon Islands – SUP Bans

Legislation

Environment (Single Use Plastic Ban) Regulation 2023

Summary of Measures in Place

Bans the importation, manufacture, sale and distribution of plastic shopping bags, cups, plates, and cutlery, polystyrene foam takeaway plates, containers, and cups, and polyethylene terephthalate water bottles of less than 1.5 litres. Maximum penalty of 50,000 penalty units (individual) or 100,000 penalty units (body corporate).

This Regulation can be enforced by: Environment Officers pursuant to the *Environment Act 1998* (section 5); (2) Customs Officers pursuant to the *Customs and Excise Act (Cap. 121)* (section 2); (3) Police Officers of the Royal Solomon Islands Police Force pursuant to the *Police Act 2023* (section 3); (4) Enforcement Officers under the *Honiara City Act 1999* (section 37); (5) Authorised Officers of the Solomon Islands Maritime Authority, pursuant to the *Solomon Islands Maritime Authority Act 2018* (section 47); (6) Servants and agents in the Solomon Islands Ports Authority pursuant to the *Ports Act (Cap. 161)* (section 16).

It is noted that Western Province banned SUP shopping bags in 2018.

4.2.12 Tonga – Plastic Bag Levy

Legislation

Waste Management (Plastic Levy) Regulations 2013 under the *Waste Management Act 2005*

Summary of Measures in Place

Importers pay a 10% levy on the value of plastic bags imported. Exceptions for bags containing fresh meat imports or used for local produce exports. Fee paid to Waste Authority.

Pending Measures

Tongan Government has a 'Single Use Plastics Roadmap' under development. Once this is finalised they anticipate enacting legislation to ban a selection of SUPs.

4.2.13 Tuvalu – Bans, Deposit Levies

Legislation

Waste Management (Prohibition on Importation of Single Use Plastic) Regulation 2019

Waste Management (Prohibition on the Importation of Single Use Plastic) (Amendment) Regulation 2020

Waste Management (Levy Deposit) Regulation 2019

Summary of Measures in Place

Prohibits the importation, manufacture, sale or distribution of certain single use plastic bags, PET water and beverage bottles less than 1.5L, plastic straws, plastic ice blocks or pouches, flags, table sheets, polystyrene plates and containers, plastic cutlery and plastic cling film.

Maximum penalties of $5,000 or $10,000 and 2 or 3 months imprisonment.

2020 Amendment extends the grace period and introduces on-the-spot fine options of between $50 and $400.

The final regulation establishes an advanced fee recovery facility for a broad range of items including PET bottles.

4.2.14 Vanuatu – Bans and Levy

Legislation

Waste Management Regulations Order No.15 of 2018

Waste Management Regulations (Amendment) Order No. 128 of 2019 under the *Waste Management Act no. 24 of 2014*.

Also a 5% import excise on disposable nappies (2023).

Summary of Measures in Place

Prohibits the manufacture, distribution, sale and use of polystyrene food containers, single-use plastic bags, plastic straws, plastic cutlery, egg containers, food netting, flowers, cups. The order also imposed fines for littering and waste dumping.

Maximum penalties of Vt500,000 or Vt1,000,000 (individual or body corporate).


SINGLE-USE PLASTIC ITEMS
BANNED
From 1st September 2023
PLASTIC STRAWS
PET BOTTLED WATER (<1.5L)
PLASTIC CUPS
PLASTIC CUTLERIES
POLYSTYROFOAM TAKEAWAYS,CUPS & PLATES
PLASTIC BAGS
PACIFIC OCEAN LITTER PROJECT
Australian AID
SPREP

5. Assessing PICs SUP Measures: What Is, and Is Not, Effective and Why

5.1 Effectiveness – what do we mean?

There are different ways to assess the 'effectiveness' of a government measure (law or policy) addressing SUPs. For example, we could judge whether an intervention is 'effective' or not depending upon the rate of compliance with its provisions. Alternatively, we could judge whether SUP import, use or leakage into the environment is being 'effectively' reduced by the measure using quantified evidence.

The significance of the distinction is apparent when considering the scope of the measures, i.e., the products included. For example, a country might ban non-biodegradable plastic shopping bags and achieve a very high rate of compliance, but if plastic shopping bags are only a minor percentage of the overall proportion of the SUPs in use, the ban will be marginally effective in achieving an overall SUP reduction. By contrast, a SUP ban that includes a wide range of products but has a lower rate of compliance may reduce overall SUP usage by a larger volume than the first example.

It is noted that bans and other instruments nominate specific plastics product categories for control, but that waste management initiatives identify plastics generally, or limited plastics classes. This different categorisation frustrates attempts to track the effects of SUP controls.

For the purposes of this project the authors refer to 'effectiveness' in both respects: a) How effective are the measures in achieving compliance with the rules that are currently enacted, and also, b) How effective are the measures in achieving an overall reduction in SUP usage and pollution. The former is discussed in sections 5.2 and 5.3 whereas the broader question is considered in sections 6 and 7.

5.2 Self-Assessments of Effectiveness (compliance with current law)

A central question for this project relates to the effectiveness of SUP bans. All of the PIC respondents were asked about the effectiveness of the SUP ban in their country, as well as any available data that could be used to judge effectiveness.

No reliable quantitative data was available in any jurisdiction to make 'scientifically sound' judgements regarding effectiveness. The jurisdiction with the most data of this kind was Vanuatu from coastal clean-up litter audits. The results of these audits assisted in guiding the scope of Vanuatu's SUP ban in both its first and second phases (i.e., what products would be included) through a science-based approach. Following the introduction of the Vanuatu ban the coastal clean-up litter audits, UK CEFAS Clip Audits and audits conducted in producing the draft Vanuatu National Plastic Strategy suggested the bans were effective as the volume of the banned materials collected in the clean-ups was substantially reduced. In no other country was this data available, nor any other quantitative data that might reliably indicate the effectiveness of the SUP bans.

Apart from the Vanuatu coastal clean-up and other litter audits, the only evidence available

regarding the overall effectiveness of the SUP bans were self-assessing observations by the PIC respondents. The project team acknowledges that self-assessment answers to a central question of the Terms of Reference are not ideal, but the views reported below provide legitimate evidence of SUP ban effectiveness to be considered alongside other available evidence.

Vanuatu - The ban is effective, compliance is high (despite enforcement being limited to the customs border checks). Beach clean-up data indicates a reduction in marine litter of the banned SUPs. Department of Environmental Protection and Conservation officers report no – or very few - illegal SUPs in circulation.

Tuvalu - The ban is effective. Ensuring compliance was challenging at first but is now high. Good enforcement occurs through thorough customs border checks as well as internal monitoring by the Waste Management Department which reports very few illegal SUPs in circulation.

Marshall Islands – The ban on plastic bags and polystyrene is effective and compliance is high. Other issues relating to suboptimal waste management, especially household collection and public waste disposal, result in high levels of plastic pollution. Environmental Protection Authority (EPA) reports very few illegal SUPs in circulation. Enforcement is undertaken by both EPA and Customs.

Solomon Islands - The SUP ban was introduced recently with the support of the Pacific Ocean Litter Project. The recency of the commencement of the bans means that it is not possible to judge effectiveness. The Technical Working Group is satisfied with the introductory phase and reports confidence that they can achieve high rates of compliance. The Technical Working Group is chaired by MEDCCM and includes Honiara City Council and Customs. All three of those agencies undertake enforcement. They have standard operating procedures for enforcement actions. The Chamber of Commerce is a member of the Technical Working Group.

Palau – The ban is effective, but is limited. Only plastic bags are banned and there is a biodegradability exemption. The biodegradability exemption is considered problematic. The container deposit scheme is effective in recovering PET bottles for recycling. The Koror State Government waste officer reported no non-biodegradable bags in circulation, but there has not been an overall reduction in SUP bags. Palau is very active in clean ups.

Nauru – The ban is effective, but is limited. Only SUP bags are banned and there is a biodegradability exemption. The biodegradability exemption is considered problematic. The Nauru Environment Director reported no non-biodegradable bags in circulation, but there has not been a reduction in SUP bags. The Nauru Government funds communities to do daily clean ups.

FSM – The bans are partially or largely effective. There has been a reduction in imports and usage of banned SUPs, and several seizures of banned products. The Customs Office and the State EPAs undertake the enforcement. There are some illegal imports continuing, especially via the postal system. The biodegradability exemption is considered problematic.

Fiji - The bans are partially effective but there is continuing widespread noncompliance. Large retailers are compliant, but many small retailers are not. There is reluctance by the Environment Department to engage in strict compliance action against individuals and small retailers. Customs undertake enforcement activities on imports. The respondents were uncertain whether local manufacturers were fully compliant. There is continued public and retailer resistance to the plastic bag ban. The polystyrene ban was accepted more readily.

Kiribati - The bans are partially effective. There were higher rates of compliance at the beginning but non-compliance is recently becoming more common. There is an issue with the design of the law. It is contained in the Customs schedules and can only be enforced by Customs officers at the border, i.e., the Environment Department compliance officers cannot legally enforce the bans on sale or distribution of SUPs that have been imported.

Niue - The ban is partially effective. The Department noted some recent non-compliance There are some perverse outcomes of the ban in Niue, such as people using large plastic garbage bags to carry groceries instead of reusable ones. There is reluctance on the part of Departmental officers to undertake strict enforcement of the law for cultural and social reasons.

PNG – The ban is not very effective. There are illegal imports which are hard to prevent. There are several ports of entry and a long land border with Indonesia. Preventing illegal imports is a big challenge. In the urban areas large retailers are compliant, many small retailers are not. The biodegradability exemption makes compliance difficult. The Conservation and Environment Protection Authority (CEPA) is responsible for enforcement, as well as Customs. CEPA reports that enforcing compliance internally was initially difficult but is getting easier. There is a possibility of sharing enforcement responsibility with other agencies, but this has not been implemented.

Cook Islands – The ban is not effective. There is widespread noncompliance at the border and among retailers. There is no active enforcement of the ban. Cook Islands National Environment Service is hopeful the pending legislation will rectify the situation, once enacted.

Samoa - The ban is not effective. Non-compliance is widespread and there is no compliance action against individuals or retailers. There is no active enforcement of the ban. MNRE Waste Officers are planning to re-activate their SUP regulatory program in coming months.

Tonga – There is no ban in Tonga. The levy is paid by importers but the revenue raised does not go to improving SUP management. Tonga is currently developing a 'Single Use Plastic Roadmap' to guide future measures and policies.

5.3 Factors Explaining Differences in Effectiveness of SUP Bans

5.3.1 Scale and capacity

Of the reasons noted why PICs report different rates of compliance with their SUP bans, scale is most apparent. A country that has a small population, only one urban centre, one or two ports of entry, and is either a single small island or a few small islands, faces a different challenge in enforcing any law than a country with a large population, several ports of entry, a land border, numerous urban centres and islands. i.e., it is easier to enforce a law in Niue or Tuvalu than it is Papua New Guinea. This factor does not require further explanation other than to note that it is not by itself determinative, as evidenced by section 5.2.

Deficits in capacity are ubiquitous in PIC governance. The scope of responsibilities of governing a small island developing state are similar to those of a large developed country but the human, financial and technical resources available to regulators are much more limited. This factor impacts all areas of governance, including environmental enforcement. There is rarely a sufficiency of personnel: in a developed country there may be a team of people, or at least a full-time staff member, whose job is to focus on enforcing a particular area of law. By comparison, staff in PIC environment departments are more likely to be required to 'multitask'. PIC environmental governance representatives frequently report capacity deficits in forums, reports, plans and strategies. Similar to scale, this factor is obvious, but is not solely determinative, as evidenced by section 5.2.

Finally, both scale and capacity factors indicate that a reform that increases the efficiency with which a law can be enforced will benefit PIC agencies. In the context of enforcing SUP bans, more granular customs codes (see section 6.4 below) and the availability of summary enforcement notices (see section 5.3.3 below) are reforms that would increase efficiency, and thereby assist in alleviating some capacity deficits.

5.3.2 The law – who can enforce?

Several PIC respondents (Cook Islands, Kiribati, Nauru) reported challenges due to the specific legislative instrument used to insert the SUP ban into law, which impacted which officers of government were able to enforce the SUP ban.

To explain, the PIC SUP bans are included in one of the following: customs legislation; provisions inserted into an Environment Act; Regulations under an Environment Act; or Regulations under a Waste Management Act. In principle, and often in practice, there is nothing preventing a law empowering any identified officer of government with the authority to enforce a given prohibition, such as an SUP ban. For example, Regulation 5 of Solomon Islands *Environment (Single Use Plastic Ban) Regulations 2023* provides:

> **5 Enforcement**
>
> Provisions of these Regulations shall be enforced by:
>
> (1) Environment Officers pursuant to the Environment Act 1998 (section 5);
>
> (2) Customs Officers pursuant to the Customs and Excise Act (Cap. 121) (section 2);
>
> (3) Police Officers of the Royal Solomon Islands Police Force pursuant to the Police Act 2023 (section 3);
>
> (4) Enforcement Officers under the Honiara City Act 1999 (section 37);
>
> (5) Authorised Officers of the Solomon Islands Maritime Authority, pursuant to the Solomon Islands Maritime Authority Act 2018 (section 47); and
>
> (6) Servants and agents in the Solomon Islands Ports Authority pursuant to the Ports Act (Cap. 161) (section 16).

This is less common with customs legislation, which can typically be enforced only by customs officers. Thus, for Niue and Kiribati, where the SUP ban is under customs laws, enforcement other than at the point of importation is inhibited.

Most PICs have enacted their SUP bans in environmental or waste legislation (either in an Act or as Regulations). Customs officers are accustomed to enforcing their own legislation so having to account for import bans included in non-customs laws can potentially be a complicating factor. This was reported in Nauru but for Vanuatu and Tuvalu it is evidently not a problem. Solomon Islands has the best legislated multi-agency enforcement provisions for a SUP ban.

One suggestion to 'cover all bases' is to include import bans in the customs legislation, and prohibit manufacture, sale and distribution in environmental or waste legislation.

This factor points to the crucial importance of intragovernmental cooperation for the successful enforcement of SUP bans generally, and to the particular significance of a close and cooperative working relationship between the primary regulators and the customs officers on the issue of SUP import regulation. This was reported as a particular challenge in Cook Islands, Samoa where the SUP ban has limited effectiveness.

5.3.3 The law – are summary notices (on-the-spot fines) available?

As noted in the discussion of the 'capacity' factor above, a reform that increases the efficiency of enforcing a SUP ban will likely improve rates of enforcement and therefore compliance. The availability of summary enforcement notices, often referred to as 'on-the-spot fines' is an example of this kind of reform. This issue was emphasised by Cook Islands respondents and the pending Cook Islands legislation will introduce this enforcement option. It is available in Tuvalu where (especially during the initial stages of the SUP ban) numerous summary enforcement notices were issued. By contrast, in jurisdictions where the only option to enforce the law is court proceedings, this is very uncommon in relation to SUP bans. This issue requires further explanation.

On-the-spot fines for environmental offences offer several advantages:

- Firstly, implementing on-the-spot fines is typically much more cost-effective for government than pursuing cases through the courts. It saves resources by reducing the need for lengthy investigations, legal proceedings, and administrative overheads. A PIC Director of Public Prosecutions (DPP) will likely have a backlog of serious offences to prosecute and the Environment Department referring numerous cases relating to the distribution or sale of SUPs will in those circumstances not be welcomed.
- Secondly, offenders against SUP bans receiving on-the-spot fines, and those who witness or hear about the enforcement activity, will be confronted with the fact that there are immediate consequences from their actions. This can act as a deterrent against further violations and the immediate feedback helps to reinforce the importance of the SUP ban law. The threat of an immediate financial penalty encourages individuals and businesses to comply with the SUP regulations.
- Thirdly, while not offering as much discretion as is typically available to a judge or a magistrate deciding a case, on-the-spot fines can be tailored to the severity of the offense and the financial means of the offender, allowing compliance officers to impose penalties that are proportionate to the violation. For example, different levels of penalty can apply to a large businesses, small businesses and individuals. Charging repeat or serious offenders to be dealt with via prosecution in court remains an option.
- Finally, the visible and public enforcement of SUP ban regulations through on-the-spot fines could help raise public awareness about plastic pollution. It sends a clear message that the SUP ban is taken seriously and that all citizens and businesses share a responsibility to comply.

5.3.4 The law – exemptions for biodegradable SUPs

Of the thirteen PICs included in the project that have SUP bans, seven exempt biodegradable SUP bags and one (FSM) exempts any biodegradable SUP product. Of these seven, six reported that the exemption for biodegradability was problematic in terms of achieving high rates of compliance with the law.

The primary reason cited for the challenge of the exemptions for biodegradable products was the inability to independently test the claims of the importers and manufacturers. "Anything can be printed on the bag" was a comment heard on numerous occasions during the consultations, "but we can't know for sure".

A second reason this factor is significant is that many PIC consumers will not understand the difference between a biodegradable bag and a non-biodegradable bag. Instead of there being one simple rule: "plastic shopping bags are banned", there is a confusing distinction between different types of bags which appear very similar. If government regulators are challenged with differentiating between the bags, it is not reasonable to expect consumers to do so. There are substantial compliance and enforcement advantages – for all involved - in a law that is simple.

Adding weight to these observations is the fact that biodegradable SUP bags are not harmless. They pose nearly as many health and environmental risks as non-biodegradable ones. Biodegradable plastics also break down into microplastics which enter the environment, contaminate soil and water, and harm marine life when ingested. Some biodegradable plastics contain chemicals that can be toxic to humans and other organisms when they break down. These toxins leach into the environment, affecting soil and water quality, and potentially entering food chains.

Finally, many biodegradable plastics require specific conditions, such as high temperatures and adequate moisture, to biodegrade properly. In environments like landfills or oceans these conditions may not be met and biodegradable plastics may degrade slowly or not at all, contributing to environmental pollution.

This lack of environmental merit has resulted in Australian, New Zealand and EU regulators rejecting 'biodegradable' SUP bags as being preferable to ordinary SUP bags. For example, in Australia the NSW Environment Protection Authority has banned SUP items made from biodegradable plastics, compostable plastics, or bioplastics.[19]

5.3.5 Availability of alternatives

Both the consultations and the literature confirmed that the availability of alternatives to SUPs, and widespread knowledge held by retailers and consumers regarding available alternatives, was a key factor in achieving high rates of compliance with SUP bans.[20] Ideally, alternatives are easily obtainable and are competitive with SUPs in terms of both cost and convenience.

An absence of cost effective and easily obtainable alternatives to SUPs will inhibit the willingness of a government to introduce or expand the scope of a SUP ban, and will strongly incentivise evasion of the legal requirement.

5.3.6 Compliance and enforcement 'culture' and 'politics'

A less definitive factor influencing the effectiveness of SUP bans in PICs is the culture or politics at play in a given PIC. It is difficult to be definitive about these factors based only a desktop study and limited interviews but it is clear that culture and politics do play a role in whether a SUP ban will be effective in any given jurisdiction.

Among the most challenging aspects of enforcing a SUP ban is the fact that the behaviour prohibited was, only a short time ago, a habitual and normal aspect of most people's lives. The

19 https://www.epa.nsw.gov.au/your-environment/plastics/about-the-bans/frequently-asked-questions#:~:text=lightweight%20plastic%20bags%20with%20handles,from%20Australian%20certified%20compostable%20plastic.

20 C. Andrea Clayton, Tony R. Walker, Joana Carlos Bezerra, Issahaku Adam, Policy responses to reduce single-use plastic marine pollution in the Caribbean, *Marine Pollution Bulletin*, Volume 162, 2021.

introduction of laws prohibiting a shop providing, or a consumer accepting, a plastic bag to carry groceries may have been unsurprising to environmentalists who had lobbied in support of them, but to many consumers these laws came as an inconvenient and unwelcome surprise.

The difficulties can be illustrated by reference to littering laws. SUP bans and littering are closely related topics so the PIC respondents were asked about enforcement of littering laws. There was much variance in the responses. In some PICs (Fiji, Kiribati, Tuvalu, Tonga) issuing fines for littering to individuals is reportedly common, whereas in some others respondents suggested that while the littering law could be enforced against a business, the concept of fining an individual for a minor act of littering was not something that they contemplated doing. Reasons provided were that there was a culture of littering, i.e., people did not understand that it was a bad thing to do, or few public rubbish bins were available, and so littering was simply expected. Littering laws are not new; the differences between jurisdictions here can be explained as 'cultural'.

A related matter, in the opinion of the authors, is the attitudes and public statements made by political figures. If the SUP ban is regarded as having been developed in isolation by environmental bureaucrats, or as a result of NGO lobbying, or as an outcome of foreign pressure, rather than explicitly endorsed by elected leaders, enforcing it will be more challenging.

These factors are worth mentioning, but are not amendable to simple solutions.

5.3.7 Complementary measures – awareness and education activities

All PICs reported that the SUP bans were preceded and accompanied by programs to make people and businesses aware of the new rules, and to educate them about the reasons the SUP bans were being introduced. Activities mentioned by respondents included television advertisements, radio advertisements, radio programs, Facebook advertisements and posts, public billboards, school classes and activities, brochures, community meetings, and public question and answer booths staffed by departmental officers.

Different communication tools were favoured in different jurisdictions. Most respondents conveyed confidence that they had a sound understanding of which methods would be most effective for specific audiences in their communities. Social media, for example, was favoured by several respondents as a method of communicating with young people. Some respondents regarded radio as the optimally effective medium, for others it was TV advertisements. However, there was little evidence of the sort of in-depth behavioural analysis that is indicated by the formal literature on environmental communications and community engagement, nor of systematic analysis of the effectiveness of these initiatives. We note however that the documented evidence indicates that community engagement and social change initiatives are variably effective, and taking a scientific approach is complex and can be costly.

We expect that effective complementary awareness and education measures will help improve the rates of compliance with the SUP bans and other controls (for example promoting recycling and proper waste disposal). As outlined in sections 6.5 And 7.4 below, we recommend that SUP awareness and education programs should be more systematically monitored and evaluated.

6. Regulatory and policy gaps and additional measures for SUPs in PICs

6.1 Expand SUP bans

Both the literature review and the stakeholder consultations indicate that banning the import and manufacture of SUP products is the strategy most likely to be effective in reducing the harms they cause, provided the SUPs which are banned are either non-essential items or there are non-SUP alternative products available to replace them.

Vanuatu, Tuvalu and Solomon Islands have banned a range of SUP products and Cook Islands has pending legislation that will do so. Vanuatu drew upon data from beach litter clean-ups to inform their target list of banned SUPs. Solomon Islands and Tuvalu used waste audit data, and Tuvalu undertook an extensive program of community consultations prior to finally determining which SUPs would be subject to their bans.

The other ten PICs should look to these regional leaders with a view to expanding their own range of banned SUP products in a planned and incremental manner, ideally supported by plastic waste and litter surveys before and after policy enactment. Stakeholder consultations indicated that public and retailer resistance to SUP bans decreases over time even as the range of banned products is expanded.

Both the literature review and the stakeholder consultations indicate that an important aspect of introducing or expanding SUP bans is providing a sufficient phase-in period during which businesses are encouraged to exhaust existing stocks and source alternatives, and the public is made aware of the incoming SUP bans and what alternative products or behaviours will be available to them, to enable the transition to be as smooth as possible. Vanuatu attempted this with mixed results; lessons learnt in Vanuatu resulted in a smoother transition in the Solomon Islands in introducing their SUP bans. Another key element of introducing or expanding SUP bans is communicating effectively with the private sector and citizens, providing the information each needs to transition away from each SUP as done by the Solomons MECDM with the Chamber of Commerce in that country.

A guiding principle for PIC governments seeking to move towards a plastic-free future could be, 'if a SUP product has a sustainable and affordable alternative available, let's ban it'. As the world becomes more aware of the harms caused by plastic pollution, the range of sustainable and affordable alternatives to SUPs will expand. Thus, a program of SUP bans should be conceived as an ongoing process with expanding scope.

6.2 Improve enforcement of SUP bans

The discussion in section 5.3 indicated the following will improve enforcement of SUP bans:

- Ensure that legal provisions establishing SUP bans are enforceable by all appropriate compliance officers. This may entail (typically minor) amendments to empower a wider range of officers; and duplicating bans currently in environmental law in customs schedules, or the reverse.
- PICs that do not currently allow their SUP bans on sale and distribution to be enforced via a summary notice (on-the-spot fine) should consider amending their legislation to facilitate that method of enforcement.
- If new revenue is generated by additional SUP taxation (see section 6.9 below) some of this money should be directed towards scaling-up SUP ban enforcement.
- Removing exemptions for biodegradable SUP products in line with international norms.

6.3 National strategic planning for SUP reduction

The consultations and literature reviews indicated that only Vanuatu and Cook Islands have developed national policies or strategies to reduce the importation, use and leakage of SUPs. Tonga is in the process of developing a "SUP Roadmap" with support provided by the Pacific Ocean Litter Project. Some other PICs consider plastic waste within their respective national waste management strategies and plans. The Vanuatu (draft) National Plastics Strategy is the most comprehensive encountered by the research team, and includes a costed implementation and funding plan.

Those PICs that have yet to develop a national strategy, as a stand-alone document or as part of broader waste management planning, should do so. The literature suggests that these strategies should involve action at each stage of the SUP materials flow, from the initial manufacture or import of the plastic product into the country, through each stage of its distribution, use and disposal, and its pathway to export, landfill or the environment. The optimal interventions will vary at each stage, and may include regulation, economic instruments, social marketing and education, and the physical management of waste.

The planning process should not be undertaken in a 'silo' of a single department or agency; there should be high levels of intragovernmental cooperation and communication involving all relevant arms of government (waste, environment, customs, education, health, fisheries, tourism, finance, local government). It would be advantageous to involve the private sector and civil society.

National SUP strategies, in addition to specific interventions, should also take account of social considerations such as how planned actions or programs will or may impact people differently depending on their gender, socio-economic status, disability or status as urban, rural or outer island residents.

6.4 Addressing the evaluation gap

Both the literature review and the stakeholder consultations indicate that measures to reduce the harms caused by SUPs would be more effective and efficient if better longitudinal data sets were available on precisely what SUPs – volumes and types – are being manufactured, imported, sold, disposed and leaked in each country. These data sets are also necessary to accurately assess the effectiveness of SUP measures.[21]

Efficient program monitoring and evaluation (M&E) could help ensure accountability and to continually improve programs. While comprehensive M&E may not be feasible for all PICs, a staged approach using threshold indicators of implementation to determine whether more in-depth diagnosis is needed, could be efficient in some countries.

Where threshold indicators suggest under-implementation or under-performance, in-depth diagnosis could follow. This might, for example, involve methods such as the PRIF *Waste Audit Methodology: A Common Approach22,* modified to focus precisely on the performance of SUP initiatives. The threshold evaluation program might be designed along the following lines.

To test whether SUP initiatives are affecting the inflow of plastics, detailed sampling of import containers might create a "standard SUP/SUP alternatives mix" for typical containerised shipments in the relevant product categories. The standard estimate would require detailed SUP materials measurement of a sample of containers, with the consent of importers or exporters. Using a standardised SUP estimate would allow the volume of plastics to be inferred by multiplying the number of containers imported by the standard measure. The production volume of SUPs manufactured "in-country" would be added to this import volume, giving an overall estimate of SUP entering the PIC economy. Provided that the standard SUP content per container is well-validated, changes to the estimated total volume could provide a reasonable indicator of the probable effect of the SUP controls.

Additional quantitative data is also obtained via iterative targeted audits of both managed disposal facilities for SUP content, as well as litter at beaches and roadsides to monitor SUP leakage to the environment. Ideally, these generate data on origin, resin type, usage and brand. Advances in machine vision and intelligence may over time reduce monitoring costs for plastics waste as the development of automated waste informatics progresses.

Small-sample surveys at specific points along the materials flow could indicate some effects of SUP policies. Actors include importers and customs officers, wholesalers and retailers, consumers of SUPs, tourism operators, local governments, waste management officers, waste "clean-up" stakeholders, waste processors and re-processors. Basic surveys of the attitudes and actions of different actors could provide inexpensive threshold indicators of program impacts.[23] Such surveys could involve small sample interviews or observations.

21 March, A., Karasik, R., Roberts, K., & Evans, T. (2023). Limited knowledge of national plastics policy effectiveness may hinder global progress. *Cambridge Prisms: Plastics*, 1(2021), 1–6.

22 Wander, A. (20

20). *Waste Audit Methodology: A Common Approach.* Pacific Region Infrastructure Facility.

23 The many variables that influence that behaviour are examined in Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 42. https://doi.org/10.1186/1748-5908-6-42.

We note that obtaining statistically valid answers to simple questions is better and cheaper than for complex questions. The sample size is smaller, information gathering is easier, and analysis simpler. For example, to ask a retailer "do you stock disposable plastic plates and cutlery?" invites a simple answer. Relatively small samples responding to simple enquiries or sampling could provide useful threshold indicators.

These suggestions are for low-cost indicators that might quickly generate broad indications of SUP flows to measure the effects of SUP initiatives. These could then trigger in-depth investigations where the need is indicated, and are considered better than no monitoring and evaluation.

Table 2 below illustrates the concept of benchmark monitoring of SUP materials flow.

TABLE 2 Benchmark monitoring if SUP materials flow.

Materials flow benchmarks	Possible low-cost metrics
Is the volume of SUP entering the jurisdiction falling in response to national strategies?	▪ Audit of SUP (and SUP alternatives) purchase volumes of a sample of wholesalers/retailers. ▪ Assess the SUP composition of a sample of import containers in relevant categories (extrapolate to estimate totals by SUP type). ▪ Survey a sample of importers to estimate the 12-month change in SUP import orders.
Has the volume of SUP distributed through retail channels reduced?	▪ Survey the SUP volume sold, by key product category (e.g. plastic bags and film, SUP-intensive products). ▪ Observation of retailers' response to "mystery shopper" requests for SUP products.
Are consumers managing SUP waste more responsibly?	▪ Simple consumer behaviour surveys.
Have there been changes to SUP waste sent to landfill or to processing?	▪ Counts of SUP intakes to landfill or re-processing factories
Is the amount of SUP accumulating in the environment reducing?	▪ Measurement of plastics leakage (beaches, roadsides, informal dumpsites)

6.5 Enhanced auditing of SUP imports including through new HS classifications

Given the prevalence of importation as the pathway via which SUPs flow into the region, the optimal way to measure inflow of SUPs into PICs is by implementing an 8 or 10-digit harmonised system (HS) customs tariff codes with SUP products, and products packaged in SUPs, in mind. This was identified in the literature and consultation as being important to the effectiveness of both market-based as well as regulatory measures, and to enable M&E of SUP measures in a manner and with accuracy that would surpass the more rudimentary approaches described in section 6.4.[24]

HS customs coding is an internationally standardized system of names and numbers used to classify traded products. It is maintained by the World Customs Organization WCO to facilitate global trade and ensure consistency in customs procedures. The HS is organised into a hierarchical structure with six digits. Each digit represents a different level of classification, from the broadest categories at the two-digit level down to specific products at the six-digit level. The HS classifies products based on their characteristics, such as composition, function, and intended use. Each HS code corresponds to a specific product or group of products with similar characteristics. The system is used by virtually all countries; global standardisation simplifies trade processes by ensuring that the same classification criteria are applied everywhere.

HS codes are used by customs authorities to determine the appropriate tariffs, duties, and other import/export regulations applicable to each product. Different countries may apply different tariff rates to the same product based on its classification under the HS system.

While the basic HS code consists of six digits, countries may further subdivide products using additional digits for their own specific purposes. These additional digits, known as national customs codes, provide more detailed classification for customs and statistical purposes within individual countries or regions. The codes that classify with additional detail have either 8 or 10 digits. The suggestion has been made both globally and in relation to the Pacific Island region that more detailed customs codes should be developed to enable countries – in this case PICs – to efficiently identify, regulate, collect statistics upon, and potentially place additional tariffs on, products that are SUPs or are packaged in SUPs.[25]

It was also suggested during consultations that either instead of, or as an interim measure prior to, the introduction of 8- or 10-digit customs codes, PICs should develop simplified import or retail SUP auditing that categorises plastic products consistent with the relevant national SUP bans. This should provide quantified indicators of the effects of SUP bans and other measures. This was discussed in section 6.4.

For the PICs there is the potential for this to be developed at the regional level in concert with Oceania Customs Organisation (OCO). The World Customs Organisation (WCO) has conducted regional programmes such as the WCO Asia Pacific Plastics Waste Project relevant to this objective.[26]

24 Carla Vaca Eyzaguirre and Carolyn Deere Birkbeck. "Plastic pollution and trade across the life cycle of plastics: options for amending the harmonized system to improve transparency." Forum on Trade, Environment & the SDGs (TESS), 2022.

25 Asia Pacific Waste Consultants (2021). *Plastic Waste National Level Quantification and Sectoral Material Flow Analysis: Pacific Regional Report*. Gland, Switzerland: IUCN. Carla Vaca Eyzaguirre and Carolyn Deere Birkbeck. "Plastic pollution and trade across the life cycle of plastics: options for amending the harmonized system to improve transparency." Forum on Trade, Environment & the SDGs (TESS), 2022.

26 https://www.wcoomd.org/en/APPW.aspx

6.6 Improved design and enhanced monitoring and evaluation of SUP awareness and education programs

As noted above (section 5.3.7) all PICs undertake programs of education and awareness in relation to SUP bans and plastic waste. There was however little, if any, reported monitoring and evaluation of these activities. We found few surveys of public attitudes towards plastic pollution or the SUP bans prior to or following the public education and awareness campaigns. The one exception was Vanuatu, where public surveys were undertaken prior to the awareness activities, but it is not clear whether the results of these surveys were applied during the introductory phase of the SUP bans.[27]

Carefully designed and targeted education and awareness building preceding and accompanying SUP bans are needed to improve public support and compliance. These programs would ideally include testing the effectiveness of different messages relating to the harms from plastic pollution on the environment, human health, the climate etc, and the most effective styles and formats of delivering these messages (for example, radio versus television advertising). Messaging targeted at different audiences may also be beneficial, for example, industry, the general public, and children.

Some advice is offered in designing targeted education and awareness building programs:

- Target a behaviour or very small set of behaviours and be clear about the action you want to encourage and what the overall aim of the communications is. Many different behaviours will be too confusing.
- Seek to understand the behaviour, through discussions, surveys or other means. This does not have to be a big process, just consider the causes and who the target audience is. However, you may want to repeat this during the evaluation stage (so some form of recorded data capture is beneficial).
- When crafting your messages, simplicity is key. Tailor your messages to your audience and use a format that resonates with them. Remember, clear and concise messages are more likely to be understood and acted upon.
- Consider how the project will be evaluated when crafting the communications campaign; evaluation is more difficult when regarded as an afterthought. Evaluation should be based on the communications' aim and the behaviours that were targeted. Depending on the aim, pre- and post-attitude surveys may be beneficial, purchasing trends and changes in waste quantities and proportions are likely to provide insights. For example, for the aim of communications to result in the reduction in the purchase of beverages in plastic bottles, data on purchasing at a selection of businesses before and after communications, or surveying showing intention to purchase may be of value.
- Communicating consequences will only have some impact if there is believed there will be a consequence and the consequence is significant enough to shift behaviour. This is most likely to work where the behaviour is driven by that external consequence. Depending on the behaviour and reasons for the behaviour, other messaging approaches may be more beneficial (e.g., emotive storytelling).
- Finally, we note that information-only campaigns are rarely successful.

27 *PACIFIC ISLANDS: PLASTIC WASTE Spotlight on Vanuatu* (DJS Research) 2021.

Literature is available assessing public education and awareness campaigns, including lessons from those campaigns.[28] While international experience is valuable, messages will ideally be framed to appeal to people in each PIC. Engaging Pacific thought-leaders, including traditional and church leaders, in plastics messaging should also be investigated as it could prove an effective way to influence behaviour.

Both the consultations and literature indicate that people currently believe that plastics are safe, so awareness and education programs could test the effectiveness of emphasising the negative health impacts of SUPs, and particularly microplastics.

It is necessary to promote 'zero waste', 'sustainable consumption' and 'circular economy' concepts, encouraging innovations and production of alternatives to single-use plastics and plastic packaging across all sectors. Industry-specific education and awareness campaigns focused on high volume SUP users, such as fisherfolk and tourists, should be considered. Pledges have been reported in the literature to be an effective mechanism in catalysing behaviour change, with the 'Palau Pledge' a positive PIC example.[29]

Finally, as noted above, SUP education and awareness programs should be supported by monitoring and evaluation of those programs. This could include some form of pre- and post-surveying or tracking marketing metrics. Evaluation metrics are best designed alongside the communications program to ensure any necessary data can be captured.

6.7 Promote and facilitate sustainable alternatives

As noted in section 5.3.5 above, a key component in reducing reliance on SUPs is the availability of sustainable alternative products. While the primary task of sourcing alternatives resides with the private sector, national and regional actions can assist by supporting the task of identifying and assessing alternatives to SUPs. Lessons learnt from PICs further who have further progressed in SUP actions is especially valuable.

An example of work already underway is the POLP project: 'Development of a Regional Wide Compendium and Assessment of current research into and practical application of alternatives to single-use plastics, including barriers and solutions for upscaling artisan and commercial products to replace single-use plastics.'[30] Successful delivery of initiatives such as this will help to fill a key policy gap.

Several PIC respondents reported the emergence of nascent local industries aiming to produce alternatives to SUPs. The most frequent example is of women sewing cloth bags to replace SUP shopping bags. Traditional woven or knotted bags are another sustainable alternative, although it is noted that some such items (e.g. PNG bilums) require many days of skilled labour to produce, are expensive to purchase, and so are not a simple like-for-like replacement with 'convenient and cheap' SUPs. In Vanuatu, the social enterprise Mama's Laef has experimented with producing reusable nappies.[31] Other opportunities may exist in selling drinking water to customers carrying reusable bottles. As a general rule, locally produced alternatives that assist PIC entrepreneurs, at all scales, should be encouraged.

28 *Reducing Plastic Pollution: Campaigns that Work* (https://www.campaignsthatwork.org).

29 On pledges generally - Lindemann-Matthies, Petra, Julia Werdermann, and Martin Remmele. 2023. "'Simply Make a Change'—Individual Commitment as a Stepping Stone for Sustainable Behaviors" *Sustainability* 15, no. 16: 12163.

30 https://www.sprep.org/tender/polp-2023002-request-for-tenders-consultancy-development-of-a-regional-wide-compendium-and-assessment-of-current-research-into-and-practical-application-of-alternatives-to-single-use-plastics

31 *Introducing modern reusable nappies into Vanuatu – a trial study* by Savvy Vanuatu, Mamma's Laef Vanuatu, and Bambino Mio, 2021.

6.8 Explore additional regulatory options for SUP reduction

Consultations indicated examples of public-private cooperation to advance the reduction of SUPs in PICs. Examples included tourist operations, beverage industry participants and processed food producers.[32] While this is an encouraging development, it is open to PIC governments to insist that SUP reductions across all industry sectors are a necessary component of the 'social license' of operating a business, particularly for large businesses. The following is from a recent article in *Cambridge Prisms*: *Plastics:*

> *[T]here seems a broad consensus that current policy settings are insufficient and that Government regulatory and economic reform is needed to incentivise new business models, including industry shifts towards source reduction solutions to plastic packaging . . . Reforms can include command and control measures, a sinking lid on overall packaging placed on the market, consumption reduction and reuse targets; bans and mandates to prohibit or require certain packaging types and practices, for example, single-use plastics bans or mandates to offer unpackaged products, accept customer BYO containers or offer reusable packaging options; and standards or essential requirements for reusable packaging systems to ensure best-practice and consistency – and economic instruments – deposit/return systems for single-use and reusable packaging; levies and taxes on single-use packaging, plastics and virgin materials, with funds redirected to financing reuse systems; tax relief or preferential procurement and investment policies for unpackaged or reusable packaging systems; and an enforceable financial obligation on producers to cover the recycling, clean-up and disposal costs of single-use packaging. These measures can be implemented in domestic laws and regulations, or internationally via treaties or other regional and multilateral instruments.*[33]

PICs are constrained in their choice of additional regulatory instruments by various factors, including the limited size of their economies. A market such as the European Union can dictate responsible stewardship to producers and importers who cannot afford not to supply Europe. It is less clear that PICs could exercise the same power. This emphasises the urgent need for an international plastics treaty that can globalise such requirements.

PICs do have additional choices for more ambitious regulations should they choose that route. Examples include:

- Requiring SUP waste reduction planning in EIA and/or business licensing;
- Legislated use reduction and recycling targets;
- Mandated actions by retailers to offer no-or-low packaging options;
- Plastic packaging taxes (discussed in section 6.9)
- Plastic return-to-seller schemes

Since no PIC representative indicated that regulation beyond bans were being considered, the above options (except the tax) are not detailed in this report. It is recommended that interested 'high ambition' PIC governments consider adopting one or more additional regulatory measures to reduce SUPs in addition to the existing bans.

32 E.g. https://www.fbcnews.com.fj/business/new-maggi-packaging-revealed/#:~:text=MAGGI%20multipacks%20now%20are%20wrapped,the%20previous%20Maggi%205%20pack

33 Blumhardt H (2023). Current and future approaches to shifting businesses towards plastic-free packaging systems based on reduction and reuse. *Cambridge Prisms: Plastics*, 1, e18, 1–10.

6.9 Promote recycling and waste reprocessing, prioritising in-country options

Both the consultations and the literature indicate that several PICs operate successful container deposit, or advanced recycling fee, schemes.[34] Other PICs, including Fiji, Samoa and Tonga, have plans to introduce schemes of this nature. Palau, for example, achieves a greater than 80% return rate of PET bottles. While consultations suggested that the application of these schemes to SUPs other than PET bottles is limited, they are proven to be an effective mechanism to accumulate that particular waste stream to facilitate recycling. Our consultations indicated that PNG has assessed the feasibility of introducing a CDS or ARF scheme and has opted not to proceed. While the reasons for that decision are unclear, this seems a missed opportunity to facilitate recycling in the region's largest economy.

Analysis conducted in the PRIF Regional Recycling Hub Prefeasibility Study found that only PET had sufficient volume, potential value, and existing international markets to be considered as viable recyclable (preferably in Fiji and PNG Hubs). This was with the caveat that CDS (or buy back schemes such as Coca Cola's Mission Pacific) would be needed to cover costs to collect and concentrate the materials and that in country value adding (granulation at least) was practiced. The international PET plastics markets require considerable expertise and knowledge to develop and PICs recyclers would need specific assistance in this area. These options should be investigated and, if feasible, encouraged via national and regional policies and programs.

Respondents reported that very small-scale SUP or MUP recycling occurs in Pohnpei FSM (supported by USAID) and Samoa (supported by JPRISM). The respondents were not confident that these pilot projects were operating at a scale that would make a substantial difference in diverting SUP waste from landfill, or producing products that were locally saleable. There are various artisanal uses of plastics as a fabric in the Pacific that produce low volume touristic articles, such as those produced by PlasticWise Gizo in the Pacific.

Of potential relevance was the operation described by Precious Plastic Fiji (PPF). PPF is a social enterprise that combines plastic recycling with community education and outreach programs focused on improving waste management and environmental protection. PPF use the open-source technology developed by the global Precious Plastic network to recycle HDPE and polypropylene. PPF are in the process of scaling-up their recycling operations by purchasing commercial-grade machinery. PPF reports that they are confident that they can source sufficient HDPE and polypropylene (PP) from Fiji's waste stream to operate at a commercial scale and sell the resulting products into the local marketplace at a profit, enabling a self-sufficient social enterprise.

The research team does not have enough evidence to express a view regarding these claims however waste audits conducted by JICA, SPREP, the PRIF, IUCN and the CEFAS CLIP project show that most plastic waste in PICs is comprised of PET and plastic film/soft plastic (Tragic Plastic) with HDPE, PP making up a minor proportion of the plastic waste stream. While PPF reported that they have one or more agreements in place with major hotel chains in Fiji to receive their plastic waste and recycle it into products jointly agreed with the hotel, which has agreed to purchase those products at full retail value, this would be at a boutique level compared to recycling based on PET or plastic film.

34 Leney, A., Uitime, F. S., & Nomura, M. (2022). *Container Deposit Schemes in the Pacific Islands A Guide for Policy Makers*. JPRISM/SPREP.

PIC governments could further investigate the potential of supporting larger scale recycling targeting PET and plastic film, as well as the work of organisations such as Precious Plastic Fiji and PlasticWise Gizo targeting more boutique or artisanal recycling options to assess whether similar initiatives might be encouraged in other PICs, and how these might be supported.

6.10 Assess the feasibility of plastic packaging taxes to reduce SUPs and direct revenue towards reducing harms of SUPs

A policy gap identified is the absence of policies or programs in PICs to reduce *tragic plastics*. As defined in section 2, tragic plastics are a sub-set of single-use plastics and comprise flexible plastic food packaging such as biscuit packets, lolly wrappers, chip wrappers and noodle packets. This waste type is considered 'tragic' because it is a dominant source of terrestrial and marine litter, but is hard to regulate as its use ensures that products are kept fresh, contained and/or uncontaminated.

One possible policy mechanism to address this kind of SUP waste stream is a plastic packaging tax. Several countries have implemented, or announced plans to implement taxes on filled plastic packaging to encourage recycling or to reduce the volume of plastic packaging by applying broad-based incentives to shift to non-plastic alternatives.[35] Countries that have moved in this direction include the United Kingdom, European Union member states and Indonesia.

The justification is primarily to incentivise producers and consumers to minimise plastic waste by imposing charges based on the amount of plastic used. Plastic packaging taxes also generate revenue that can be reinvested into waste management infrastructure, environmental conservation projects, or initiatives to promote sustainable practices. This can help offset the costs associated with plastic pollution clean-up and support the development of more sustainable packaging. Depending on how the tax is designed or applied, it might create incentives to use recycled materials or design packaging for easier recycling. Plastic packaging taxes can support the transition to a circular economy where resources are used more efficiently and waste is minimised.

Despite most tragic plastics circulating in PICs being imported, and the size of PIC economies being too small to force manufacturing transitions in producer countries, the potential for plastic packaging taxes justifies further investigation. The fact that taxes of this kind are now being adopted by large economies suggests that international manufacturers will be pressured to pursue more sustainable alternatives, which should become increasingly available to PIC importers.

Because many proposals to enhance SUP reduction will require financial investment by PIC governments, the availability of taxation revenue to facilitate these investments is potentially important.

35 De Boe, Grégory, Valérie Swaen, and Marie Lamensch. "Plastic Packaging Taxes and Circular Transition: Assessing Impacts on Circular Practices in the Food Packaging Industry in the UK, Spain, and Portugal." *Overcoming Obstacles to Climate Change Mitigation: a cross-cutting approach by human and social sciences conference*. 2024. Tang, Kuok Ho Daniel. "Enhanced plastic economy: a perspective and a call for international action." *Environmental Science: Advances* 2.8 (2023): 1011-1018. Saputra, Agustinus Imam, Supriadi CH Tambunan, and Irfan Yulianto. "Plastic Tax And Circular Economy Incentives To Tackle Climate Change (Indonesian Context)." *Journal BPPK: Badan Pendidikan dan Pelatihan Keuangan* 16.1 (2023): 86-98.

6.11 Improve and expand waste collection services

A detailed examination of waste management and household waste collection is beyond the scope of this study. Nonetheless, several respondents emphasised that addressing SUP harms is a subset of waste management. One respondent emphasised that a very significant factor in determining the volume of SUP waste leaking into the environment was the effectiveness of the waste collection system in each PIC. It is well documented via the previously mentioned waste audits to be poor or non-existent outside of the main population centres. Even in population centres it can be problematic with audits showing Honiara only collects 50% of municipal waste.

Two respondents reported that an appropriate and effective system of waste collection for many locations is using pre-paid bags, currently in place in Port Vila, Luganville, Tarawa and some of the states in the Federated States of Micronesia. They considered this model to be superior since it can be self-sustaining financially through bag fees, that it is an intermediate technology that requires no special equipment (cf. 'wheelie bins' which are expensive and require specialised vehicles for collection), and it reflects the 'polluter pays principle' that should guide waste management.

Detailed consideration of PIC waste collection systems is beyond the scope of this desktop study, but we emphasise that ineffective urban waste collection systems is likely to lead to SUP leakage into the environment.


XVII PACIFIC GAM
2023
PACIFIC GAMES
SOLOMON ISLANDS
For a Plastic Free Pacific!
Refuse. Reduce. Replace
Say NO to single-use plastics
Ministry of Environment, Climate Change, Disaster Management and Meteorology
PACIFIC OCEAN LITTER PROJECT
Australian Aid
SPREP
Secretariat of the Pacific Regional Environment Programme

7. Recommendations

This section distils the recommendations from the analysis provided in section 6. Each recommendation is identified as applying to PIC governments, POLP, or both.

7.1 SUP Bans

7.1.1 Expand SUP Bans

All PIC governments, particularly those that currently have bans limited to one or two product categories, should consider expanding the scope of their SUP bans. SUP bans should be regarded, not as a once-off legislative measures, but as a long-term program of limiting the import and manufacture of harmful products. Whenever sustainable cost-efficient alternatives are identified, or become newly available, for a specific class or type of SUPs, PIC governments should consider banning the import and manufacture of those SUPs.

POLP can assist PICs to expand their SUP bans by, for example, helping to identify and communicate information relating to sustainable cost-efficient alternatives to SUPs, supporting education and awareness raising programs, supporting intragovernmental cooperation for SUP planning, supporting targeted SUP audits, and communicating lessons learnt from PICs further progressed in SUP bans.

These recommendations are justified in section 6.1 above.

7.1.2 Remove exemptions for biodegradable SUPs

All PIC governments that currently exempt biodegradable SUPs from their SUP bans should consider removing those exemptions in line with international norms. Biodegradable plastics have been found to pose significant risks to human health and the environment such that they cannot be considered to be safe alternatives. Removing these exemptions will make compliance and enforcement of the SUP bans more effective and efficient. This recommendation is justified in section 5.3.4 above.

7.1.3 Ensure both customs and waste agencies are empowered under law

Those PIC governments that have SUP bans in the customs schedule should investigate whether it is necessary to enact additional regulations empowering other agencies to monitor the sale and distribution of SUPs. Those PIC governments that have SUP bans in environment legislation should consider also including the import ban in the custom schedule if that would facilitate better enforcement at the point of entry.

7.1.4 Make SUP bans enforceable by all appropriate compliance officers.

Certain PICs have SUP bans that are less effective than they should be because the relevant laws are enforceable by only one agency of government, and in some cases, are not enforceable other than at the point of import.

All PIC governments should review the laws establishing their SUP bans with a view to engaging all appropriate compliance officers in the task of enforcing the SUP bans.

These recommendations are justified in section 5.3.2 above.

7.1.4 Provisions for summary enforcement notices (on-the-spot fines)

All PIC governments should review the laws establishing their SUP bans to ensure that compliance officers are empowered to issue summary enforcement notices (on-the-spot fines) for the offences of selling or supplying SUPs. This recommendation is justified in section 5.3.3 above.

7.1.5 Public statements in support of SUP measures by political leaders and thought leaders

PIC governments, supported by POLP, can assist in raising levels of public awareness and support for new and existing SUP measures by encouraging public statements by pollical (elected) leaders, as well as respected persons outside of government who occupy positions of authority or respect through their roles in customary or traditional institutions, churches, sporting organisations or similar.

7.2 National strategic planning for SUP reduction

All PIC governments that have yet to develop a national strategy dealing with plastics avoidance and waste management, should do so.

POLP can assist in facilitating the development of these national strategies.

These recommendations are justified and discussed section 6.3 above.

7.3 Auditing SUP Import, Manufacture, Disposal and Leakage

All PIC governments with assistance from POLP develop methodologies and processes by which the flow of SUPs into and through a country can be monitored and assessed. The following specific methods, discussed in section 6.4, are suggested:

- Carefully targeted import sampling;
- Iterative targeted SUP audits at managed disposal or transfer facilities;
- Iterative targeted SUP audits of beach and roadside litter to monitor SUP leakage to the environment; and
- Small-sample surveys of specific actors along the SUP materials flow

7.4 Customs Codes identifying SUPs

All PIC governments with assistance from POLP and other relevant regional organisations should consider developing and implementing an 8 or 10-digit customs codes to efficiently identify and calculate the importation of SUP products, and products packaged in SUPs.

POLP could assist in facilitating the development of PIC plastic custom codes in concert with WCO and OCO as well as associated training of customs officers.

These recommendations are justified and discussed section 6.5 above.

7.5 Education and awareness programs

7.5.1 Enhanced design of programs

All PIC governments, with assistance from POLP, should enhance their programs of education and awareness on the consequences of noncompliance with the SUP bans, on the importance of reducing SUP usage, and on plastic waste generally by drawing on best-practice principles and methods of social marketing. Specifically recommended are public education and awareness campaigns that consider the audience and reasons for the current behaviour and are tailored to ensure the messaging resonates and is likely to shift behaviour.

More detailed discussion of the content of this recommendation is provided in section 6.6 above.

7.5.2 Monitoring and evaluation of programs

All PIC governments, with assistance from POLP, should monitor and evaluate their programs of education and awareness on the topic of reducing SUP usage and on plastic waste generally.

This recommendation is justified and discussed section 6.6 above.

7.6 In-Country Recycling of SUPs

7.6.1 Pacific PET Project

Given the large volume and recycling potential of PET, PIC governments should assess the feasibility of establishing facilities that enable the in-country recycling of PET. This is likely to be granulated rPET in Micronesian countries, Polynesia and in the Solomon Islands and Vanuatu in Melanesia, with Fiji and PNG having greater potential to act as regional hubs in producing rPET Pellets with even greater value.

7.6.2 'Precious Plastic' Technology

Interested PIC governments should investigate the operations at Precious Plastic Fiji to assess whether it would be beneficial to encourage similar initiatives in other PICs, and how these might be supported.

These recommendations are justified and discussed section 6.9 above.

7.7 Plastic Packaging Taxes

POLP and interested PIC governments should undertake further research and assessment into the potential costs and benefits of national plastic packaging taxes in PICs. This recommendation is justified and discussed section 6.9 above.

7.8 Container Deposit Systems

Interested PIC governments should consider introducing CDS systems for PET and potentially other plastics to better support the development of a plastics recycling sector. For stalled CDS systems which currently collect PET and other plastics but have not found markets for them POLP could assist with market and technical assistance (links to 7.6.1).

7.9 Explore additional SUP regulatory measures

High-ambition PIC governments, with support from POLP, explore the costs and benefits of additional regulatory measures as discussed in section 6.8. Examples include:

- Requiring SUP waste reduction planning in EIA and/or business licensing;
- Legislated use reduction and recycling targets;
- Mandated actions by retailers to offer no-or-low packaging options;
- Plastic packaging taxes (discussed in section 6.9)
- Plastic return-to-seller schemes

APPENDICES

APPENDIX 1 Stakeholder Consultation Meetings

	ORGANISATION
1	Cook Islands National Environment Service
2	FSM Department of Environment, Climate and Emergency Management
3	Fiji Environment Department
4	Kiribati Ministry of Environment
5	Marshall Islands EPA
6	Nauru Department of Environment
7	Niue Department of Environment
8	Koror State Government, Palau
9	Conservation and Environment Protection Authority, PNG
10	Samoa Ministry of Natural Resources and Environment
11	Solomon Islands Ministry of Environment, Climate Change, Disaster Management and Meteorology
12	Honiara City Council
13	Tonga Department of Environment
14	Tuvalu Department of Waste Management
15	Vanuatu Department of Environmental Protection and Conservation
16	JPRISM
17	USAID Clean Cities, Blue Ocean
18	SWAP (SPREP)
19	SPREP
20	Vanuatu Environmental Science Society
21	Sustainable Coastlines NZ
22	Kiribati Waste Management Project
23	USAID Clean Cities, Blue Ocean
24	Marine Plastic Solutions
25	Branis Recycling PNG
26	GIZ Fiji
27	Precious Plastic Fiji

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ISBN 978-982-04-1363-4