



# **Tangled Waters: Equity-based Study of Plastic Pollution Impacts on Indigenous Communities in Fiji**



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We recognize and appreciate the talents of the local artists listed below and their invaluable contributions to this project report. They have skilfully transformed the research findings into visually compelling artworks.

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## Executive Summary



This report is a culmination of a year's worth of research and fieldwork which examines the impacts of plastic pollution on Indigenous communities in Fiji, blending Indigenous knowledge systems with modern research methods to address environmental equity and sustainability and recommend solutions for improved waste management. The report primarily discusses the complex and multifaceted impacts of plastic pollution on Indigenous communities, with a focus on three case study locations in Fiji. It examines plastic pollution through the critical lenses of equity (distributional, procedural, recognitional, and contextual). The report analyses the effects of plastic pollution through different facets of equity - how plastic pollution's burden is disproportionately borne by Indigenous communities and how equitable solutions must account for the distribution of resources, decision-making processes, recognition of Indigenous knowledge and practices, and contextual solutions tailored to specific community circumstances.

The discussion delves into how plastic pollution degrades the natural environment and hinders traditional practices, livelihoods, and cultural heritage—especially where communities have deeply rooted connections with their land and ocean. Against the backdrop of these challenges, the report documents various community-led efforts to combat plastic pollution, from developing innovative waste management strategies to reviving traditional practices that contribute to environmental sustainability. These include initiatives for waste reduction, upcycling, repurposing, and partnerships with external organisations to improve waste management infrastructure. The report suggests that addressing plastic pollution requires comprehensive strategies that include national and municipal policies to reduce plastic usage, improve waste management, support Indigenous knowledge systems, and enhance community participation in decision-making. It emphasises the need for global cooperation to tackle the issue of transboundary plastic pollution and for fair decision-making processes that incorporates the perspectives and wisdom of Indigenous peoples in environmental stewardship. This report is an important contribution for the Fiji and provides invaluable insights that are necessary to inform national and regional policy frameworks or commitments that seeks to address the full lifecycle of plastic pollution, including in the marine environment.

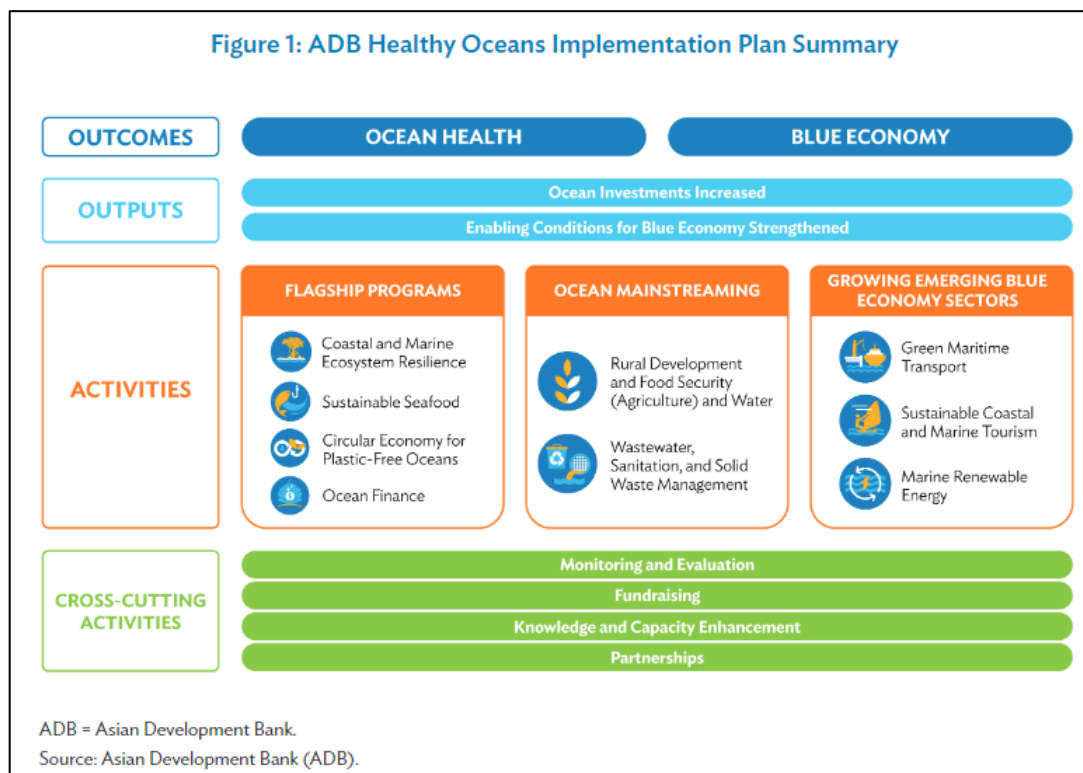
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# Asia Development Bank’s work in Addressing Pollution and Waste Management

## Healthy Oceans Implementations Plan 2022 – 2024

The Healthy Oceans Implementation Plan 2022–2024<sup>1</sup>, formulated by the Asian Development Bank (ADB), outlines strategies to bolster ocean health and foster sustainable marine economies in Asia and the Pacific through increased investments, blue economy enhancement, flagship programs, and strengthening of cross-cutting and institutional pillars. The ADB Pacific countries include Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu. The plan aims to amplify ADB's ocean investments, reaching a \$5 billion target by 2024, focused on increasing resilience and promoting sustainable blue economies.

Four flagship programs are introduced: Coastal and Marine Ecosystem Resilience, Circular Economy for Plastic-Free Oceans, Sustainable Seafood Value Chains, and Ocean Finance. The expected outcomes are to enhance ADB support for ocean health and resilience and for a stronger blue economy for Asia and the Pacific.



The overarching outcomes denote a strengthened commitment by the Asian Development Bank (ADB) toward enhancing the health and sustainability of oceans in the Asia and Pacific region

through increased financial mobilization, engagement with member countries, and focusing on key areas including ecosystem protection, pollution, sustainable development, and finance models that support the overarching goal of stronger, healthier oceans.

The plan acknowledges pollution and waste management as significant aspects to address for achieving healthier oceans. Below are the key points related to pollution and waste management as detailed in various sections of the implementation plan:

1. **Key Challenges and Threats:** The plan highlights how human activities have severely damaged the oceans through over exploitation, pollution, and climate change. Specifically, it mentions the issue of marine plastic pollution, where about 8 million tons of plastic waste leak into the environment annually, entering the oceans through rivers, and from coastal communities. This includes huge volumes of agricultural pollutants and untreated domestic and industrial wastewater, contributing to ocean pollution.
2. **Blue Economy Enabling Conditions Strengthened:** To combat pollution, the plan emphasizes strengthening the enabling conditions for blue economy growth, which includes improving agricultural practices, investing in waste management, applying circular economy approaches to reduce plastic leakage, and enhancing wastewater treatment solutions.
3. **Circular Economy for Plastic-Free Oceans:** The plan introduces a flagship program focused entirely on transitioning towards a circular economy to address marine plastic pollution. It aims to reduce plastic pollution through improved solid waste management (SWM) and circular economy practices. Specific actions include support for policy development, partnerships, multi-stakeholder city action planning, community demonstration projects, and measures to increase recycling while reducing plastic leakage into the marine environment.



4. **Solid Waste Management (SWM):** The plan identifies SWM as a crucial element in preventing land-based plastic and other wastes from entering the ocean. Innovative SWM practices, importantly source separation and recycling, are seen as essential for reducing sources of marine plastic pollution and ensuring cleaner seas.
  
5. **Project Development and Mainstreaming:** Projects aimed at enhancing solid waste and wastewater management systems in coastal and urban areas play a vital role in mitigating pollution threats to the oceans. The plan stresses incorporating ocean health outcomes across traditional development sectors, like water and urban development, to enhance their impact through reduced pollution reaching the oceans.

Pollution and waste management are framed as integral issues that need comprehensive policy, investment, and collaborative efforts at both regional and national levels, requiring the implementation of innovative solutions, engagement with diverse stakeholders, and the mainstreaming of ocean health objectives across broader developmental agendas to mitigate pollution impacts effectively and sustain healthy oceans. The ADB has committed \$111.10 million towards Fiji's urban water supply and wastewater management program for 2024.

**Table 1: Lead SDCC Sector and Thematic Groups for Implementation of the Healthy Oceans Implementation Plan**

STG	Ecosystem and Natural Resources Management			Pollution Control				Sustainable Coastal and Marine Development			
	Ecosystem Management, Restoration	Fisheries	Aquaculture	SWM	Circular Economy	NPS Pollution	Wastewater	Coastal Resilience	Tourism	Ports and Shipping	Marine Renewables
ETG	Lead	Co-Lead		Co-Lead (Plastic)	Lead	Support		Co-Lead	Support		
CCDRM								Co-Lead			Support
Energy			Support	Support							Lead
FSG		Support						Support			
RCI	Support								Co-Lead	Support	
RDFS		Co-Lead	Co-Lead			Co-Lead					
Transport										Co-Lead	
Urban				Co-Lead	Support		Co-Lead		Lead		
Water					Support	Co-Lead	Co-Lead	Support			

CCDRM = Climate Change and Disaster Risk Management Division, ETG = Environment Thematic Group, FSG = Finance Sector Group, RCI = Regional Cooperation and Integration Thematic Group, RDFS = Rural Development and Food Security Thematic Group, SDCC = Sustainable Development and Climate Change Department, STG = sector or thematic group, SWM = solid waste management.  
Source: Asian Development Bank.

(Source: <https://dx.doi.org/10.22617/ARM220603-2>)

## Country Profile

Official Name	<b>Republic of the Fiji Islands</b>
Land Area	18,333 km <sup>2</sup>
EEZ	1.3 km <sup>2</sup>
Capital	Suva
Administration Districts	15 Provinces; Divisional (Central, Eastern, Northern and Western)
Climate	Tropical maritime
Population	936, 375 (2023)
Population Distribution	Urban (56%), Rural (44%)
Census Date	2017
Waste management system	Anaerobic landfill (Nationalised) Limited recycling infrastructure (Privatised)
Waste management distribution	4 Solid waste management wards; 10 sectors
Solid Waste management revenue streams	Tipping fees (at three disposal sites), Environment and Climate Adaptation Levy (plastic bag levy, taxes on luxury importation, certain services, income, etc.), licences (recycling, waste picking), littering fines and notices, and sales of compost and recyclables.
National Waste [Plastic] Policies/Acts/Frameworks	Environment and Climate Adaptation Levy (Plastic Bags) Regulations 2017 (plastic bag levy) Environment Management (Budget Amendment) Act 2019 (plastic bag ban) Climate Change Act 2021 Litter Act 2008 Customs (Prohibited Imports and Exports) Regulations 2019 Environment Management (Amendment) Act 2020 (polystyrene products ban) [Draft] National Waste Management and Pollution Control Strategy and Action Plan 2019–2029
Currency	Fijian Dollar (FJD)
Average GDP per capita	\$3,662.97 USD
GNI per capita	\$13,370.00 USD (2022)

## Summary Key Findings

- Indigenous communities in Fiji face significant health and environmental challenges due to plastic pollution, including their traditional ways of life and food sources.
- Indigenous knowledge and practices are vital in monitoring environmental changes and managing waste sustainably.
- Community-led initiatives, supported by external partnerships, have shown promise in improving waste management and reducing plastic pollution.
- Equity, through its multi-faceted dimensions, is essential in formulating waste management strategies that acknowledge and address Indigenous communities' unique needs and contributions.
- The accounts of waste pickers illustrate an unrecognised and unregulated economy of waste collection, stressing the critical importance, as well as the inherent dangers present in the way we manage waste today.
- There is a broader call for systemic change in waste management policies to incorporate recognitional and contextual equity, prioritizing inclusivity and acknowledging the rights and knowledge of Indigenous populations.
- Regional and global cooperation, as well as understanding the specifics of Pacific Island nations and the larger dynamics of global plastic consumption and pollution, is crucial for effective solutions.



## Tracing the Roots of Traditional Waste Management Practices in Fiji





Fijian elders speak of Ratumaibulu<sup>1</sup> (also *Ratu-Mai-Bulu*<sup>2</sup>), a deity who was born as a snake and had the power to morph into any shape he wanted. He was close to his father, Degei, and often visited him in his cave on the island of Viti Levu. One day, he decided to explore the other islands and see what they had to offer. As he came across Vanua Levu Island (the second largest in Fiji's archipelago), Ratumaibulu was captivated by the abundance of exquisite fruit trees. Their variety left him in awe, and he yearned to taste each and every one. Changing into human form, he climbed the trees, relishing the fruits to his heart's content. His father and home momentarily forgotten; he remained in this state of bliss.

For countless days, he stayed on the island, indulging in the fruits and finding solace beneath the trees. During his stay, Ratumaibulu encountered the friendly and inquisitive locals. They expressed curiosity about his origins and name, but he opted not to divulge the whole truth. Instead, he claimed to be a traveller from a different island, adopting the name Ratumaibulu, which meant "the one (also chief or *Ratu*<sup>3</sup>) who comes from *Bulu*<sup>4</sup>". Embracing his presence, the islanders extended an invitation for Ratumaibulu to dwell among them. In turn, they imparted knowledge on planting, cultivating crops, fishing, hunting, crafting tools, and constructing dwellings. Ratumaibulu swiftly absorbed this newfound wisdom and assisted them diligently. Furthermore, he imparted some of his own skills, teaching them the art of weaving mats and baskets, pottery making, jewellery crafting, music, and dance.

Naturally, Ratumaibulu became incredibly popular among the locals, especially the women. His handsome appearance, charismatic nature, and benevolent spirit led many to fall in love with him. Likewise, he formed deep connections and ended up courting several women. His serpent-like qualities and abilities were inherited by his children, who were born from these

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<sup>1</sup> In the Western regions of Fiji, the people acknowledge the goddess Lewatu Momo, who holds a comparable status to Ratumaibulu. Moreover, they diligently observe and follow identical customary practices and traditions. Ratu mai Bulu is also a deity in Viti Levu, of Tailevu Province, especially.

<sup>2</sup> The initial Roko Tui Bau, *Vueti* (also known as *Ko Mai Vatanitawake*) constructed a sanctuary/temple (referred to as *Bure Kalou*) as a mark of reverence to his deity, Ratu Mai Bulu, and perceived himself as the mortal embodiment of his forefather god, often identifying himself as Koroi Ratu Mai Bulu. Subsequent to the ascendancy of the Tui Kaba, following the ousting of the Roko Tui Bau, Raiwalui, the temple on Bau Island was additionally employed to honour the Kaba god of warfare, Cagawalu. In 1879, it was designated as the Bau Council House.

<sup>3</sup> It was a customary tradition in ancient Fiji for individuals to show reverence to (venerated) deceased individuals, particularly chiefs or priests who held significant positions within the community.

<sup>4</sup> The designation of the realm inhabited by spiritual entities, bearing resemblances to the Western mythological notion of the "underworld".

unions. Joyously, Ratumaibulu thrived on Vanua Levu Island for numerous years. Yet, one day, a pang of remembrance struck him, and he recalled his beloved father Degei. Consumed by guilt for leaving Degei alone in his cave, Ratumaibulu resolved to pay him a visit. Informing his spouses and children of his imminent journey, he reassured them of his swift return. Thus, transforming back into a snake, he traversed the sea, heading towards Viti Levu.

Upon arriving at his father's cavern, Ratumaibulu received an overwhelmingly warm welcome. Degei, brimming with joy at the sight of his long-lost son, tightly embraced him. Inquisitive about Ratumaibulu's whereabouts and endeavours, Degei eagerly listened to his account of the events. The achievements of his son filled him with pride, but he couldn't ignore the anger stemming from Ratumaibulu's prolonged absence. He scolded Ratumaibulu for forming unions with mortal women and violating the natural order, thereby offending the other gods. He said that he had to punish him for this wrong, or else he would lose his respect and authority.

Degei admonished Ratumaibulu. Without exception, Degei decreed that Ratumaibulu was forever banished to *Bulu*, the realm of spirits.

Dejected and shocked by his father's words, Ratumaibulu begged for mercy and forgiveness. Yet, Degei remained resolute, asserting that it was too late for a change in destiny. However, he also reassured Ratumaibulu of his enduring love as a father. The right course of action must be taken. Degei proceeded to cast an unbreakable spell upon Ratumaibulu, relinquishing him of his status and privileges. He banished Ratumaibulu to *Bulu*. Overwhelmed with despair, Ratumaibulu let out a cry as he departed his father's cave, destined to never gaze upon his visage again.

Arriving in *Bulu*, Ratumaibulu found himself embraced by a vast assortment of fruit trees. This newfound realm became his eternal abode and domain. Initially filled with loneliness and sorrow, he gradually learned to embrace his new purpose. Ratumaibulu emerged as the revered deity among his people, responsible for the bountiful flowering and fruit-bearing of the trees. Also, assuming the mantle of protector of his people, they honoured him as their noble ancestor and benefactor. From *Bulu*, he watched over them and occasionally visited their dreams. He held onto the hope of a future reunion with his mortal family, who would eventually reside with him in *Bulu* upon their own passing. The love he held for them never wavered, and their

affection for him remained undying. In their hearts and oral stories, they kept his memory alive, faithfully passing it down to future generations.

The narrative of Ratumaibulu holds a special place in the hearts of some Fijian elders. The god of the harvest would visit the people during *Vula-i-Ratumaibulu* (November/December) to inspect the gardens, plantations, and waterways. Because of his distaste for warfare and noise, any war or conflict would cease before this period so that people could prepare their *Vanua*<sup>5</sup> prior to the arrival of Ratumaibulu, a practice called *bulubulu* customarily observed till today. During this time, the people would observe reconciliation<sup>6</sup> and the practice of ensuring there was no form of pollution (*benu ca*<sup>7</sup>) in their *Vanua* by coming together and cleaning their villages, gardens, and waterways. The arrival of Ratumaibulu is observed in silence by the people. If pleased with the people and the *Vanua* after inspection, Ratumaibulu would bless the people and their harvest for the year and return to *Bulu*. This is sounded by the priest, who breaks the period of silence with a loud call, followed by celebration, singing, and dancing by the people and coincides with the first months of the new year (January/February) on the Gregorian calendar. The people offer their first bounty from the land or sea to the high priest as an expression of appreciation and thanksgiving to Ratumaibulu, a practice called *vula-i-sevu*<sup>8</sup>.

The narrative of Ratumaibulu encompasses various themes that bear relevance to contemporary waste management, the preservation of knowledge, the significance of Traditional Ecological

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<sup>5</sup> In Fiji, *Vanua* is sacrosanct. It is the interconnectedness of communal governance systems, people's traditional sacred attachments to the land, Ocean, resources, social identities, roles, and relationships (beyond spatial boundaries). It may also specifically refer to the land, its resources and its inhabitants.

<sup>6</sup> Within Fijian culture, the established tradition of resolving conflicts/reconciliation is referred to as "bulubulu," constituting a crucial element of communal existence. Disagreements find resolution through the presentation of a whale's tooth (*tabua*) as a gesture of goodwill or recompense, accompanied by a sincere request for forgiveness. Social expectations heavily influence the acceptance of this apology, as embracing the practice of bulubulu historically served to halt the perpetuation of retaliatory actions.

<sup>7</sup> In the context of loosely transliterating "Benu ca", the term (as used here) denotes the act of disposing of waste or waste indiscriminately or in a haphazard manner. Similarly, "benu vakaca" is employed to describe the presence of scattered waste or waste resulting from littering.

<sup>8</sup> February marks a pivotal point in the year. It's the time when the harvest of cultivated yams begins, and the construction of yam storage sheds, known locally as *lololos*, takes place in the fields. It's also a period for offering the season's first fruits to the local chief and the Church. This month sees a bountiful harvest of various produce, including breadfruit (*uto*), taro (*dalo*), cassava (*tavioka*), Polynesian chestnut (*ivi*), as well as the fruit from *wi* (*Spondias dulcis*), *dawa* (*Pometia pinnata*) trees, and oranges. It's important to note that cassava and oranges are not native and have been introduced to the area. Another sign marking this time of year is the flowering of the *dakua salusalu*, a type of timber tree. In the fish fences, small fish such as *malevu* and *voro*, which take the place of *ki* (goatfish), become common.

Knowledge (TEK) in augmenting scientific understanding, and the impetus for environmental conservation. Primarily, the narrative underscores the importance of upholding cleanliness and averting pollution within our environment. The account references how Ratumaibulu's arrival was preceded by a period of cleaning and reconciliation, during which the inhabitants of the Vanua that revered Ratumaibulu united to ensure the absence of any form of pollution in their surroundings. This signifies the recognition that a pristine and thriving environment is indispensable for the well-being of the community and the natural resources they rely on. This notion strongly resonates with contemporary waste management practices, which strive to curtail pollution, foster sustainability, and safeguard ecosystems for future generations.

Moreover, the story highlights the significance of safeguarding ancestral knowledge. Ratumaibulu acquired wisdom from the local people, encompassing disciplines such as cultivation, fishing, and craftsmanship while sharing his own knowledge. This knowledge exchange engendered mutual growth and progress for both Ratumaibulu and the local people. Analogously, within waste management and environmental conservation, it is imperative to acknowledge the value of traditional practices and the wisdom accumulated across generations. Traditional Ecological Knowledge, encompassing Indigenous knowledge systems, holds the potential to offer valuable insights into sustainable resource management, biodiversity preservation, and ecosystem resilience. Integrating TEK with contemporary scientific knowledge can pave the way for more productive and culturally appropriate environmental strategies.

The narrative of Ratumaibulu inspires contemporary efforts to conserve and uphold the cleanliness of our environment, promoting non-toxicity, regeneration, and restoration as key elements of circularity. In the context of waste management and environmental conservation, it is crucial to recognize the value of traditional practices and wisdom accumulated over generations, ensuring that what is introduced into the community is also 'clean.' The narrative of Ratumaibulu teaches us that by heeding these lessons, we can strive towards a more sustainable and harmonious connection with our *Vanua*.

## Introduction

The environment is under constant deterioration and decline due to the presence, accumulation and effects of waste materials, particularly plastic wastes and products. Ecosystems and the food web have been infiltrated by plastic pollution, due to the hyperproduction and consumption of plastics, particularly unsafe, unsustainable and non-essential plastics, including poorly regulated production and dumping of plastics and its associated toxic substances into the environment<sup>2</sup>. Globally, plastics are so ubiquitous that even microscopic sizes of them are found in the human body, including the bloodstream<sup>3</sup>. Humans have a complex relationship with plastics, and while everyone relies on its use for a variety of purposes, not everyone equally bears the burden of its impacts once it becomes waste. To grasp why plastic pollution impacts some individuals more than others, and why the responsibility for it is unevenly distributed, we must initially explore key viewpoints. Understanding these perspectives is essential for achieving fair and beneficial results for all people.

### **What is Equity, and what does it have to do with plastic pollution?**

Equity is a concept that refers to the fair and just distribution of resources, opportunities, and outcomes among different groups of people<sup>4</sup>. Equity recognizes that other people have different needs, experiences, and histories and that these factors may create barriers or disadvantages for some groups. The concept of equity in environmental sustainability has gained much attention in recent years<sup>5,6</sup>. As the world faces the consequences of climate change and environmental degradation from pollution, it has become increasingly clear that not all communities around the world share the burdens equally. The Pacific Island Countries and Territories (PICTs) will see up to 30 to 90 million metric tonnes of plastic pollution by 2030 entering its oceans and terrestrial environment from irresponsible dumping from countries and regions outside of PICTs<sup>7</sup>.

Throughout the entire life span of plastics, encompassing its extraction and production to disposal, removal and remediation, there are substantial adverse impacts on human health<sup>8</sup>. These effects disproportionately impact individuals who are economically, socially and geopolitically disadvantaged. Equity seeks to identify, understand, and address these barriers and disadvantages by providing tailored support and interventions that enable all people to live a full and healthy life.

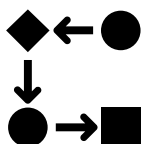


Equity is not the same as equality, which means treating everyone the same regardless of their differences<sup>9</sup>. Equality may not lead to equity if it ignores the underlying causes of inequality and injustice. Equity is also not the same as diversity, which means acknowledging and respecting the variety of identities, cultures, perspectives, and experiences that exist among people. Diversity may not lead to equity if it does not challenge the systems and structures that create and maintain inequity and oppression. Equity is a goal that requires ongoing commitment and action from individuals, organizations, and society as a whole.

Equity involves examining and addressing the systemic and structural barriers that can result in unequal outcomes and opportunities for different social groups. Equity focuses on providing everyone with what they need to thrive, rather than treating everyone exactly the same. There are several types of equity<sup>10</sup> commonly discussed in the social sciences. These include:



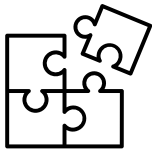
**Distributonal Equity** concerns the fair distribution of resources and outcomes in society. It emphasises that resources should be allocated to reduce disparities and ensure that everyone has access to the essentials for a decent quality of life. This type of equity is concerned with addressing income inequality, wealth disparities, and the distribution of goods and services.



**Procedural Equity** focuses on the fairness of the processes and procedures for making decisions. It emphasizes that the methods used to distribute resources and make decisions should be fair and transparent and that individuals should have a voice in the decision-making processes that affect them. Procedural equity aims to ensure that decision-making procedures are unbiased, inclusive, and participatory.



**Recognitional Equity** pertains to the fair recognition and representation of diverse identities, experiences, and perspectives. It emphasizes the importance of acknowledging and valuing the uniqueness and contributions of different social groups. Recognitional equity addresses issues such as discrimination, stereotypes, and biases based on race, ethnicity, gender, sexuality, disability, and other social identities.



**Contextual Equity** recognizes that different individuals and groups may require different resources and opportunities based on their specific circumstances and needs. It takes into account the social, economic, and historical contexts that influence people's lives and experiences. Contextual equity acknowledges that treating everyone exactly the same may not lead to equal outcomes, as some groups face greater barriers and disadvantages due to systemic factors beyond their control.

Through the examination of socio-economic implications from the perspectives of distributional, procedural, recognitional, and contextual equity, it is possible to formulate all-encompassing and focused strategies to address the issue of pollution, including in the marine environment<sup>9,11,12</sup>. This thorough comprehension enables the recognition of systemic disparities, the involvement of marginalised communities in decision-making procedures, the acknowledgement of diverse viewpoints and contributions, and the tailoring of interventions to particular circumstances. In essence, the integration of these equity dimensions fosters fairer, more inclusive, and sustainable outcomes when dealing with the socio-economic consequences of pollution<sup>13,14</sup>.

Analysing the socio-economic ramifications from the perspective of distributional equity facilitates the mitigation of imbalances in resource allocation and consequences<sup>15</sup>. By discerning the disproportionate impact of plastic pollution on various societal groups, it becomes possible to direct interventions towards reducing inequalities<sup>16</sup>. For instance, examining distributional equity may unveil the greater pollution burden of marginalized coastal communities due to insufficient waste management infrastructure. Such insights can inform the allocation of resources to enhance waste management systems in these communities, thereby ensuring a fairer dissemination of the advantages resulting from pollution reduction endeavours.

The consideration of procedural equity holds utmost importance in guaranteeing impartial and all-encompassing decision-making procedures. By actively involving affected communities and engaging diverse stakeholders in the decision-making process concerning plastic pollution, we foster outcomes that are fair and transparent<sup>17-19</sup>. Analysis of procedural equity may reveal the existence of systemic obstacles that impede the participation of marginalized groups in

decision-making, such as restricted access to information or unequal power dynamics. By addressing these barriers and advocating for inclusive processes, we empower marginalized communities and ensure their perspectives are acknowledged, thus resulting in more equitable and productive solutions.

A comprehensive grasp of the socio-economic consequences of pollution, guided by the principles of recognitional equity, underscores the significance of appreciating diverse identities and experiences<sup>20</sup>. We actively counteract discrimination and stereotypes by acknowledging and actively addressing the disparate effects of pollution on various social groups. For instance, an analysis of recognitional equity may unveil the distinctive connections and specific hardships faced by certain populations, such as Indigenous communities or minority groups, due to pollution. Recognizing their valuable contributions, knowledge, and cultural practices facilitates the adoption of inclusive strategies that uphold their rights and advance social justice.

Acknowledging contextual equity encompasses understanding the influence exerted by social, economic, and historical contexts on the socio-economic consequences of plastic pollution. It recognises the necessity of tailoring interventions to address the unique circumstances and requirements of different communities<sup>14</sup>. For example, an analysis of contextual equity may unveil the heightened vulnerability of marginalized communities lacking alternative economic opportunities to the economic repercussions of pollution, including in the marine environment. By considering these contextual factors, strategies can effectively target the underlying causes of inequalities, avoiding the implementation of uniform approaches that may prove unsuitable for diverse contexts.

In Fiji, research has shown that ecosystems like mangroves, rivers and coastal environments in Fiji are polluted with (micro)plastics<sup>21-23</sup>, compromising important food resource systems and sources like mussels and fishes<sup>24-26</sup>. Plastic pollution in Fijian communities has significant implications for both the environment and the people's well-being. Although studies on the impact of plastic waste in rural areas are relatively understudied compared to urban areas<sup>27-29</sup>, it is clear that poor waste management practices worsen the problem<sup>30</sup>. The lack of safe, sustainable waste management infrastructure and limited resources aggravate the situation, accentuating the need for specific attention to re-design and revamp the existing system in Fiji

<sup>31</sup>. Initiatives are being undertaken to address the knowledge and research gap on the issue of waste management challenges between rural and urban areas in Fiji. For instance, groups like the Pacific Waste Plus <sup>32</sup> focuses on empowering communities in Fiji through waste management awareness and waste audits <sup>33</sup>.

However, safe and sustainable waste management is still a downstream approach, and while Fiji (like many other Pacific Small Island Developing States) is on the receiving end of plastic pollution <sup>34</sup>, more attention needs to be invested towards nationalising preventative measures on the upstream end of plastic pollution, focusing on banning the production or import of virgin plastics <sup>35,36</sup>. It is becoming increasingly crucial for a global-led effort to address the plastic pollution crisis, and not only nationally or regionally. In 2021, the Pacific Forum Leaders passed the Pacific Regional Declaration on the Prevention of Marine Litter and Plastic Pollution and its Impacts <sup>37</sup>, acknowledging the urgent need for a global action plan to address marine litter and plastic pollution, highlighting the disproportionate impact on Pacific nations despite minimal contribution to global plastic pollution. The declaration calls for a binding global agreement covering the entire life cycle of plastics, emphasizing the role of all stakeholders, including Indigenous Peoples, in combating the crisis. The Pacific islands, like Fiji, is actively participating in shaping this global response by advocating for a circular economy and reuse model to minimize and address plastic pollution, including in the marine environment. Meaningful and wide collaboration, in a cross-sectoral holistic approach, between Indigenous communities, civil society organizations, and governments is vital to develop effective preventative policies, safe and sustainable practices, and proper integrated waste management systems to mitigate plastic pollution and protect marine ecosystems and human health.

## Methodology

### Study Sites

The research was conducted in three Indigenous coastal villages: Yadua Village (Nadroga-Navosa Province), Galoa Village (Serua Province), and Silana Village (Tailevu Province) on Fiji's mainland, Viti Levu (Figure 1). The study sites were selected based on their geographic location as a coastal community, including their distance from urban areas and access to municipal council services, particularly garbage collection. The villages are primarily composed of Indigenous Fijians with a rich culture and history.

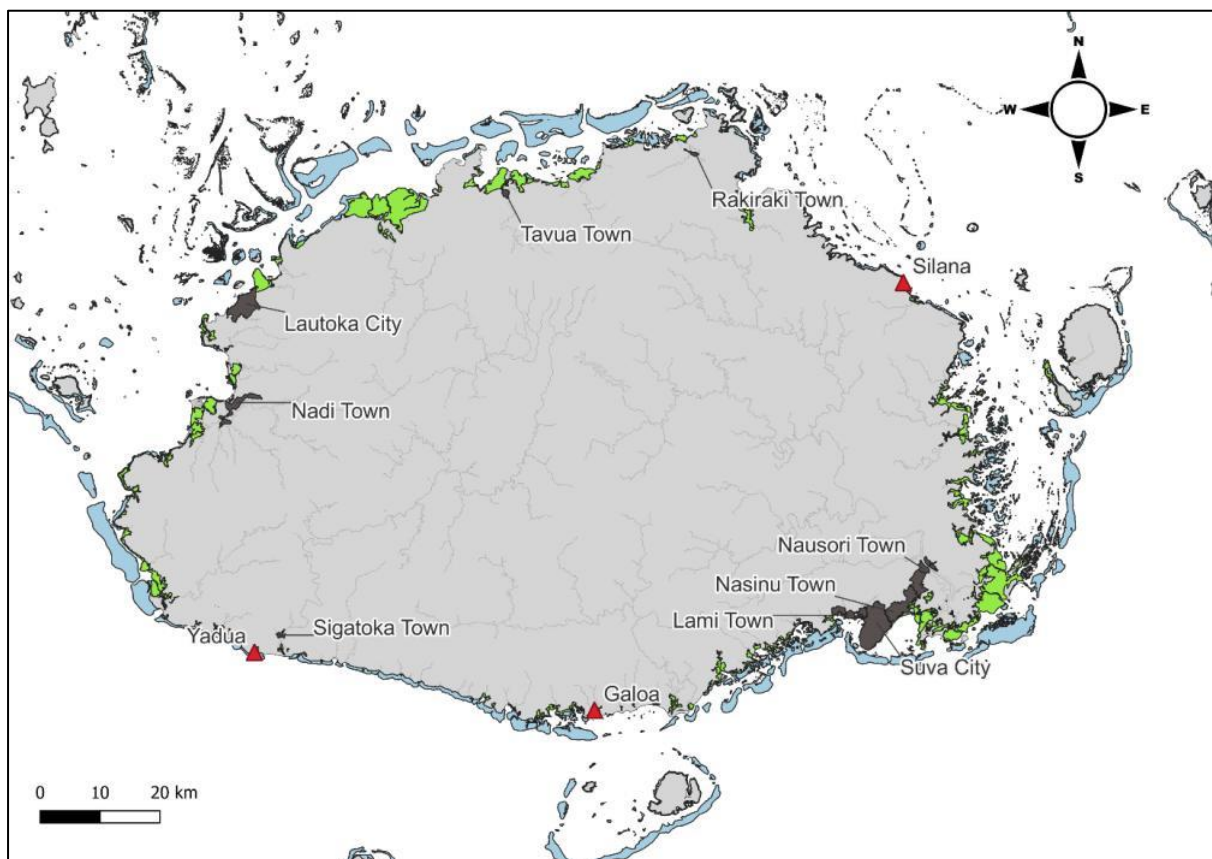


Figure 1: Map of the three study sites, the villages of Yadua, Galoa and Silana on mainland Viti Levu, Fiji.



### Yadua Village

Yadua Village is located in the Nadroga-Navosa province and sits by a bay where the Sigatoka River flows into. Yadua village is a 10-minute drive from Sigatoka Town and is situated 1.5 km from the Sigatoka Sand dunes, a National Trust site. As one approaches Yadua village, there is a landfill site that is situated on private land, at the heart of the National Trust site. In March of 2023, the Fiji Department of Environment expressed concern over the garbage from the Sigatoka landfill spilling into the Sigatoka Sand Dunes<sup>38</sup>. In November 2023, the Fiji Times reported extensive smoke and fumes from the Sigatoka landfill and advised motorists to drive with care when driving past the site on Queens Highway<sup>39</sup>. Waste generation within the landfill is 7 to 8 tons of waste per day, including green waste. More than 70% is organic waste from vegetables, food, market waste, and fibres. Waste collection and transfer to the Sigatoka landfill by the village is done on a weekly basis.

### Galoa Village

Situated on Viti Levu's Queens Highway, Galoa village is approximately 45.05 km away from Suva, Fiji's capital, and 12 minutes' drive from Pacific Harbor. It houses 150 households with a total population of 589, making it one of the largest villages in the Serua province. In Galoa, there are three clans and six family units. Galoa utilises (at its own expense) the Naboro landfill located approximately 35 km towards Suva City. Waste collection and transfer to the Naboro landfill by the village is done on a weekly basis. The Naboro landfill is Fiji's first and only sanitary landfill for municipal waste disposal. It has been operational since 2005 and is designed to operate for at least 70 years.

### Silana Village

Silana is situated 86 km from Suva and approximately 36 km to the closest town, Korovou. Silana is among the 146 villages located in the Tailevu province, which is part of the Dawasamu district. It is one of the five coastal communities in Dawasamu, inhabited by over 200 people. The village is remote and does not receive municipal services such as garbage collection. The greater Dawasamu District doesn't have any formal/regulated landfills nearby that the villages can use. An international non-governmental organization (INGO) funds and facilitates the villages' waste collection on a monthly basis.

## **Vanua Research Framework**

In the PICTs, Indigenous researchers must conduct further studies using appropriate frameworks and methodologies that acknowledge the Pacific and Fijian perspectives, cultural wisdom, and ways of knowing. This approach is essential to ensure the research is anchored and maintains methodological rigour. Similar to other marginalized and disproportionately affected communities, such as women and minorities, Indigenous framings contribute to challenging dominant ideologies and uncovering the pivotal role of research in their respective contexts. The Vanua Research Framework is valuable due to its focus on decolonizing research practices, cultural sensitivity, promotion of community well-being, indigenous validation, and potential for broader application in Pacific contexts <sup>40</sup>. Its existence challenges biases, empowers Indigenous Fijians, and ensures research outcomes serve and respect Indigenous communities.

The Vanua Research Framework is an Indigenous Fijian approach to research that aligns with Fijian values, protocols, and knowledge systems. Developed by Nabobo-Baba <sup>41</sup>, it emphasizes an ethical and culturally sensitive methodology for researching Fijian histories, realities, skills, and knowledge. The framework is an example of ethical Indigenous research, considering Fijian values, relationships, and cultural contexts. It is designed to respect and incorporate Indigenous Fijian worldviews, knowledge systems, and lived experiences. The framework has been successfully applied in various studies <sup>41-43</sup>, offering a guide for research within the Fijian cultural context. It aids in understanding Indigenous cultural worlds by utilizing Indigenous systems of knowledge as the foundation of research.

As part of the Vanua Research Framework, Talanoa research was employed. Talanoa involves conversational exchanges that incorporate storytelling and emphasizes open dialogue, personal encounters, cultural sensitivity, and mutual understanding. The research involved ten Indigenous members from villages across each of the three study areas, resulting in 30 individual participants. The age range of the participants varied from about 18 to 80 years, demonstrating relatively homogeneous demographic characteristics (Women: 60%, Men: 40%). To comprehend the different perceptions about the impacts of plastic pollution within the communities, group Talanoa were held with the village youth groups (*tabagone*), the women's village group (*soqosoqo vaka marama*), and the community elders (*Komiti ni Koro*).

All participants and groups involved in the Talanoa process received a research information sheet (Appendix 3) explaining the research purpose in both English and Fijian (*Bauan* dialect) and outlining the methods by which information would be collected, stored, and managed. Once Free Prior and Informed Consent (FPIC) was obtained, the Talanoa discussions commenced, encompassing the collection of voice recordings and photographs for research purposes (Appendix 4). At the end of the fieldwork in each community, an appreciation ceremony (*iTatau*) was presented to the village headman (*Turaga ni koro*) and the village elders to thank them for their hospitality and support.

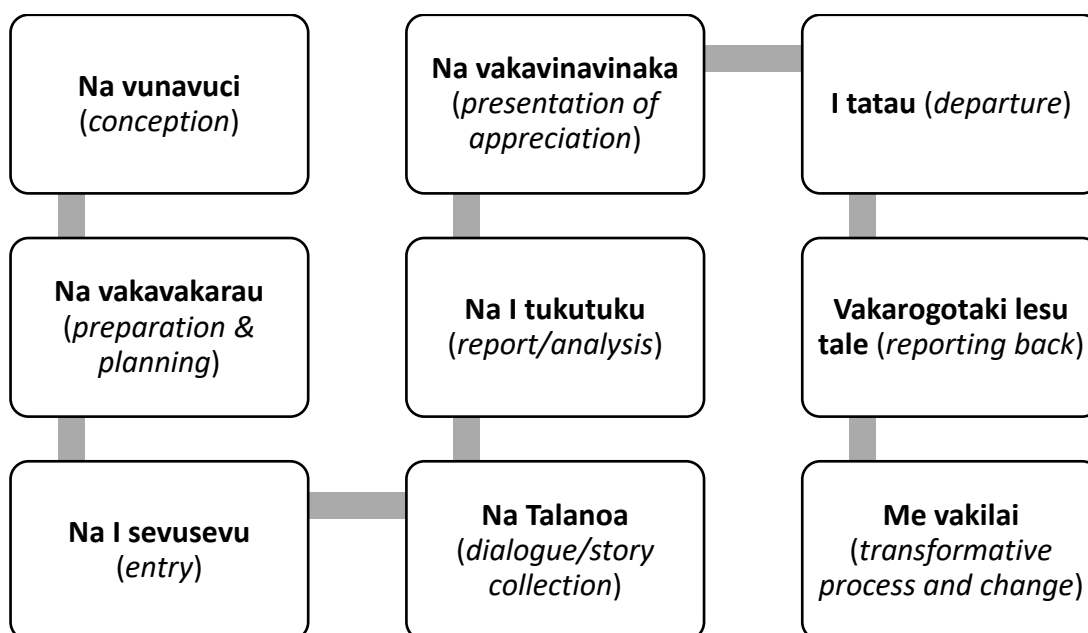


Figure 2: Steps of Vanua Research adapted from Nabobo-Baba <sup>44</sup>.

## Talanoa Research

Talanoa research methods (TRM) encompass a research methodology extensively employed in the Pacific region. TRM is distinguished by its adaptability and broad applicability across diverse research scenarios <sup>45,46</sup>. This method promotes decolonized research, fostering cultural comprehension, and embracing Indigenous knowledge and perspectives <sup>47,48</sup>. It distinguishes Pacific research from Western approaches while nurturing socio-cultural relationships. Talanoa research methods hold notable value in facilitating collaborative engagement and

understanding between Indigenous and non-Indigenous communities across various contexts, such as addressing plastic pollution <sup>49</sup>.

The utilization of TRM aimed to engage community members and gather comprehensive insights into their firsthand experiences concerning plastic products and materials, including the impacts of waste disposal. Talanoa is a Pacific research method that involves open dialogue and personal encounters, emphasizing the sharing of realities and aspirations. It fosters deep interpersonal relationships, empathy, and mutual understanding. Talanoa involves face-to-face discussions, trust-building, and empathetic exchanges without predetermined questions.



To protect the identity of the participants of the Talanoa, pseudonyms have been assigned to the extracted dialogues used in the results section of this report. Using pseudonyms is considered best practice in reporting research and follows ethical guidelines. It demonstrates an ethical stance by protecting the privacy and identity of participants. A pseudonym is a fictional name different from a person's real name (known as an orthonym) or a place's actual name (referred to as a toponym) <sup>50</sup>. Specific age ranges (5-year intervals) are used herein to maintain the anonymity of the participants. Age can significantly influence a person's perspectives, experiences, attitudes, and responses. Knowing a participant's age range helps place their responses in context, allowing researchers and readers to interpret the findings more appropriately.

Researchers and participants aimed to develop a clear objective through open dialogue. Storytelling served as a qualitative method within the framework of Talanoa research, enabling researchers to comprehend, collaborate, and appreciate the depth and richness of information shared by participants. In conducting the Talanoa (Appendix 1), the Indigenous researchers leveraged their own positionality along with their experiential and academic knowledge to guide the dialogue exchange with participants. A ceremonial request of entry in the village (*sevusevu*) was initially made to the head of each provincial council (*Roko Tui*), and the research team was accompanied to the villages to be introduced to the village chief (*Turaga ni koro*) and the village elders, with another presentation of a *sevusevu*. A ceremonial thanksgiving upon departure (*vakavinavinaka*) was presented to each participant who agreed to engage in the Talanoa research.



## Results

### Yadua Village [Nadroga-Navosa Province]

In Talanoa sessions with the people of Yadua, it was clear that the location of the landfill along the coastline and its proximity to the village poses great health concerns for the people.

“When the waste dump catches fire, and this happens often, the smoke from the landfill engulfs the village and it can linger for up to two weeks. It’s bad because not it brings a foul smell, which attracts a lot of flies.” **Mere, 45 – 50 years old; female [20 June 2023]**

Many villagers in Yadua are fishermen. They rely on their customary marine area (*qoliqoli*) for both subsistence fishing and selling their catch in local markets. Fishing plays a central role in village life and is a crucial part of their livelihood. Yadua has a fascinating legend about a beautiful woman called Neiori who lived there. The story of Neiori centres around a young woman from Yadua village, known for her beauty and kindness. Her fame spread far, drawing visitors from neighbouring villages who brought gifts to win her favour. However, Neiori declined these presents with a gentle smile. News of her remarkable beauty reached Votualailai, prompting the chief to offer her a unique gift, a *kawakawa* (grouper) fish, hoping she would marry him. Neiori gratefully accepted the fish but turned down his proposal, releasing the fish back into the ocean. This act, the people of Yadua believe, is why *kawakawa* is plentiful there. Later, a deity from Beqa named Moro caught wind of Neiori's beauty and set out to impress her with gifts, including a precious rock and yams. Neiori accepted the rock with affection but had no interest in the yams. This choice led to a belief among Yadua villagers that yams cannot be cultivated by the people of the village, attributing this to Neiori's preference. The rock offered by Moro became her favourite sitting spot, providing a clear view of the ocean and highlighting the relationship between *kawakawa* and rocky areas. This story not only signifies the importance of *kawakawa* in Yadua's culture as their totemic fish but also emphasizes notions of resource stewardship, love, and community bonds. Further, the story points towards the symbiotic relationships between flora and fauna, and the signals of those interrelationships provided to the people of Yadua. Thus, Neiori's legacy continues to foster a harmonious relationship between the people of Yadua and the sea.

“Once the *vau* plant (sea hibiscus) has fully bloomed, this is a sign that the female *kurukoto* fish is now in the *qoliqoli* for spawning and male *kurukoto* fish aggregates in the mangroves for feeding. Or if the roots of the *rara* plant (a type of grass) turn red (or sometimes orange) this tells me there is an abundance of *quita* (octopus).” **Koro, 47 – 53 years old; female [19 June 2023]**

Many traditional practices, like reading nature's signs, are now at risk due to plastic pollution, especially in the sea. The village struggled to handle its waste for a long time because using the nearby Sigatoka landfill was very expensive. Initially, the village came together to raise funds for constructing concrete incinerators for open burning. These were set up throughout the village, but it turned out to be a poor solution. The incineration sites started attracting pests and flies, and the smoke and fumes from the burning and the Sigatoka Landfill became a significant concern. Over time, informal dumpsites popped up close to the coast and near the official landfill, drawing more villages due to their easy access. However, these unmanaged sites led to waste spilling into the *qoliqoli* areas. As a result, the village of Yadua faced increasing challenges from marine pollution including increased risk of injury:

“We would walk out to the reefs during low tide to go and catch octopus or throw our lines to fish, and we were finding more plastic waste entangled on the corals.” **Unaisi, 32 – 37 years old; female [20 June 2023]**

“I have been fishing for over 70 years now. I don’t go out as often as I used to, you can see I have aged. I took a break from fishing one time because I was afraid of getting wounded because all the waste was now in the sea sand, and some of it was sharp. Then one tourist came to the village I saw wearing shoes for the ocean (reef shoes), and so I saved some money my son gave me so I could buy those shoes and can go out again.” **Sova, 80 – 85 years old; female [21 June 2023]**

In recent years, the people of Yadua Village have decided to raise money annually to fund their community projects and initiatives. One of these community initiatives was to purchase their waste truck, including a wage for members who would operate the truck and collect the village waste. Funds are also set aside to cover their annual fees to access the Sigatoka landfill to dump

their waste. However, the issue of plastic pollution has not been fully addressed despite the community's willingness and initiatives.

“When there is heavy rain, we can see waste carried into our *qoliqoli*. I believe it washes in through the Sigatoka River and it spreads across the coast. We have fresh water sources, too, and we are concerned about how flood waters can enter them. After a heavy rain, the water colour turns brown, so we don't go out fishing. This discolouration is called *lodave*”. **Mako, 53 – 57 years old; male [21 June 2023]**.

“When walking along the beach, you will find noodle wrappers and diapers, those are the main types of waste we see. And sometimes tyres. These plastics are always there on the beach, even after a clean-up, more will be deposited there.” **Pita, 18 – 23 years old; male [20 June 2023]**

Other profound community-led initiatives include making all households “smoke-free”, meaning that cigarette smoking is discouraged, even in community halls. This was a response to awareness programs carried out by the Ministry of Health.

“If there is awareness given to the village from outside, especially to help us participate in the recycling of plastics and things like that, we will definitely do it”. **Vonu, 48 – 53 years old; male [21 June 2023]**.

“We would like stakeholders like government, NGOs or training institution that can provide training and awareness on proper plastic waste management and how the local communities can incentivize waste management through PET recycling initiatives. This way more villagers will join the fight against plastic waste pollution”. **Diana; 55 – 60 years old; female [21 June 2023]**.

Every week, the community comes together for village clean-up. This is a decision made by the village elders (*bose ni liuliu*). All organic waste is taken to the concrete incinerators for burning and the inorganic waste is collected in the garbage truck and later taken to the Sigatoka landfill.

In the Yadua village, there were also waste pickers who would pay a monthly fee to use the Sigatoka landfill for scavenging. Many of the items that were in working condition were

collected, cleaned, or fixed, and then resold. Waste picking can be a lucrative practice for some villagers who may make a weekly living for their families. However, the fees to access the landfill can be difficult to cover, particularly if they want to do waste picking for the first time. In addition, the management of Sigatoka landfill also does not take any responsibility for the conditions or safety of waste pickers that work in the landfill.

“[As a waste picker] there are times when we receive news that some big companies have disposed their products and merchandise at the [Sigatoka] landfill, so I would take my children [who are now adults with their own families] with me and we collect [the discarded items] and bring it back here. They [the products] are still good. Some look new. We were even to furnish one of our [family] homes.” **Una, 61 – 66 years old; female [21 June 2023]**

“Some of the items we find still have the [price and brand] tags on them. Someone told me it’s discarded due to insurance purposes so they can’t just give it away. We collect it, like the sarees, clean it if it needs cleaning, and then people travel from different towns to come and buy the items from us at a much lower cost.” **Oli, 35 – 40 years old; female [21 June 2023]**

“I used to do waste picking before with my daughter, but not anymore. It’s not safe, because of all the sharp objects. And if there is burning, it can burn with smoke for many days. So, as I get older it’s not safe to do that [waste picking] anymore.” **Sela, 52 – 57 years old; female [21 June 2023]**

While it was not clear from the Talanoa how many villagers engage in waste picking, for only a minority this activity constitutes their primary source of livelihood, while for others, it serves as an ancillary pursuit. All known waste pickers engaged through this research were Indigenous, and predominantly females.

### **Galoa Village [Serua Province]**

In the village of Galoa, the people had just installed a new young chief who quickly set up village regulations concerning the management of village waste. Waste bins were set up throughout the whole village so that people would commit to disposing of their waste responsibly.

“You can see from the last time you came to the village (for the scoping exercise), that there were no bins around the community. ...One of the first things that was implemented recently was waste bins because it was a big problem. We also now have a village curfew for all school children and other rules that the elders put forward.”

**Tama, 48 – 53 years old, male [26 June 2023]**

In the past, the village had a problem with waste management, as waste was mostly buried in two main areas of the village (near the foreshore and at the back of the village). It was difficult to maintain these areas while ensuring that children were not playing near these sites because a playground was situated beside the foreshore dumpsite. Parents noticed some of their children contracting scabies on their skin and believed it had a lot to do with the dumpsite.

“Before when the dumpsite was still being used, we had children sometimes playing near the site. Even the old [dump] site behind the village, people from other villages or even people driving past on the roads would also dump their waste there... I noticed that my child started getting sores and I think it was from the dumpsite because it was near to where they played. Now it’s gone and I don’t see the [skin] problem anymore.”

**Kelera, 45 – 50 years old, female [26 June 2023]**

Another uncontrollable issue was the number of plastic bottles left behind by tourists during village tours by hoteliers, which were stockpiled. To address these issues, the community closed the dumpsite and covered them up with topsoil. A village-run hotel construction will soon be completed and situated at the site of the foreshore dumpsite. The second dumpsite is covered with soil and will not be used any longer. Each household in the village now pays a community fee of FJD 20.00 per month so that the village waste can be collected and taken to the Naboro landfill nearby. The target is to fundraise a minimum of FJD 300.00 per month for a small business enterprise to collect the village waste and take it to the formal landfill. However, it was also explained that plastic pollution, for some villagers, exacerbates the already existing sanitary issues they face.

“The village also has other problems than plastics. Our drainage system is not good. Even for the grey water, you can see how household pipes go into the small drains. For some, it’s even the wastewater. It’s not hygienic, but these are all adding to the problem.



Now we have a *tiko bulabula* [health] committee to help the village fix the problem and work with the people to improve all of this” **Qalo, 29 – 34 years old, male [26 Jun 2023]**

Some of the women of Galoa also underwent training where they learned to craft adornments, and accessories and weave purses and bags using plastic waste wrappers and bottles, which are then sold during village tours when they arrive. The group is called “*Bulikula*” (named after a rare golden cowrie shell, usually worn as a badge of rank), where women are trained to repurpose up upcycle plastic waste, and it has even benefited some of the women personally with the money that the group generates.

“We have tourist visits here in the village and the [village] people perform the kava ceremony and [dance and singing] items. They [the tourists] used to be given these plastic water bottles to drink during the tour. But oftentimes, they leave it in the bins in the village, and it was piling up. Then a man came to the village to teach us how to make earrings, necklaces and wind chimes. All sorts of things. Now the ladies make it and sell it back to the tourists.” **Lani, 40 – 45 years old, female [27 June 2023]**

“I think it’s a good skill to learn [repurposing plastics into accessories] because I could make up to FJD 200.00 a day if there is a good sale, or sometimes maybe FJD 50.00 if it’s not a good sale day” **Vesi, 51 – 56 years old, female [26 June 2023]**

The money raised from the village initiatives is used to fund other village projects and continue the villages’ waste management. The village headman (*turaga-ni-koro*) hopes that by setting up bins across the village, people will begin to be more environmentally conscious and responsible with their waste. For many years, the village battled with marine plastics being washed up onto their shores with the changing tide. Before, they would just wait for the changing tides to take the waste with it, but now, the *turaga-ni-koro* has instituted weekly village clean-ups where all households are expected to participate.

“Many times, especially during high tide, you will see all this plastic waste washing up on the beach. But then when the tide goes, it takes the waste too. Before we used to just leave it be, but now we do clean-ups and make sure to collect the waste, including the

ones on the beach, even if it was not ours.” **Fili, 42 – 47 years old, male [26 June 2023]**

“In Galoa you will notice that the women take charge in most of the village activities. Because over the years when the women set course to undertake a project until the work is completed, and it is usually for the benefit and wellbeing of the village as a whole. At the household level, we support the women in the household waste management project which began in 2019. We have seen that this has really helped the village in proper household waste disposal and in supporting this project we provide financial assistance to be able to access the municipal dumpsite”. **Vitalina, 37 – 42 years old, female [27 June 2023]**

The men clean the village compounds, the youth clean the foreshore, and the women clean the households and prepare a community luncheon. After a hard day's work, everyone sits and enjoys a meal together in the village hall.

“In the past, our elders used to have a practice of ‘*were ni koro*’ (village clean-up), so this [village clean-up] is not a new practice, it was there before but had stopped, and I want to revive the ways of our elders.” **Waqa, 44 – 49 years old, male [26 June 2023]**

“Every Tuesday, the whole village comes together for a clean-up. It is made compulsory by the new *turaga ni koro*. I’ve noticed a big difference. The village is split into 4 sections: (i) Beachside, (ii) Middle East, (iii) Roadside, and (iv) Boundary. Then on Wednesday is the waste pick up every week at 7 am”. **Lote, 67 – 72 years old, male [27 June 2023]**

As a researcher, I was privileged to experience this day of clean-up with the villagers and later share a meal with them in the community hall. While it is challenging for the village to deal with plastic waste, especially when it is not from the village but from other areas and washes up onto their foreshore, the people are now taking a stand to reclaim their land and ocean and rid it of the toxic plastics that have caused them many issues in the past.

“Now when I go out fishing, I notice that there are clothes, diapers and plastic wrappers like noodles and biscuit packets out in the ocean, even tin food and straws. Sometimes

I see fishing lines and fishing nets; the ropes for the boat, people just throw into the ocean. It's not very good.” **Wise, 55 – 60 years old, male [27 June 2023]**

“In our village, whether the people agree or disagree on anything, we have the mindset of ‘*Raivakoro*’. It’s a practice for women and the nurse to enter households and discuss ways of improving living standards in their respective homes... But as a village, whatever happens, the village comes first no matter what”. **Leba, 33 – 38 years old, female [27 June 2023]**

The people of Galoa village are well mobilised and support the wisdom and vision of their *turaga-ni-koro* in his intention and plans to uplift the wellbeing of the village and his people.

### **Silana Village [Tailevu Province]**

Even though Silana village was the most remote location of all the three study sites, it has been able to transform itself into one that is very forward-thinking. Approaching the district of Dawasamu in which Silana village is located, it is hard to not notice informal dumpsites that are unmanaged, and often burning. However, Silana has had a complete shift towards better waste management. This is because within the community is an international non-governmental organisation (INGO) called Global Vision International (GVI) that is permanently based there and runs education, social empowerment, human health, and marine conservation community programmes. The INGO also has an early childhood education program in partnership with the Fiji Ministry of Education based in the village hall. The INGO set up ‘waste recycling stations’ in 2020 where households would sort their plastic waste according to its labelling of recyclability.

“We are very grateful to GVI because they run this whole [recycling] program that we participate in, and they pay for everything. They cover the fee to access the landfill [FJD 300.00] and pay for transport to take the waste.” **Tina, 43 – 48 years old; female [5 July 2023]**

Every month, the INGO pays to collect all the sorted waste and take it to the city where recyclable and non-recyclable waste is brought to their respective locations for processing. These locations were unknown to the villagers, nor were they disclosed to the research team by the INGO. Like Galoa, Silana village also has community bins situated around the village

boundaries for the villagers to use. Every week during community clean-up, the villagers empty these community bins accordingly at the different recycling stations. Organic waste is taken for compost in the plantation areas or are buried. The INGO also carries out community-based awareness programs through their various funded projects and initiatives.

“We have been told [by GVI] about how solid wastes like plastics affect marine resources and the importance of waste management and proper disposal” **Vili, 57 – 62 years old; male [5 July 2023]**

However, the communities have no control over what happens out at sea. Villagers shared their experiences how the state of their *qoliqoli* is changing due to anthropogenic activity and raised concern about what this could mean if nothing is done to address these issues.

“We have witnessed plastic bags, plastics bottles and food wrappers when we go out fishing. Now what’s becoming common in this area are the big ten-wheel tyres, the ropes from big fishing vessels, and damaged buoys which has caused a lot of problems for our marine ecosystem. I’m sure these items and its chemical make-up could have detrimental effects to our marine environment and possibly why fish are no longer found around this area”. **Ana, 33 – 38; female [6 June 2023]**

“Fish caught in our fishing ground tastes different now because of the quarry residues that are washed out into our *qoliqoli*. We go further out to fish and once on our fishing trip, I was out fishing near the Vatu – I – Ra passage when I witnessed a ferry vessel dump huge ropes out into the sea”. **Jale, 55 – 60 years old; male [6 June 2023]**

The village elders have implemented several rules regarding how plastic waste in the village is to be disposed of. Like in Galoa, women in Silana were trained to transform plastic wrappers into purses, and bags, including accessories like laptop and iPad casing, which they sold to members and volunteers of the INGO to generate money to finance community events and activities.

“We [the women] have stopped making it [repurposing plastic items] for a few years since the pandemic, mostly because our waste management has improved [these plastics are diverted straight to the landfill], but we used to make all sorts of products from plastic and sell them” **Sera, 44 – 49 years old; female [6 July 2023]**

One of the major problematic practices some community members engaged in the past was cooking in open fire using plastics as fire starters and fuel. The lack of awareness around the toxicity related to plastic fumes and human health exposed people to this practice for a long time. If it were not for community awareness of the dangers of burning plastics, this practice may have persisted to this day. Open burning of plastics around the community [incinerators] is now prohibited in Silana.

“In some households, they still burn plastics with wood for cooking. But that is at the household level and only for a few, I think. We can’t monitor everyone in the village, as you may realise, awareness is not the same for all people”. **Toni, 48 – 53 years old; male [6 June 2023]**

“There was this old man who was part of GVI, and when he was here, he used to walk around the village telling people to stop burning their waste...because it was bad for their health” **Roko, 55 – 60 years old; male [6 June 2023]**

After extensive Talanoa between the research team and the village elders, it became clear that the community were not aware of microplastics and the potential harm that they pose to fishes and shellfishes, including the direct or indirect health effects they may have on people if left unaddressed. The village elders discussed what more they could do to ensure that the village was not directly contributing to the problem. At the end of the meeting, it was agreed by the village elders that the village would have a meeting to pass a customary law that by 2025, no plastics should be brought into or circulated in the village by its people and that any plastics brought into the village by outsiders would have to be taken back by them when they leave. Silana Village wishes to be established as the first plastic-free community in Tailevu, if not, in Fiji.



## Discussion

### Dimension 1: Distributional Equity

The dimension of distributional equity looks at the fair distribution of environmental costs and benefits among communities to ensure that no particular group, especially marginalised groups, are disproportionately affected by environmental issues such as plastics pollution while ensuring that the benefits of environmental policies are equally accessible to all <sup>10,51</sup>. It is estimated that a staggering 2 billion people in low and middle-income countries (LMICs) lack access to solid waste management, including formal sanitary landfills and recycling services, giving them little to no other option but to dump or burn their plastic waste <sup>52</sup>. Through a distributional equity perspective, the research reveals significant disparities in the distribution of environmental burdens and the resources available to manage plastic pollution impacts. In Yadua village, the community is situated 1.5 km to the Sigatoka landfill. While its proximity has served as one benefit for waste pickers nearby, its benefit does not weigh nearly as much as the problems it creates for the villagers, particularly with the toxic fumes released during burning, the leaching of toxic chemicals and additives into the soil and water ways <sup>53,54</sup>. The most worrisome problem is the effect of chemicals linked to plastic waste. Many chemicals found in plastic, like Bisphenol A, phthalates, and flame retardants, are added to enhance its features <sup>55</sup>. Unfortunately, these substances harm both human and animal health, primarily disrupting the endocrine system <sup>56</sup>. Toxic monomers – components of these chemicals – have been connected to cancer and reproductive issues <sup>57</sup>. In the environment, there is also a problem of the plastic waste, particularly legacy plastics, that is transported into the coastal marine environment where it disperses with the wind and waves <sup>58</sup>. Just as plastic waste is transported on the ocean's surface and from the sea to the shore, it can also move vertically. When microorganisms, plants, or algae cling to plastic debris, they make it heavier, causing the plastics to sink eventually <sup>59</sup>. The problem faced by some local fishers in preventing the risk of injury from hard broken plastics embedded in the sea sand, or entangled ropes and nets, by choosing not to go fishing until ideal options for safety gear or footwear is available, increases food insecurity. The distribution of burdens under several circumstances for these Indigenous communities facing significant environmental health risks due to decisions made outside of their direct control is unsafe, unsustainable, and inequitable. The countries in the Pacific, like

Fiji, are ill-equipped to handle plastics pollution, and the small efforts in national policy and legislation have had very little impact on the harmful effects to their fisheries sector on which a vast majority depend upon for their livelihoods. National policies need to prioritise preventative measures on plastics, ensuring strict product criteria around essentiality, safety and sustainability in order to enhance the security and welfare of the people, and support grassroots efforts. On the local level, efforts by the village to address waste, such as fundraising for waste collection and landfill fees, show Indigenous communities attempting to distribute the burden of waste management more equitably within their means, without any assurance that the long-term efforts will pay off. Unlike most coastal and rural villages, the burden borne by these villages from the impacts of plastic pollution catalysed their call for preventative measures, better waste management options, systems, and services.

In Galoa and Silana village, marine plastic pollution from inbound flows of plastics (transboundary movement) has created similar problems for the people, particularly with local fishers. Irresponsible dumping of fishing gear (known as ghost gear) exacerbates the challenge of removing legacy plastics from the marine environment. Despite progressive efforts to manage household waste and control littering in the villages by installing waste bins and having regular community clean-up activities, transboundary plastics in their marine environment and tourism has placed additional burden on the people, particularly in terms of financial contributions, time, and effort to proactively manage and remove the waste. The implication from past and present waste disposal methods, like those in Yadua and Galoa village, suggests that individuals living near or exposed to dumpsites, along with toxic fumes, pests, and diseases, must deal with or recover from the health issues caused under those conditions. In certain study locations, it is not only households that use plastics for fuel; it was noted that individuals selling roadside BBQ or preparing lovo often use plastics along with firewood. This is because plastics are highly flammable and can decrease the time it takes to heat the cooking apparatus. Exposure to open burning of plastics as cooking fuel is also a fundamental issue of health implications that increase the risk of morbidities<sup>60</sup>. Health organizations and advocates should amplify the message regarding the health risks of burning plastics, including the risks of cancer, respiratory issues, and other health conditions. Implementing regulations that discourage or prohibit the use of plastics as fuel in food preparation is also essential. This can increase public pressure against the practice and motivate change.

There is also great deal of concern over health and well-being of villagers engaged in waste picking and the risks posed to them through their work, like many other waste pickers in the country. In July of 2023, FijiVillage News reported that over a thousand people in Fiji have identified as waste pickers [472 females and 570 males], with 675 being fully dependent on waste collection as their primary source of income<sup>61</sup>. It is also reported that 47% of waste pickers are over the age of 55 years old<sup>62</sup> and often face the stigma of working as waste pickers<sup>63</sup>. The Fiji Times also described the plight faced by waste pickers in Fiji, with one allegation of a waste picker having to engage in sexual activities just to be allowed into dumpsites to collect recyclables<sup>64</sup>. Improved conditions, rights and safety of waste pickers are in significant need of national regulation and recognition, formalising their labour into proper employment standards, with the rights and safety work conditions associated with it.

The village of Silana has been able to ease the burden of poor waste management through their partnership with GVI, including the financial costs associated with collection, removal, and recycling. Yadua village oppose the creation of more landfills, given their current experiences of its harmful impacts on the environment and communities if it not properly regulated and operated. The discussion for the relocation of the Sigatoka landfill away from the coastal environment has been in deadlock with landowners for many years because Indigenous communities do not wish to have all the solid waste dumped on their land. Indigenous landowners in Tailevu Province, like in Silana village, has also resisted the idea of a landfill being formally established on Indigenous landscape, similarly to Yadua and their experience. The resistance to more landfills reflects a concern for environmental justice, ensuring that communities directly affected by waste facilities are not disproportionately burdened by their presence, arguing that landfill siting decisions should consider the equitable distribution of waste management facilities and address the potential health and socioeconomic impacts on nearby communities. The push to have larger landfills in more centralised locations is also met with resistance largely because there is a growing lack of physical space on the islands. In addition, Indigenous groups and financially impoverished communities are being victimized for improper waste disposal while larger global polluting industries manage to avoid any scrutiny around waste management. The corporations and nations who generate revenue from manufactured goods with plastics have very little interest in ensuring a responsible and long-term plan is in place to ensure the safe and sustainable end of life management of plastics in

smaller island nations lacking the facilities nor the finances to ensure their people, land, and oceans are not compromised.

To enhance distributional equity, there needs to be a greater focus on:

- Ensuring that waste management facilities and practices do not disproportionately impact communities, particularly those that are already vulnerable or marginalized.
- Supporting community-led initiatives and waste pickers, with funding and technical support to reduce their financial and human health burden Indigenous and improve and protect the labour conditions and rights of waste pickers.
- Developing partnerships between villages, government, NGOs, and the private sector to share the responsibilities and benefits of sustainable waste management practices equitably.

## **Dimension 2: Procedural Equity**

Procedural equity typically refers to the fairness in processes and procedures when formulating environmental action and policy ensuring that all stakeholders have a say in the development of environmental policy and action plans <sup>65</sup>. Marginalised and Indigenous groups around the world are more than often the ones excluded from environmental consultations at a higher level of policy discussions where their opinions should matter the most <sup>66</sup>. The lack of capacity building and technical support places these groups at a disadvantage towards making more meaningful contributions towards plastics pollution management <sup>67</sup>. Within Fijian villages, procedural equity is well embedded within the Indigenous customary protocols. It can even be seen on a broader level such as a district. The study highlighted the establishment of several village committees (Figure 2) that include all demographics and are socially constructed based on every aspect of village welfare: healthcare, education, decision-making, religion, women's group, youth groups, village sanitation, and marine conservation.

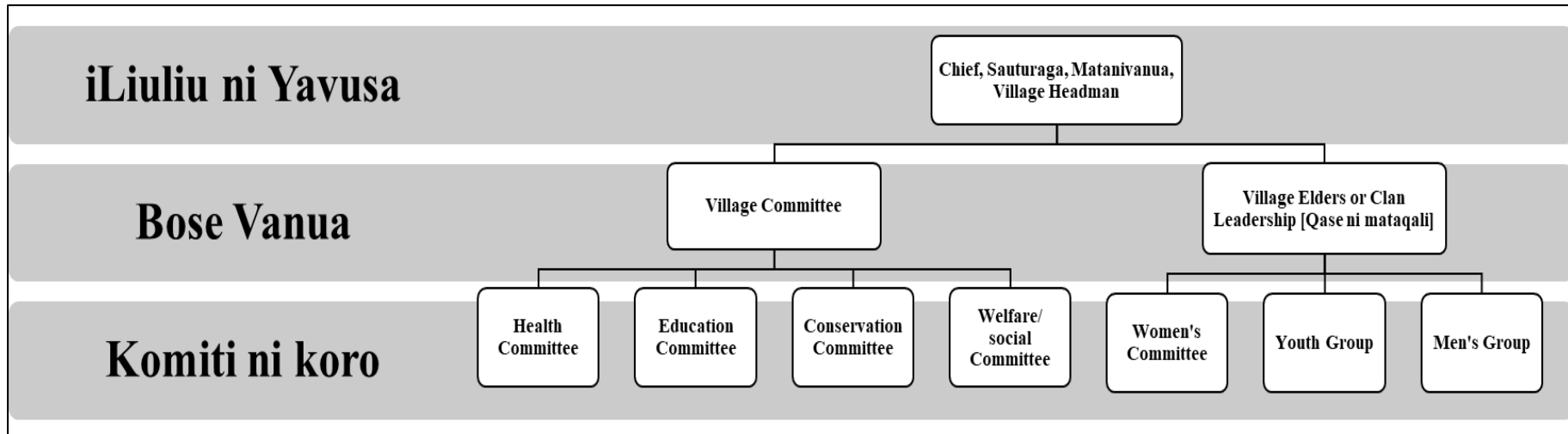


Figure 2: Village Governance Structure for study areas



Community consultation for most village settings like Yadua, Galoa and Silana is common, with consultations beginning in small groups or committees. Outcomes and recommendations are taken up to a village committee meeting, or an entire village gathering in some instances, to discuss matters brought before the village committee or the village leadership (in some cases they are the same elders presiding over both). Whatever decisions are made in the *bose vanua* are then reported to the village chief or village headman who will enact on the decisions. It is not common for a chief to overrule the decisions or outcomes of the *bose vanua*, unless in their own wisdom, decides it will not be beneficial for or in the best interest of the Vanua. There are several examples of the community-led initiatives being spearheaded by the various village committees, who are supported by the leadership. For decisions to be enacted by the *iliuliu ni Yavusa*, it is first enabled by the same committee group that initially proposed the idea, mostly through fundraising and community mobilisation. Therefore, any community initiative that is proposed by a committee group usually gets leadership support because any funds needed to operationalize the project or initiative is pushed through by the group that conceived the idea. This particular form of procedural equity at the grassroots levels is necessary to ensuring that people across the board has a say in matters concerning the welfare of the village, and that they are able to build a relationship amongst other village members who can share in the transformational change brought about by the initiative or project outcomes.

Waste, especially plastic waste pollution, is often termed “waste colonialism”<sup>68,69</sup>. This label comes from the practice of high GDP countries dumping their waste in low GDP countries. Additionally, it points to how capitalist production and consumption habits create waste. Procedural equity at the grassroots level refers to fairness and inclusiveness in decision-making processes that directly impact local communities. It emphasizes equal participation, transparency, and accountability. Various views in scholarly writings point out that colonialism is unjust because of political control, cultural enforcement, and exploitation. To address this issue adequately, especially in relation to plastic waste, it’s vital to thoroughly investigate these factors. Understanding the problem completely is key to finding a solution. This requires hearing the perspectives and experiences of the impacts of plastic pollution at the grassroots level. Policy dialogue at the lower levels can facilitate meaningful change and the development of equitable and inclusive solutions that are context and situational-specific in its holistic approach (Figure 3). Procedural equity focuses on “gathering all relevant information”,

including through involving relevant stakeholders and promoting transparency, during procedures<sup>70</sup>.

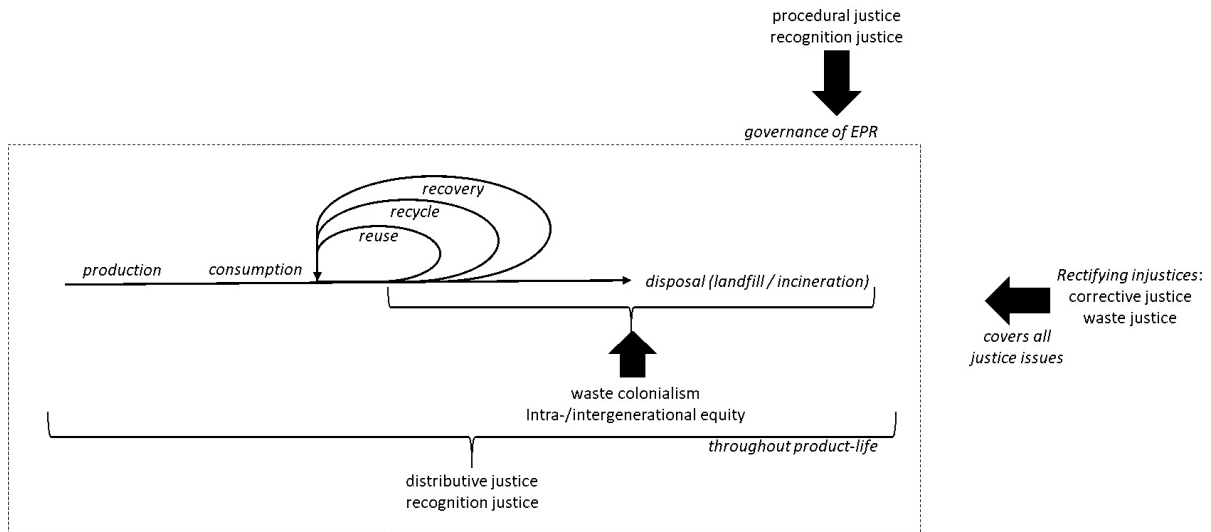


Figure 3: Dimensions of product life-cycle adopted from Steenmans and Malcolm<sup>71</sup>.

Launched in 2010, the Pacific Oceanscape Initiative<sup>72</sup> sheds light on the significance of procedural equity in ocean policy and pollution management within the Pacific region. It emerged as a response to the increasing concerns over oceans governance issues, including concerns on marine pollution in the Pacific Ocean. The initiative emphasizes the need to involve stakeholders from the most remote countries facing unique plastic pollution challenges. Owing to the limited resources and constraints of the Pacific Island nations, this initiative's approach enables Pacific Island nations to actively engage in crafting agendas and policies for environmental protection, which may specifically target pollution and waste management. The sharing of resources and collaboration at various levels of stakeholder management demonstrates the value of procedural equity in bolstering the Pacific's sense of ownership and enhancing cooperative efforts towards better pollution and waste management. The study demonstrates how traditional institutional transformation to address issues like plastic pollution is needed, and can be successful when wider community consultations, external partnerships, and fair open dialogue at all levels are involved throughout the procedural processes. Procedural equity enhances awareness and empowerment amongst people, driving them to reclaim their Indigenous territorial spaces and strive for socio-ecological restoration from the impacts of plastic pollution and poor waste management.

### **Dimension 3: Recognitional Equity**

Recognitional equity emphasizes the need for cultural inclusivity and diversity, valuing traditional knowledge and the perspectives of Indigenous communities in environmental and sustainability discussions<sup>73</sup>. Indigenous Peoples often have a profound connection to their land and water, rooted deeply in their cultural practices and traditions. This connection is supported by their awareness and responsibility towards the environment, maintained through the transmission of traditional ecological knowledge—a cornerstone of their identity<sup>74</sup>. It is crucial that the insights and contributions of Indigenous people are respected and included in all stages of environmental consultation and decision-making<sup>75</sup>. The people of the study areas are in tune with their environment and the natural signs and signals of changes that govern their daily lives and activities. In the village of Yadua and Silana, mat weaving is a common practice for many women. They have utilised that knowledge and applied it to waste management practices by upscaling and repurposing to prevent the amount of plastic waste that ends up in the landfill.

In many small villages, the challenge of effectively managing waste looms large due to increasing volumes of incoming wastes, limited land capacity and limited accessibility to ideal waste management systems. This difficult situation often leads to overburdened landfills, which not only harm the environment but also affect the quality of life for the village inhabitants. However, the introduction of innovative, albeit temporary, solutions has begun to alleviate the stress of dealing with waste in these regions. Through such innovative methods, these communities are finding temporary relief from the ongoing issues posed by overflowing landfills<sup>76,77</sup>. One positive aspect of these innovative solutions is the opportunity for collaboration with waste pickers. Waste pickers, who are individuals that collect reusable or recyclable materials thrown away by others to sell or repurpose, play a vital role in waste management in many parts of the world. By partnering with these workers, villages can more effectively sort and repurpose materials that would otherwise contribute to the growing piles of waste in landfills. Not only does this help reduce the volume of waste, but it also provides waste pickers with a source of income, making it a mutually beneficial arrangement. These partnerships are instrumental in fostering a culture of reduced wastefulness and promoting creativity in product design and reuse. Through concerted efforts, there is a significant push to reintroduce disposed plastics and other materials back into the market, hence alleviating the issue of these items reaching their end-of-life and merely adding to the environmental burden.

This approach not only tempers the immediate impact of waste but also encourages a broader, more sustainable way of thinking about product life cycles and recycling. By finding innovative uses for materials that would otherwise be destined for incineration or landfill, these solutions help to temporarily suspend the environmental toll of waste disposal, thus contributing to a more bearable management of resources in these village settings, and stimulating their local economies through the development of substitutes.

Pacific communities offer sustainable solutions that have been used long before plastic became common. Initiatives led by Indigenous peoples, such as the Māori-led zero waste program (Parakore), demonstrate how embracing traditional environmental views can inspire changes in attitudes and behaviours toward plastic pollution and waste management. Recognizing the significant value that Indigenous groups worldwide place on water and land shows a deep-rooted commitment to maintaining a clean and healthy environment for the continuity of life on Earth. By incorporating this rich knowledge and innovative waste reduction practices at a national level, and by working together with governments and corporations, we can create policies and programs that effectively address plastic pollution from the ground up. The work of Manglou, et al. <sup>78</sup> points out a notable issue of recognitional equity, showing how certain French territories like Ndzwani, Reunion, and New Caledonia have applied France's waste management policies without local and Indigenous involvement. These policies often neglect Indigenous cultures, traditions, and their connection to the environment, and instead of adopting an inclusive approach to tackle increasing waste challenges and landfill overflow, Indigenous groups, like the Kanak, face blame for broader waste issues despite their deep environmental respect and connection. Ensuring recognition equity means not only valuing Indigenous peoples' environmental practices and traditions but also supporting inclusive and effective solutions to combat plastic pollution and waste management on a global scale. Recognizing and appreciating the distinct cultural, social, and economic conditions of each Fijian village is crucial for achieving fairness. This means blending traditional wisdom and local projects into comprehensive environmental plans, making sure they receive the support, respect, and recognition they deserve. Through this approach, we can create solutions to plastic pollution that are more inclusive, effective, and sustainable, while respecting the dignity, rights, and efforts of every community member.

#### **Dimension 4: Contextual Equity**

Yadua Village faces a tough battle with plastic pollution due to its location near a landfill and its dependence on fishing for both its economy and culture. The key challenges include health dangers from landfill fires, harm to marine life vital for villagers' income, and the preservation of cherished cultural traditions linked to the environment. Finding fair solutions means acknowledging these specific difficulties, aiming to protect the village's health, way of earning a living, and cultural legacy. Actions could include improving waste management in the landfill areas to keep pollutants away from coastal areas as it infringes and impacts customary fishing grounds and sacred ecosystems. Gray-Cosgrove, et al. <sup>79</sup> estimate that 92% of all plastic produced ends up in both the terrestrial and marine environments. Further research by Villarrubia-Gómez, et al. <sup>80</sup> discusses the lifespan of plastics, illustrating that they never completely exit the environment. Instead, over time, plastics break down into physical and chemical forms that can release toxic waste into the soil and our water sources. This pollution is then ingested by a variety of species, which are themselves consumed by humans. For fishing communities like Yadua, Galoa and Silana, exposure to plastic ingestion is becoming a growing concern amongst the people.

Galoa Village, under their community leadership and governance structure, has actively worked to tackle waste s, highlighting the power of strong community bonds. The efforts here, from setting up waste bins to organizing collective cleanups, underscore the necessity of recognizing and harnessing the village's ability and will to unite for change. However, addressing wider systemic issues, like enhancing waste disposal facilities and services at affordable rates for the village, is also crucial. In Silana Village, the support from an international NGO has helped make significant advances in waste management and strive towards a plastic-free village. The NGO's help brings in not only resources and knowledge but also concerns about how reliant the village might become on this external aid. Here, equitable measures would ensure the village can maintain these efforts on its own while looking at larger systemic reforms needed to foster waste reduction and recycling in secluded locales. These case studies underline how vital it is to consider specific local circumstances - embracing cultural, economic, environmental, and social elements - when tackling plastic pollution in Fiji. It is about crafting tailored strategies that respond to each village's unique situation. The Pacific Regional Declaration on the Prevention of Marine Litter and Plastic Pollution <sup>37</sup> is a

demonstration of the joined determination of Pacific Island nations to address the pressing issues of plastic pollution within the regions distinct ecological and cultural settings. This Declaration is seen as a pivotal move in the direction of a coordinated regional effort to fight against marine litter and plastic pollution. It symbolizes the joint endeavours of Pacific countries to tackle plastic pollution through collective action, emphasizing its shared understanding of the critical levels of plastic pollution in the Pacific Ocean and its harmful effects on marine organisms, human health, and regional economies. Pacific Island countries like Vanuatu, Solomon Islands and Fiji have slowly progress towards prioritizing information gathering about marine plastic pollution. They are doing this in hopes to create ambitious policy implementation measures through mechanisms such as national plans and policies aimed at preventing marine litter and plastic pollution and its impacts. Data collection is crucial for urging Pacific nations to reduce plastics imports and to make big companies, which have the money and skills, responsible for managing and safely disposing of plastic waste. These efforts show the Pacific region's commitment to protecting the environment for future generations and ensuring that the main contributors to plastic pollution are held responsible for creating a more sustainable and healthier world for the coming generations of Pacific Islanders. Efforts to combat plastic pollution in Fiji must be contextually equitable, ensuring that solutions are designed and implemented in ways that are sensitive to the specific circumstances of each community. This approach can enhance the resilience, sustainability, and fairness of environmental management practices, ensuring that all communities can thrive in a healthy environment.





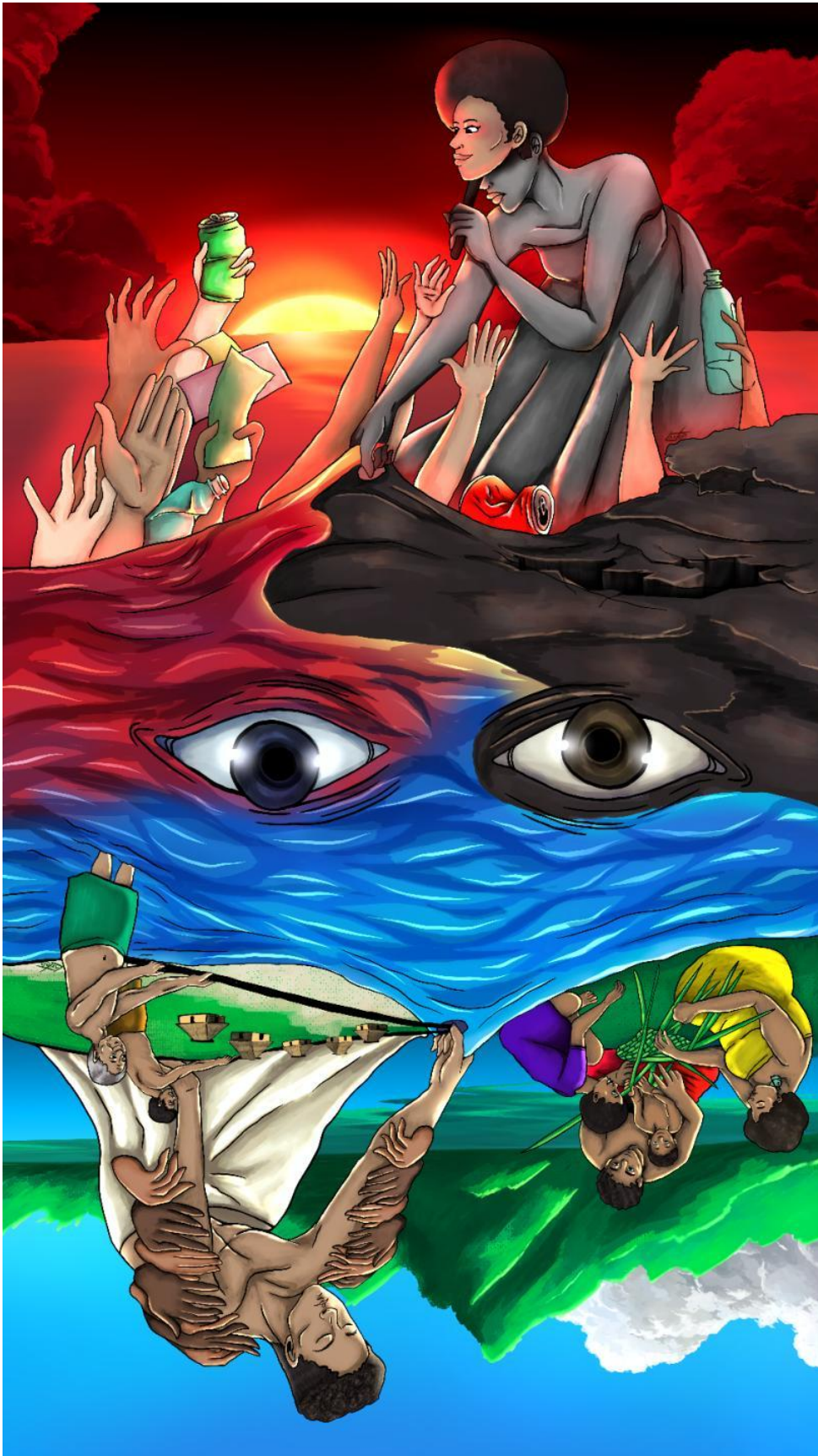
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## Conclusion

Integrating Ratumaibulu's story through an equity lens in environmental policies brings to light the essential convergence of traditional lore and modern environmentalism. It posits that coping with challenges like plastic pollution hinges on our collective ability to intertwine equity, cultural reverence, and sustainable intentions—teaching us that our actions today dictate our relationship with the surrounding world, akin to Ratumaibulu's narrative legacy. This report illuminates the pervasive and deeply ingrained issue of plastic pollution, viewed through the nuanced lens of its impacts on Indigenous communities within Fiji - the residents of Yadua, Galoa, and Silana Villages. Not only does the investigation foreground the multifaceted nature of the challenges imposed by plastic pollution on these communities, but it also emphasizes the broader implications pertinent to equity, environmental sustainability, cultural preservation, and socioeconomic well-being.

Central to our findings is the discernment that plastic pollution transcends environmental degradation, permeating the socio-cultural fabric of Indigenous communities and undermining the integrity of sacred ecosystems upon which these communities depend for livelihood security and the sustenance of their cultural traditions. The Indigenous knowledge systems and communal stewardship practices found within these communities, though severely threatened by the impacts of plastic pollution, also serve as a beacon of resilience and a potential avenue for innovative, sustainable solutions by upscaling and amplifying these values and processes at higher levels of policymaking and design.

Importantly, this report reveals the imperative need for equity-based frameworks in addressing plastic pollution, compelling us to consider not only how burdens are disproportionately placed upon marginalized communities but also how solutions must be engineered to facilitate participation, recognition, and contextual adaptability. Distinct challenges faced by the populations of the study locations signal a broader call for change. From Yadua Village grappling with landfill overflows, to Galoa Village's innovative but limited ability of community self-regulation, and Silana Village's dependent yet opportune partnership with external NGOs, the narrative crafted is one of urgent call to action ensconced within practical possibility.

The implications of our findings stretch far beyond the geographical confines of Fiji, gesturing towards a need for regional and global governance frameworks that empower Indigenous and

localized responses to plastic pollution while ensuring transparency and accountability at the sources of plastic production. Through documenting specific, locally led initiatives, our study reveals the profound capacity of Indigenous knowledge and community solidarity in fostering not only local resilience but also offering templates for broader, scalable interventions.

The path forward, as guided by the observations and insights within this report calls for an integrative, cross-sectoral approach involving governments, academia, civil society, intergovernmental organizations, and multilateral financial institutions. This collaborative stand necessitates aligning policies, research, advocacy, international cooperation, and funding towards strategies that are environmentally sustainable, culturally cognizant, and socially equitable. A critical aspect of this approach lies in elevating and integrating Indigenous voices and wisdom into the heart of global environmental discourse and decision-making processes. Ending the abstract discussions and moving towards tangible action in preserving our global commons requires learning from these frontline communities who live the impacts of our collective consumption.

This report amplifies the pressing issue of plastic pollution but also maps out the possible pathways for a global response through principles of equity, participation, and recognition of Indigenous values and ecological knowledge. It is an urgent call towards reimagining connectivity not only amongst humans but also with the very ecosystems that nurture life - reminding us that the battle against plastic pollution cannot be won in isolation but through a symphony of collective, informed, and compassionate efforts spanning all corners of the globe.

## Recommendations

Based on the comprehensive examination of the impacts of plastic pollution on Indigenous communities in Fiji, the report suggests several targeted recommendations aimed to foster an equitable, informed, and community-centric approach to addressing and mitigating the effects of plastic pollution:

### Recommendations for Governments:

- Implement policies that significantly reduce non-essential plastic production and consumption and encourage the development and use of safe, sustainable, and essential alternatives and substitutes.
- Strengthen regulations around waste management infrastructure to prevent landfill overflow and contamination of Indigenous territories.
- Include Indigenous Peoples, and local communities in decision-making processes concerning environmental legislation and policymaking in meaningful and fair partnerships and participation.
- Support community-led waste management and pollution mitigation projects with funding, capacity building, technical guidance, and legal frameworks.
- Create and mandate stricter regulatory measures and standards on industrial sources of plastic pollution, including accountability mechanisms for pollution across borders.

### Recommendations for Academia:

- Conduct transdisciplinary research on the environmental, social, cultural, and economic impacts of plastic pollution on Indigenous communities.
- Promote interdisciplinary community and place-based learning, such as the immersion of field-schools, to build national capacity of university graduates, whose work may inform regional priorities in the longer-term. This facilitates enabling environments that can aid and empower Indigenous communities through service-learning models.

- Collaborate with Indigenous communities to document, preserve, and integrate traditional ecological knowledge in research on sustainability and environmental conservation.
- Develop educational curricula that incorporate lessons on plastic pollution, traditional ecological knowledge, and community-based environmental stewardship.
- Foster a collaborative research environment that prioritizes community needs and compensates Indigenous communities fairly for their contributions to research.

#### **Recommendations for Civil Society Organizations:**

- Advocate for the inclusion of Indigenous voices and knowledge in public discussions, policy-making forums, and negotiations on environmental conservation.
- Launch awareness campaigns to disseminate information on the impacts of plastic pollution and promote sustainable practices among the wider public.
- Support capacity building and empowerment of Indigenous communities to effectively manage plastic pollution and participate in environmental governance.
- Catalyse partnerships between communities, government bodies, and the private sector to launch large-scale clean-ups and waste management initiatives.

#### **Recommendations for Intergovernmental Organizations:**

- Facilitate international cooperation to address and mitigate transboundary plastic pollution [like trade], including plastic pollution from tourism, which impact Indigenous communities.
- Provide platforms for sharing best practices, knowledge exchange, and capacity building in sustainable waste management among member states. Enabling the inclusion of Knowledge Rights Holders in a fair and consistent manner in dialogues regarding policies and procedures signals a movement towards establishing the participation of Indigenous Peoples as a normative practice. This involves the integration of their concerns as fixed agenda items, the incorporation thereof into existing work plans, and allocating budget for specific deliverables.



- Offer technical and financial support for the creation of community-centred and culturally sensitive strategies for dealing with plastic pollution.
- Support efforts to include recognition and procedural equity in global agreements on pollution, waste management, and environmental preservation.

**Recommendations for Multilateral Financial Institutions:**

- Multilateral Financial Institutions should not fund or invest in upstream prospects that promote plastic production. Preventative measures are first, and foremost, essential in addressing the plastic pollution crises.
- Provide funding for infrastructure projects aimed at preventative measures and reuse, including return systems and reverse logistics/backhauling. For small island nations, there is a need to remodel and revamp existing waste management systems with more sustainable options to sanitary landfills, which currently poses health risks and environmental burdens.
- Prioritize investments in projects that aim to reduce plastic use, promote reuse systems, and increase recycling rates, particularly those initiated by or involving Indigenous communities.
- Support the development and scaling of innovative solutions to plastic pollution that are safe, environmentally sustainable, and socially beneficial.
- Promote financial models that encourage corporate responsibility and accountability in reducing plastic pollution and its impacts on national and international levels.



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## **APPENDIX 1: Regional Symposium Outcomes**

### **Session 1: Understanding the threats of plastic pollution on our Ecosystems.**

#### **Highlights**

- Plastic is a really complex pollutant. Its impacts vary based on size, types, and age of the plastic, affecting how it interacts with organisms and the environment.
- When plastics come into contact with corals, photosynthetic activity drops by 31-58%, halting enzyme activity and causing harmful effects like bleaching and disease.
- Although health research in the Pacific is limited, there is a need for a global monitoring program of plastic pollution to address data gaps and understand the increasing cases of health problems like cancer in the Pacific region.
- The greatest impact of plastic pollution in the Pacific is losing our connection to the land and ocean—a point that Western science must understand better.

### **Session 2: National and Regional Efforts to Address Plastic Pollution in the Pacific.**

#### **Highlights**

- Research work is vital to guide policymaking regarding plastics on a global scale. This involves organizing workshops, training sessions, webinars, and bilateral meetings with government officials.
- The Pacific is at the receiving end of plastic pollution and the GPT should equally prioritize those at the grassroots level, like Indigenous peoples and waste pickers.
- Risk assessment methodology should be annexed in the GPT to see which types pose high risk to the environment and human health.
- While Pacific nations have led the world in the transition away from plastics through legislative and policy change, larger and wealthier countries that can do more, should do more.

### **Session 3: A Global Binding Instrument to address Plastics Pollutions, including in the Marine Environment.**

#### **Highlights**

- Every year, almost 46 million tonnes of plastics are disposed of – 77% is categorised as waste.
- Harmonising policies at the global level can significantly help policy design, development, and implementation at the national and regional level, particularly for the Pacific Island Countries.
- Civil Society engagement is crucial to ensure that member states are not distracted with focusing on the lower ambition aspects, rather on the more ambitious and legally binding language, which will translate into a strong GPT.
- Its essential to ensure that adequate and sustainable capacity building, technical assistance, financial mechanisms and technology transfer for the Small Island and Developing Nations are supported throughout the treaty.

### **Session 4: Understanding the “circular economy model” through the Fashion Industry.**

#### **Highlights**

- The fashion industry is one of the main polluters, responsible for a big part of global carbon emissions and synthetic material pollution, and its impact could get worse.
- The Pacific fashion industry’s movement towards sustainable, environmentally friendly practices offers unique insights to a global circular economy model we want.
- When obtaining traditional raw materials, it's important to collaborate with Indigenous communities to ensure ethical sourcing. This support benefits grassroots individuals, particularly women, and facilitates the exchange of knowledge on the use and preservation of these materials.
- The sustainable fashion movement in the Pacific is a demonstration of how people can help the environment, support fair work conditions, and reduce waste production.

## **APPENDIX 2: Talanoa Guiding Points**

### **General points to feed into the Talanoa:**

1. How would you describe the importance of the coastal and marine ecosystem services for your livelihood security?
2. What are the main ways in which you and your community rely on the coastal and marine resources for sustenance and income generation?
3. Have you noticed any changes in the availability or quality of coastal and marine resources over the past few years? If so, what do you attribute these changes to?
4. How familiar are you with the concept of plastics pollution? Do you think it is a significant issue in your community?
5. What are the primary sources of plastic waste in your community? How do you think it affects the coastal and marine environment?
6. In your opinion, how does poor waste management impact the coastal and marine ecosystem in your community?
7. Have you personally witnessed any negative impacts of plastics pollution or poor waste management on the coastal and marine environment? If so, could you provide specific examples?
8. Are there any efforts or initiatives in your community to address plastics pollution and improve waste management? If yes, how effective do you think these initiatives have been?
9. What are the main challenges your community faces in implementing effective waste management practices and reducing plastics pollution?
10. What do you believe should be the responsibility of individuals, local authorities, and businesses in addressing plastics pollution and improving waste management in your community?
11. How do you perceive the potential long-term consequences of plastics pollution and poor waste management on your livelihood security and the coastal and marine ecosystem?
12. Are you aware of any alternative, sustainable practices or technologies that could help reduce plastics pollution and improve waste management in your community? If yes, please elaborate.
13. How do you think the government or other external organizations could support your community in addressing plastics pollution and improving waste management?

14. Are there any cultural or traditional practices in your community that could be utilized or adapted to promote better waste management and reduce plastics pollution?
15. What are your hopes and aspirations for your coastal community's future in sustainable development, waste management, and the protection of the coastal and marine ecosystem?
16. How would you describe the traditional ecological knowledge passed down through generations in your community?
17. Have you noticed any changes in the availability or behavior of key species or indicators of ecological health that were once prominent in your traditional ecological knowledge? If so, what changes have you observed?
18. In your opinion, how has plastic pollution influenced the transmission and preservation of traditional ecological knowledge within your community?
19. Are there any specific traditional practices or rituals in your community affected or altered by plastic pollution on the coastal and marine environment?
20. Have there been any instances where the traditional ecological knowledge of your community has been used to address or mitigate the impacts of plastic pollution? If so, please provide examples.
21. Are there any specific stories or anecdotes from previous generations that highlight the changes they witnessed in the environment and ecological services? How do these stories relate to the current challenges faced due to plastic pollution?
22. How do you think the loss or alteration of traditional ecological knowledge due to plastic pollution impacts your community's connection to the coastal and marine ecosystem?
23. Have there been any efforts within your community to integrate traditional ecological knowledge with modern approaches to address plastic pollution and improve waste management? If yes, how have these efforts been received and implemented?
24. Are there any concerns within your community regarding the potential long-term consequences of plastic pollution on the transmission and continuity of traditional ecological knowledge?
25. In your opinion, what role can traditional ecological knowledge play in finding innovative solutions to plastic pollution and promoting sustainable waste management practices?
26. Have you witnessed any collaborations between the younger and older generations in your community to address plastic pollution and protect the coastal and marine environment? If yes, how has this collaboration impacted the transfer of traditional ecological knowledge?

27. Are there any specific measures or initiatives that your community believes would help preserve and promote traditional ecological knowledge while addressing plastic pollution? Please share any ideas or suggestions you may have.
28. How important do you think it is to integrate traditional ecological knowledge into formal education and awareness programs related to plastic pollution and waste management?
29. What are your hopes and aspirations for the future in terms of preserving and revitalizing traditional ecological knowledge while addressing the challenges posed by plastic pollution?
30. Do you believe that a stronger connection with traditional ecological knowledge can contribute to more sustainable practices and behaviors in relation to plastic pollution? Why or why not?
31. Are you aware of the Fiji government's legislations to ban single-use plastics? If yes, could you provide some details or examples of these legislations?
32. How do you perceive the impact of the ban on single-use plastics on the environment and the coastal and marine ecosystem in your community?
33. In your opinion, what are the potential benefits of the ban on single-use plastics for your community?
34. Have you observed any changes in the availability or use of single-use plastics since the implementation of the ban? If so, what are some of the changes you have noticed?
35. How has the ban on single-use plastics affected your daily life or routines? Have you faced any challenges or difficulties because of the ban?
36. Do you believe that the ban on single-use plastics has raised awareness about the issue of plastic pollution in your community? Why or why not?
37. Are there any alternative materials or practices that emerged in your community due to the ban on single-use plastics? If yes, please provide examples.
38. How do you think the ban on single-use plastics will contribute to the overall health and resilience of the coastal and marine ecosystem in your community?
39. Are there any concerns or reservations within your community regarding the implementation or effectiveness of the ban on single-use plastics? If yes, what are those concerns?
40. What role do you think the government should play in supporting individuals, businesses, and communities during the transition away from single-use plastics?
41. Are there any opportunities for innovation or economic development in your community due to the ban on single-use plastics? Please elaborate.

42. How do you think the ban on single-use plastics aligns with the traditional values and cultural practices in your community?
43. Have there been any education or awareness campaigns related to the ban on single-use plastics in your community? If yes, how effective do you think these campaigns have been?
44. In your opinion, what more can be done at the government or community level to further promote the reduction of single-use plastics and improve waste management practices?
45. Overall, how would you rate the Fiji government's efforts in addressing plastic pollution through the ban on single-use plastics? What improvements or adjustments, if any, would you suggest?
46. Have you received any support or been involved in any awareness campaigns related to a Just Transition away from plastics? If yes, could you provide details about the support or campaigns you have been a part of?
47. How familiar are you with the concept of a Just Transition away from plastics? Do you believe it is relevant and necessary for your community?
48. Have you witnessed any changes or initiatives within your community that aim to reduce reliance on plastics and transition towards nature-based solutions and alternatives? If yes, please provide examples.
49. Are there any community-based initiatives or projects in your community that promote the use of nature-based solutions or alternatives to plastics? If yes, what are those initiatives and how have they been received by the community?
50. In your opinion, what are the main challenges faced by your community in transitioning away from plastics and adopting nature-based solutions or alternatives?
51. Are there any specific nature-based solutions or alternatives that have been introduced or explored in your community to reduce reliance on plastics? Please provide examples if applicable.
52. How do you think a Just Transition away from plastics can benefit your community in terms of livelihoods, environmental health, and overall well-being?
53. Are there any traditional practices or cultural values in your community that support or align with a Just Transition away from plastics and the adoption of nature-based solutions? Please elaborate.
54. Have there been any collaborations between community members, local organizations, or government agencies to promote a Just Transition away from plastics and the use of nature-based solutions or alternatives? If yes, what were the outcomes or impacts of these collaborations?



55. Are there any capacity-building programs or training opportunities available in your community to support individuals or businesses in transitioning away from plastics? If yes, could you provide details about these programs?
56. How do you think the government or external organizations can further support your community in promoting a Just Transition away from plastics and implementing nature-based solutions or alternatives?
57. Are there any success stories or positive experiences from other communities that have inspired or motivated your community to reduce reliance on plastics and embrace nature-based solutions? Please share any examples that come to mind.
58. What are your hopes and aspirations for your community in terms of reducing plastic reliance and transitioning towards nature-based solutions or alternatives? How do you envision your community in the future?
59. How important is community engagement and participation in driving the Just Transition away from plastics in your community? What role do you believe community members should play in this transition?
60. Are there any specific ideas or suggestions you have for your community or relevant stakeholders to accelerate the Just Transition away from plastics and promote nature-based solutions?

**A. Current Plastic Consumption and Waste Management:**

1. How much plastic waste does your community generate on a daily/weekly/monthly basis?
2. What are the main sources of plastic waste in your community (e.g., households, businesses, events)?
3. How is plastic waste currently managed in your community (e.g., recycling, landfill, open burning)?
4. Are there any existing waste management practices in place to reduce plastic waste (e.g., recycling programs, waste separation)?

**B. Community Awareness and Education:**

1. How familiar are community members with the environmental impacts of plastic pollution?
2. Have there been any educational initiatives or campaigns about plastic pollution in your community? If yes, how effective have they been?
3. Are there any existing programs or activities in schools or community centers that promote awareness about plastic pollution?

**C. Community Engagement and Willingness:**

1. Are community members aware of the concept of becoming "plastic-free"? If yes, how interested, or willing are they to support such an initiative?
2. Have community members expressed any concerns or challenges in reducing plastic consumption? If yes, what are those concerns?

**D. Existing Plastic Reduction Efforts:**

1. Are there any individuals, businesses, or organizations in your community already taking steps to reduce plastic use? If yes, what are they doing?
2. Are there any local businesses that provide plastic-free alternatives or packaging options?

**E. Infrastructure and Resources:**

1. What are the existing waste management infrastructure and services in your community (e.g., recycling facilities, waste collection)?
2. Are there any recycling programs or facilities available for plastic waste in your community? If yes, how accessible, and efficient are they?

**F. Local Policies and Regulations:**

1. Are there any existing policies or regulations in your community that support or address plastic pollution? If yes, how effective are they?
2. Are there any opportunities to collaborate with local authorities to develop or strengthen policies to reduce plastic use?

**G. Challenges and Barriers:**

1. What are the main challenges or barriers your community faces in transitioning to a "plastic-free" community?
2. Are there any financial constraints or resource limitations that may hinder the efforts to reduce plastic consumption?

#### **H. Recommendations and Action Plan:**

1. Based on the assessment so far, what are the key areas or initiatives where the community should focus their efforts to become "plastic-free"?
2. What specific recommendations and actions can be taken to reduce plastic consumption in different sectors (e.g., households, businesses, events)? c. How can the community improve waste management practices to ensure proper disposal and recycling of plastic waste?

#### **I. Community Support and Collaboration:**

1. Are there local organizations, businesses, or individuals that can provide support or resources to facilitate the transition to a "plastic-free" community?
2. How can the community encourage active participation and engagement from various stakeholders in achieving the goal of becoming "plastic-free"?

#### **J. Monitoring and Evaluation:**

1. How will the community track progress towards becoming "plastic-free"? Are there any metrics or indicators that can be used?
2. How often should progress be reviewed and evaluated, and how can adjustments be made based on the findings?

### **Equity-based Research Guiding points**

1. Access to Resources and Opportunities:
  - a. Are community members equally able to access clean water, food, and other essential resources necessary for their well-being?
  - b. Do all community members have equal access to education and employment opportunities, regardless of their background or socioeconomic status? c. Are there any specific challenges or barriers faced by certain individuals or groups in accessing resources and opportunities related to plastic pollution management and mitigation?
2. Distribution of Environmental and Health Impacts:
  - a. Are there certain individuals or groups within the community who bear a disproportionate burden of the environmental and health impacts of plastic pollution? If yes, who are they and what are the reasons for this disparity?
  - b. Are there any differences in the level of awareness, understanding, and concern about the environmental and health impacts of plastic pollution among different community members?

### **3. Community Involvement and Decision-making:**

- a. Do all community members have equal opportunities to participate in decision-making processes related to plastic pollution management and mitigation?
- b. Are there any community members or groups whose voices and perspectives are often marginalized or underrepresented in decision-making processes? If yes, who are they and why does this occur?
- c. How are the concerns and needs of marginalized or vulnerable groups within the community taken into consideration when developing strategies or policies to address plastic pollution?

### **4. Distribution of Benefits and Support:**

- a. Are there any initiatives or programs in place to support those who are disproportionately affected by plastic pollution or to promote their well-being?
- b. Do community members perceive that the benefits and support provided for plastic pollution management are distributed fairly among different groups within the community?

### **5. Collaboration and Partnerships:**

- a. Are there collaborations or partnerships between community members, local organizations, and government agencies to address plastic pollution in an equitable manner? If yes, can you provide examples and explain how they promote equity?
- b. How are the contributions, knowledge, and experiences of community members, particularly those who are historically marginalized, valued and included in collaborative efforts related to plastic pollution?

### **6. Capacity Building and Education:**

- a. Are there any capacity-building programs or educational initiatives that specifically target vulnerable or marginalized groups within the community to enhance their knowledge, skills, and empowerment regarding plastic pollution management?

### **Historical Context and Power Dynamics:**

- a. What historical factors have contributed to the current distribution of resources, opportunities, and vulnerabilities within the community?
- b. How do power dynamics, social hierarchies, or systemic discrimination influence the way plastic pollution and waste management are perceived, experienced, and addressed within the community?

### **Disproportionate Exposure and Vulnerability:**

- a. Are certain geographical areas or communities within the coastal region more exposed to plastic pollution? If yes, what are the underlying factors contributing to this disproportionate exposure?
- b. Are there specific populations, such as marginalized or vulnerable groups, who are more susceptible to the negative impacts of plastic pollution? How does this vulnerability intersect with other social, economic, or environmental factors?

### **Livelihood and Economic Implications:**

- a. How does plastic pollution impact the livelihoods and economic activities of different community members or groups, particularly those who rely on the coastal and marine ecosystem services?
- b. Are there any disparities in the economic opportunities or benefits associated with plastic pollution mitigation and waste management initiatives? If yes, who is benefiting and who is being left out?

### **Knowledge and Traditional Ecological Knowledge (TEK):**

- a. How is traditional ecological knowledge (TEK) affected by plastic pollution? Are there specific aspects of TEK that are being lost or eroded due to plastic pollution and its consequences?
- b. Are there opportunities to integrate traditional knowledge and practices into plastic pollution management and waste reduction strategies? If yes, how can this be done in an equitable and respectful manner?

### **Access to Mitigation Measures and Alternatives:**

- a. Are there affordable and accessible alternatives to single-use plastics available to all community members? If not, what barriers exist in accessing or adopting these alternatives?
- b. How can community members, particularly those facing economic or social challenges, be supported in transitioning to plastic-free alternatives or nature-based solutions?

### **Health and Well-being:**

- a. Are there disparities in the health impacts of plastic pollution within the community? Are certain groups more vulnerable to health risks associated with plastic pollution exposure?
- b. How do the health impacts of plastic pollution intersect with existing health inequalities or healthcare access within the community?

### **Community-led Initiatives and Decision-making:**

- a. Are there community-led initiatives or grassroots movements related to plastic pollution and waste management? If yes, how are these initiatives empowering marginalized or vulnerable groups and promoting their active involvement in decision-making processes?
- b. Are there mechanisms in place to ensure that community members have a meaningful voice in shaping plastic pollution policies, programs, and projects?

### **Miscellaneous**

1. Gender Roles and Responsibilities: a. How do gender roles and responsibilities influence the way plastic waste is managed within households and the community? b. Are there specific gendered expectations or divisions of labor related to plastic waste management and recycling practices?
2. Access to Resources and Decision-making: a. Are there any gender disparities in access to information, resources, and decision-making processes related to plastic pollution and waste management? b. How are women and men involved in decision-making regarding plastic pollution mitigation strategies, waste management initiatives, and policy development?
3. Livelihood and Economic Impacts: a. How does plastic pollution affect the livelihoods and economic activities of women and men differently within the community? b. Are there any gender-specific economic opportunities or challenges associated with plastic pollution mitigation or waste reduction initiatives?
4. Health and Well-being: a. Are there any gender-specific health risks or concerns associated with plastic pollution exposure? If yes, how are women and men affected differently? b. How do existing gender-based health inequalities intersect with the health impacts of plastic pollution within the community?
5. Access to Education and Awareness: a. Are there any gender differences in the level of awareness and knowledge about the environmental and health impacts of plastic pollution? b. Are there any barriers that affect women's or men's access to educational initiatives or awareness campaigns on plastic pollution and waste management?
6. Gender and Traditional Ecological Knowledge (TEK): a. How does plastic pollution affect gender-specific traditional ecological knowledge (TEK) and practices within the community? b. Are women's or men's traditional roles or knowledge systems impacted differently by plastic pollution, and if so, how?
7. Gender-responsive Initiatives and Support: a. Are there gender-responsive initiatives or programs addressing plastic pollution and waste management in the community? If yes, how do they consider the specific needs, priorities, and roles of women and men? b. Are there opportunities to strengthen gender mainstreaming in plastic pollution policies, programs, and interventions?



## **APPENDIX 3: Free-Prior and Informed Consent (FPIC)**

### **Information Sheet**

**Introduction:** Our research project aims to comprehensively understand the environmental and socioeconomic effects of plastic pollution in coastal communities in Fiji. We also seek to analyze these impacts through an equity lens, focusing on promoting fairness, justice, and equal access to resources, opportunities, and benefits. By examining the principles of equity within the context of plastic pollution, we aim to identify disparities, challenges, and potential solutions that can lead to more equitable outcomes for community members.

### **Objectives:**

1. Assess the level of understanding community members have regarding the impacts of plastic pollution on traditional ecological knowledge and its influence on the environment and ecological services over time.
2. Determine the perception, awareness, and appreciation of Fiji government's legislations to ban single-use plastics and evaluate their potential benefits and impacts on the community.
3. Explore community members' participation and involvement in awareness campaigns and initiatives focused on transitioning away from plastics and adopting nature-based solutions and alternatives.
4. Understand the effort required by the community to become "plastic free" and provide recommendations on actions they can take to achieve this goal.
5. Incorporate a gender-based approach to examine the gender dynamics, roles, and considerations related to plastic pollution and identify gender-specific challenges and opportunities.

**Methodology:** Our research involves the Vanua Research Framework, using a Talanoa Research Method with the coastal communities in Fiji. We have designed a comprehensive guideline for the Talanoa that includes questions related to the project's objectives and the principles of equity. We are working with the community members to gather their perspectives, experiences, and insights.

### **Key Themes Explored in the Talanoa:**

#### **1. Perceptions and Understanding:**

- Awareness of the impacts of plastic pollution on traditional ecological knowledge and the environment.
- Observations of changes in the environment and ecological services over generations.

#### **2. Government Legislation:**

- Awareness and appreciation of Fiji government's ban on certain plastics.
- Perceived benefits and potential impacts on the community.

#### **3. Community-based Initiatives and Awareness Campaigns:**

- Involvement in awareness campaigns promoting a transition away from plastics.
- Community-led initiatives focusing on reducing plastic reliance and promoting nature-based solutions.

#### **4. Efforts towards "Plastic Free" Community:**

- Understanding of the level of commitment required to become "plastic free."
- Perceived challenges and recommendations to achieve a "plastic free" status.

#### **5. Gender-based Approach:**

- Gender roles and responsibilities related to plastic waste management.
- Gender disparities in decision-making, access to resources, and participation in initiatives.

**Confidentiality and Ethics:** All data collected will be kept strictly confidential and used solely for research purposes. Participation in the study is voluntary, and participants will have the right to withdraw at any time. We will ensure that research activities adhere to ethical guidelines and respect the cultural norms and values of the communities involved.



**Expected Outcomes:** The findings from this research project will contribute to a deeper understanding of the impacts of plastic pollution on coastal communities in Fiji. Moreover, by incorporating an equity-based approach and considering gender dynamics, the study aims to provide recommendations and strategies for promoting more equitable and sustainable practices in plastic pollution management and waste reduction.

**Contact Information:** For any questions or concerns related to the research project, please feel free to contact Rufino Varea via [varea\\_r@ADBDRDP.onmicrosoft.com](mailto:varea_r@ADBDRDP.onmicrosoft.com) or +6799797497.

## FPIC Form Sample

Mr Rufino Varea

+679 9797497 or varea\_r@ADBDRDP.onmicrosoft.com

Date: \_\_\_\_\_

### CONSENT FORM

#### ADB-DROP Project

I have read and understood the Information Sheet describing the above-named project. I agree to participate as a subject in the project. I consent to publication of the results of the project/the information given to me on the understanding that my anonymity is preserved.

I understand that at any time I may withdraw from the project, as well as withdraw any information that I have provided.

I note that this project has been reviewed and approved by the University Research Ethics Committee at the University of the South Pacific.

Name (please print)

Signature

Date

(where appropriate) I am signing this Consent Form on behalf of

whom I represent in the capacity of

(where appropriate) I am signing this Consent Form as parent/caregiver on behalf of

Age (            years)

to allow her/him to participate in this project.

---

Rufino Varea

+679 9797497 or varea\_r@ADBDRDP.onmicrosoft.com

Date: \_\_\_\_\_

**CONFIDENTIALITY AGREEMENT**

**ADB-DROP Project**

I agree to keep confidential all information concerning this project. I shall not retain or copy any information about this project.

Name (please print)

Signature

Date

## Glossary

**Accessibility** | The extent to which a facility is readily approachable and usable by individuals with disabilities, particularly such areas as residence halls, classrooms, and public areas.

**Accountable** | Responsive to the needs and concerns of those most impacted by the issues you are working on, particularly to communities of colour and those historically underrepresented in the civic process.

**Actor [Actant]** | is something that acts or to which activity is granted by others. It implies no motivation of human individual actors nor of humans in general. An actant can literally be anything provided it is granted to be the source of action.

**Advocate** | Someone who speaks up for themselves and members of their identity group, e.g. a person who lobbies for equal pay for a specific group.

**Ally** | A person of one social identity group who stands up in support of members of another group. Typically, a member of a dominant group standing beside member(s) of a targeted group, e.g., a male arguing for equal pay for women.

**Assimilation** | A process by which outsiders (*persons who are others by cultural heritage, gender, age, religious background, and so forth*) are brought into, or made to take on the existing identity of the group into which they are being assimilated. The term has had a negative connotation in recent educational literature, imposing coercion, and a failure to recognize and value diversity. It is also understood as a survival technique for individuals or groups.

**Categorization** | The cognitive process of grouping and labelling people, things, etc. based on their similarities. Categorization becomes problematic when the groupings become oversimplified and rigid (*e.g. stereotypes*).

**Circularity** | a sustainable model, process, or economic system focused on re-use and waste elimination, challenging the traditional linear model of "take-make-dispose".

**Circular economy** | One of the current sustainable economic models, in which products and materials are designed in such a way that they can be reused, remanufactured, recycled or recovered and thus maintained in the economy for as long as possible, along with the resources of which they are made, and the generation of waste, especially hazardous waste, is avoided or minimized, and greenhouse gas emissions are prevented or reduced, can contribute significantly to sustainable consumption and production.

**Culture** | Culture refers to the norms and commonalities between a group of people that inform their way of life. This includes but is not limited to, customs, language, arts, social institutions, and achievements of a nation, people, or social groups.



**Classism** | Prejudiced thoughts and discriminatory actions based on a difference in socioeconomic status, income, and class, usually by upper classes against lower.

**Coalition** | A collection of different people or groups, working toward a common goal.

**Colonization** | The action or process of settling among and establishing control over the Indigenous people of an area. The action of appropriating a place or domain for one's use.

**Conscious Bias (Explicit Bias)** | Refers to the attitudes and beliefs we have about a person or group on a conscious level. Much of the time, these biases and their expression arise as the direct result of a perceived threat. When people feel threatened, they are more likely to draw group boundaries to distinguish themselves from others.

**Cultural Appropriation** | The adoption or theft of icons, rituals, aesthetic standards, and behaviour from one culture or subculture by another. It is generally applied when the subject culture is a minority culture or somehow subordinate in social, political, economic, or military status to the appropriating culture. This “appropriation” often occurs without any real understanding of why the original culture took part in these activities, often converting culturally significant artefacts, practices, and beliefs into “meaningless” pop culture or giving them a significance that is completely different/less nuanced than they would originally have had.

**Discrimination** | The denial of justice and fair treatment by both individuals and institutions in many areas, including employment, education, housing, banking, and political rights. Discrimination is an action that can follow prejudiced thinking.

**Diversity** | The wide variety of shared and different personal and group characteristics among human beings.

**Ethnicity** | A construct which divides individuals into smaller social groups based on characteristics such as a shared sense of group membership, values, behavioural patterns, language, political and economic interests, history and ancestral geographical base.

**Ethnocentricity** | Considered by some to be an attitude that views one's own ethnicity and/or culture as superior. Others cast it as “seeing things from the point of view of one's ethnic group” without the necessary connotation of superiority.

**Equality** | A state of affairs in which all people within a specific society or isolated group have the same status in certain respects, including civil rights, freedom of speech, property rights, representation and equal access to certain social goods and services.

**Equity** | An ideal state in which each individual or group of people is afforded the resources or opportunities necessary to achieving equality, recognizing that each individual or group has unique circumstances (race, gender, socioeconomic status, etc.) that factor into their ability to do so. In an equitable environment, an individual or a group would be given what was needed to give them equal advantage. This would not necessarily be equal to what others were receiving in light of their particular circumstances.

**Hazardous waste** | Any waste or combination of wastes with the potential to damage human health, living organisms or the environment. Hazardous wastes usually require special handling and disposal procedures which are regulated by national and international laws.

**Inclusion** | Inclusion is an active, intentional, and continuous process to address inequities in power and privilege, and to build a respectful and diverse community that ensures welcoming spaces and opportunities to flourish for all.

**Inclusivity** | the practice of including and embracing individuals who might otherwise be excluded or marginalized. It promotes diversity, equal opportunities, and respect for everyone, regardless of their background.

**Incineration** | A waste treatment process that involves the combustion of waste materials. It converts waste into ash, flue gas, and heat.

**Indigenous** | refer broadly to peoples of long settlement and connection to place as rooted in lands, waters, and airways, and who may have been adversely affected by incursions by industrial economies, displacement, and settlement of their traditional territories by others.

**Indigenous People** | Individuals of specific cultural groups who live within (or are attached to) distinct traditional territories.

**Intersectionality** | An approach largely advanced by women of colour, arguing that classifications such as gender, race, class, and others cannot be examined in isolation from one another; they interact and intersect in individuals' lives, in society, and in social systems, and are mutually constitutive. Exposing [one's] multiple identities can help clarify how a person can simultaneously experience privilege and oppression. For example, a Black woman in America does not experience gender inequalities in the same way as a white woman, nor racial oppression identical to that experienced by a Black man. Each race and gender intersection produces a qualitatively distinct life.

**Just transition** | The concept of just transition is ensuring that the move to a sustainable economy integrates the “goals of decent work for all, social inclusion and the eradication of poverty”.

**Life cycle** | Life cycle means the consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal.

**Life-cycle approach** | Means considering all potential impacts of all activities and outcomes associated with the production and consumption of plastics, including raw material extraction and processing (for plastics: refining; cracking; polymerization), design and manufacturing, packaging, distribution, use and reuse, maintenance, and end of life management, including segregation, collection, sorting, recycling, and disposal.

**Littering** | Littering means putting litter in such a location that it falls, descends, blows, is washed, percolates, or otherwise escapes or is likely to fall, descend blow, be washed, percolate or otherwise escape into or onto any public place, or causing, permitting, or

allowing litter to fall, descend, blow, washed, percolate or otherwise escape into or onto any public place.

**Marginalized** | Excluded, ignored, or relegated to the outer edge of a group/society/community.

**Managed landfill** | A place where collected waste has been deposited in a central location and where the waste is controlled through daily, intermediate, and final cover, thus preventing the top layer from escaping into the natural environment through wind and surface water.

**Marine litter** | Marine litter is any persistent, manufactured or processed solid material discarded, disposed of, or abandoned in the marine and coastal environment. This definition includes items originating from land or sea-based sources but excludes the process of health effects on biota.

**Microplastics** | Plastic particles less than 5 millimetres in diameter, including nano-sized particles.

**Managed landfill** | A place where collected waste has been deposited in a central location and where the waste is controlled through daily, intermediate and final cover, thus preventing the top layer from escaping into the natural environment through wind and surface water.

**Oppression** | Results from the use of institutional power and privilege where one person or group benefits at the expense of another. Oppression is the use of power and the effects of domination.

**Open burning** | Practice of burning unwanted materials or waste outdoors, emitting pollutants directly into the atmosphere and can contribute to air pollution, climate change, and health risks.

**Plastic alternatives** | The types of plastic polymer and other materials that may be mandated instead of conventional plastics or exempted from the ban.

**Plastic pollution** | Plastic pollution is defined broadly as the negative effects and emissions resulting from the production and consumption of plastic materials and products across their entire life cycle. This definition includes plastic waste that is mismanaged (e.g., open-burned and dumped in uncontrolled dumpsites) and leakage and accumulation of plastic objects and particles that can adversely affect humans and the living and non-living environment.

**Prejudice** | A prejudgment or preconceived opinion, feeling, or belief, usually negative, often based on stereotypes, that includes feelings such as dislike or contempt and is often enacted as discrimination or other negative behaviour; OR a set of negative personal beliefs about a social group that leads individuals to prejudge individuals from that group or the group in general, regardless of individual differences among members of that group.

**Privilege** | Unearned access to resources (social power) is only readily available to some individuals as a result of their social group.

**Recycling** | A resource recovery method involving the collection and treatment of a waste product for use as raw material in the manufacture of the same or a similar product [1]. Processing of waste materials for the original purpose or other purposes, excluding energy recovery

**Resilience** | The ability to recover from some shock or disturbance.

**Reuse** | Use of a product more than once in its original form.

**Stakeholders** | Those impacted by proposed policy, program or budget issues who have potential concerns or issue expertise. Examples might include specific racial/ethnic groups, other institutions like the Seattle Housing Authority, schools, community-based organizations, Change Teams, City employees, unions, etc.

**Social Justice** | A broad term for action intended to create genuine equality, fairness, and respect among people.

**Tolerance** | Acceptance, and open-mindedness to different practices, attitudes, and cultures; do not necessarily mean agreement with the differences.

**Traditional Ecological Knowledge** | Knowledge and practices passed down through generations by Indigenous Peoples. It incorporates cultural memories and environmental awareness and emphasizes sustainable resource management and adaptation to environmental changes. Plays a vital role in managing biodiversity and ecosystems, with Indigenous Peoples as stewards, custodians and owners of the territories.

**Traditional knowledge** | The knowledge, innovations, and practices of Indigenous [peoples] and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity.

**Traditional knowledge systems** | Based on values, beliefs, rituals and community laws and practices, as well as concepts and methods for land and ecosystem management. Some knowledge is of a highly sacred nature and therefore sensitive and not publicly available, even to members of the community or people concerned.

**Waste pickers** | Workers who recover recyclable products and materials from public spaces, open dumpsites, landfills or waste generators in an informal or semi-formal capacity, as own-account workers, or in cooperative settings. Waste pickers (including informal waste collectors) sell the recovered items and materials to intermediate or apex traders or drop them at formal or informal collection points.

**Waste management** | The total supervision of waste production, handling, processing, storage, and transport from its point of generation to its final acceptable disposal.

**Zero waste** | Waste management approach that aims to eliminate or minimize the amount of waste generated and sent to landfills or incinerators. It emphasizes reducing consumption, reusing materials, recycling, composting, and maximizing resource efficiency throughout the product lifecycle.







