

Plastics pollution as waste colonialism in Te Moananui

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Abstract

Plastics pollution is a global, relational, integrated, and intersectoral issue. Here, we undertook narrative analysis of semi-structured interviews with nineteen key plastic pollution decision-makers. They offered a contextual lens to understand challenges facing Pacific Island (Te Moananui) nations in preventing plastics pollution. We build on the work of Ngata (2014-2021) and Liboiron (2014-2021) to situate the narrative analysis within a "waste colonialism" framework. We argue that plastics pollution as waste colonialism transcends environmental, policy, and industry concerns. "Indigenous political ecologies" of plastics pollution provide an understanding by which plastics pollution prevention can be examined at multiple scales. These include, at the international level: trade agreements and import dependency, donor aid and duplication, and transnational industry influence. At the local level: pressure from local plastics manufacturers, importers and suppliers, and barriers to accessing the latest science. Located within a global and regional context, our findings capture the systemic and long-standing impacts of colonialism on Indigenous responses to plastics pollution prevention and management, highlighting its effects on human and environment health and wellbeing. Sustainable solutions to plastics pollution for Te Moananui require the centering of its peoples and their deep, lived, and intergenerationally transmitted knowledges in the identification of challenges and solutions, the implementation of activities, and amplification of a shared regional voice.

Keywords: plastics pollution; waste colonialism; Indigenous political ecology; Pacific region; Small Island Developing States

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Résumé

La pollution par le plastique est un problème global, relationnel, intégré et intersectoriel. Ici, nous avons entrepris une analyse narrative d'entretiens semi-structurés avec dix-neuf décideurs clés en matière de pollution plastique. Ils ont offert une lentille contextuelle pour comprendre les défis auxquels font face les nations des îles du Pacifique (Te Moananui) dans la prévention de la pollution plastique. Nous nous appuyons sur les travaux de Ngata (2014-2021) et Liboiron (2014-2021) pour situer l'analyse narrative dans un cadre de "colonialisme des déchets." Nous soutenons que la pollution plastique en tant que colonialisme des déchets transcende les préoccupations environnementales, politiques et industrielles. Les "écologies politiques indigènes" de la pollution plastique fournissent une compréhension par laquelle la prévention de la pollution plastique peut être examinée à plusieurs échelles. Celles-ci comprennent, au niveau international: les accords commerciaux et la dépendance aux importations, l'aide des donateurs et la duplication, et l'influence de l'industrie transnationale. Au niveau local : la pression exercée par les fabricants, importateurs et fournisseurs de plastiques locaux, et les obstacles à l'accès aux dernières avancées scientifiques. Situés dans un contexte mondial et régional, nos résultats mettent en évidence les impacts systémiques et de longue date du colonialisme sur les réponses indigènes à la prévention et à la gestion de la pollution plastique, en soulignant ses effets sur la santé et le bien-être de l'homme et de l'environnement. Les solutions durables à la pollution plastique pour Te Moananui nécessitent de centrer ses peuples et leurs connaissances profondes, vécues et transmises de génération en génération dans l'identification des défis et des solutions, la mise en œuvre des activités, et l'amplification d'une voix régionale partagée.

Mots clés: pollution plastique; colonialisme des déchets; écologie politique indigène; région du Pacifique; petits États Insulaires en Développement

Resumen

La contaminación por plásticos es un problema global, relacional, integrado e intersectorial. En este artículo, diecinueve responsables de la toma de decisiones en materia de contaminación por plásticos ofrecieron su punto de vista sobre los retos a los que se enfrentan las naciones de las islas del Pacífico (Te Moananui) para prevenir la contaminación por plásticos. Nos basamos en el trabajo de Ngata (2014-2021) y Liboiron (2014-2021) para situar este análisis dentro de un marco de "colonialismo de residuos." Las "ecologías políticas indígenas" de la contaminación por plásticos proporcionan una comprensión de la prevención de la contaminación por plásticos a múltiples escalas. Incluye a nivel internacional: el comercio y la dependencia de las importaciones, la ayuda de los donantes y la influencia de las empresas transnacionales. A nivel local: la presión de los fabricantes, importadores y proveedores locales de plásticos, y los problemas para acceder a los últimos avances científicos. Nuestras conclusiones captan los impactos sistémicos y de larga duración del colonialismo en las respuestas indígenas a la prevención y gestión de la contaminación por plásticos. Destacan sus efectos sobre la salud y el bienestar de las personas y el medio ambiente. Las soluciones sostenibles a la contaminación por plásticos para Te Moananui exigen centrarse en sus pueblos y en sus conocimientos profundos, vividos y transmitidos intergeneracionalmente. Pueden identificar los retos y las soluciones, las prácticas y fortalecer una voz regional compartida.

Palabras clave: contaminación por plásticos; colonialismo de residuos; ecología política indígena; región del Pacífico; Equeños Estados Insulares en Desarrollo

1. Introduction

Since the early 2000s, a small group of scholars have taken political ecology in a new direction by exposing the history and politics of the colonial-racial constructions of environmental knowledges, practices, discourses, and institutions. These studies have become attuned to critical environmental justice and environmental racism, ecological imperialism, the cultural politics of nature, racial capitalism, settler colonialism, 'urban political ecology from below', and waste colonialism. Scholars illustrate how the cultural politics of nature is differently embodied and expressed in struggles for access and rights to nature (e.g., Baldwin *et al.*, 2011; Brahinsky *et al.*, 2014; Escobar, 2016 etc.), and draws attention to the ways in which colonialism and racial capitalism are co-constitutive of environmental politics (Whyte 2018; Van Sant, Milligan, and Mollett, 2020; Murphy 2020).

We acknowledge that political ecology is rooted in a non-Indigenous European theoretical approach. Therefore, to further the decolonization of political ecology, we draw on the work of Ngata (2014-2021) and Liboiron (2014-2021)² to privilege Indigenous epistemologies, ontologies, values, challenges, needs, and worldviews in considering the materiality of plastic pollution as products and by-products of colonial capitalism.³

Plastics pollution is a globally relational, intersectional, and intersectoral issue and, therefore, the challenges and impacts borne of plastic pollution cannot not be understood nor addressed in culturally constructed discrete categories such as 'environment', 'policy', and 'industry.' In this article, we present the findings of a narrative analysis from semi-structured interviews with nineteen plastic pollution decision-makers in Te Moananui (sixteen Indigenous, three non-Indigenous). We draw attention to the ways in which Te Moananui has become enrolled in a global system of ecological imperialism rooted in capitalist modes of production and consumption, and how this manifests as waste colonialism. Waste colonialism analyzed through an Indigenous political ecology framing offers a significantly deeper historical, political, and cultural context, and more nuanced understanding of the roots and 'becomings' (Barad 2003, 2007) of injustices generated along the full life cycle of plastics.

We start by outlining our methodology. We then provide a brief background of the plastics pollution problem and go on to establish the foundational claim that plastics pollution is waste colonialism. Te Moananui participants were asked to consider the key international and national drivers and challenges for preventing and managing plastic pollution and the barriers preventing them from overcoming these challenges. Our analysis highlights the political landscape within which these decision-makers operate, and a shared set of external pressures preventing them from successfully responding to plastics pollution in their country/region. This includes, at the international and regional level, the transboundary nature of plastics pollution and the plastics pollution risks associated with import dependency. These are exacerbated by pressures from international trade agreements, donors, transnational companies and trading partners. Key challenges identified at regional and local levels include weak governance, and pressure from the private sector to continue to import problematic plastics, and barriers to access the relevant science on environmental and human health impacts of plastics pollution needed to strengthen policy responses and best practice. We then provide a brief discussion of Indigenous leaders' suggestions for potential plastics pollution prevention alternatives in the region. We conclude that sustainable solutions to plastic pollution across Te Moananui require the centering of its peoples and their knowledges, innovations, and practices in the identification of challenges and solutions, and the amplification of a shared regional voice.

² These dates reflect Liboiron and Ngata's extensive contribution to the public discussion of waste colonialism over these time periods, not to peer-reviewed article outputs.

³ Our use of the term Te Moananui to describe the region exemplifies this. Indigenous scholars to the areas commonly called Micronesia, Melanesia and Polynesia have discussed the issue of colonial nomenclature for their waters, lands, people, and the shared space between them. There is consensus that people of the region should be encouraged to use names that have a linguistic genealogy to place, and that the diversity in these names be honored in an inclusive, rather than exclusive fashion (Ka'ili, Williams, Diaz 2019; Ka'ili, Williams 2021). Terms such as 'Oceania' have been embraced from within the region to advance regional issues, but utilizing nomenclature that is not rooted in the region is problematic. We therefore support findings that unity and solidarity can and should be built out of allowing for multiple terms that have linguistic genealogy to the region. The region is not homogenous; there is no singular term that can or should encapsulate such a broad, diverse region, however, what is common across it is the existence of cosmologies. People, Ocean, and Land are inextricably interconnected and differentiated through genealogies of Sky worlds and Ocean worlds (Jolly 2007). In this instance, we use Te Moananui/Moananui/Moana to refer to the terrestrial (Land) and Oceanic territories of the region, the peoples who are descended from those worlds, and the shared spaces between them. This is in part because of the positionality of the authors who are from, and located within, what is commonly called 'Polynesia.' Most participants also reside in 'Polynesia.' We have further opted to use inverted commas throughout the article to recognize the colonial territorialization and nomenclature of sub-regions and countries in the region (e.g., 'Micronesia', 'New Caledonia', 'The Marshall Islands'). Where possible, we use Indigenous nomenclature.

2. Methodology

Position statements and intent: Co-author Dr. Sascha Fuller is a settler-colonizer to Wiradjuri and Awabakal Lands (Australia) and an environmental anthropologist who was trained in the Western tradition. Sascha's work is focused on centering non-Western cosmologies, epistemologies, and ontologies in issues of critical environmental concern, and she is particularly concerned with gender, human rights, and development interventions. For the past three years, Sascha has been based in the Waste Management and Pollution Control division at the Secretariat of the Regional Pacific Environment Programme (SPREP) in Apia, Samoa. SPREP are mandated to support their 21 Pacific Island members in issues of environmental concern. Plastic pollution, as outlined in the *Pacific Regional Integrated Waste and Pollution Management Strategy 2016-2025 (Clean Pacific 2025)* and *Pacific Regional Marine Litter Action Plan (2018-2025)* is a national and regional priority for Moananui nations. A coalition of international actors working in the field of plastic pollution has developed organically to support the work of SPREP and Moananui countries in their plastic pollution prevention aims. It is in this light, over the last two years, that the co-authors of this article were introduced and began a process of colonizer-indigene research (Jones and Jenkins 2014).

Tina Ngata is Ngati Porou from the East Coast of Te Ika a Maui. Her work involves advocacy for Indigenous human rights, and environmental and social justice. This includes local, national, and international initiatives that highlight the role of settler colonialism in climate change, and waste and pollution, and promotes Indigenous conservation as best practice for a globally sustainable future.

Dr. Stephanie Borrelle is a Pākehā (settler-colonizer to Aotearoa-New Zealand) conservation ecologist working at the nexus of science practice, international policy, and local community to implement conservation measures to address plastic pollution and protect seabirds across Te Moananui, and globally. Stephanie was trained within the western scientific academy in marine biology, environmental science and *manu moana* (seabirds) conservation in Aotearoa, and currently works on the Lands of Te Kawerau-a-Maki, Ngāti Paoa, Ngāi Tai, Te Wai-o-Hua, Ngāti Whātua-o-Ōrākei, Ngāti Whātua, and Ngāti Te Ata.

Associate Professor Trisia Farrelly is a Pākehā (settler-colonizer to Aotearoa) environmental anthropologist, political ecologist, and plastics pollution researcher who actively campaigns for national, regional, and international governance to address the full life cycle of plastics, the minimization of the production of virgin plastics, and the remediation of the harms caused by plastics pollution, toward a safe, just, and regenerative circular economy. Trisia currently works for Te Punenga ki Pūrehuroa, Papaioea, Aotearoa.

As individuals and as a collective, we have collaborated with the Center for International Environmental Law (CIEL), the Environmental Investigation Agency (EIA) UK, the United Nations Environment Programme (UNEP), SPREP, and Moananui government representatives to undertake projects that highlight the plastic pollution issues facing Moananui nations. The overarching aim was to amplify the Te Moananui position on plastics pollution in the lead up to critical United Nations Environment Assembly (UNEA) negotiations to mandate an international legally binding treaty on plastics pollution. The mandate was passed on 3 March 2022 at UNEA5.2.

Policy is a key orienting theme of this article: we demonstrate the policy deficits that exist at all levels (national, regional, international) to allow the import and export of plastics; we highlight the strength of China's National Sword policy as instigating change; and we conclude that a shared regional policy position and strengthened policy frameworks, particularly at the international level, are required to address waste colonialism in Te Moananui. This may initially seem incongruous with our aims, as many Indigenous thinkers rightly point out that strengthened policy is more about harm reduction than an anticolonial theory of change, as it does not result in social nor environmental justice for Indigenous peoples (Murphy 2020; Whyte 2018; Ngata 2019). The point to make here, however, is that while this research follows from a policy gap analysis conducted by Farrelly, Borrelle & Fuller (2021), it was undertaken precisely to understand and center the perspectives and experiences of Te Moananui peoples in a global policy environment with a long and enduring history of silencing Indigenous voices. Here, our focus has been on learning what the challenges and solutions are *from* Indigenous peoples, rather than merely learning about Indigenous peoples (Jones and Jenkins, 2014).

The nations included in this study are independent, sovereign States. They are not, or they are no longer, political settler/colonial states in the same vein as Hawai'i and Kanaky ('New Caledonia'), for example. The

policy discussions presented here have only come about because they reflect findings from interviews with key decision-makers, the majority of whom are Indigenous in Te Moananui. In this way, we have co-developed the question and the problem of plastics pollution in Te Moananui. The 'shared talk' (Jones and Jenkins 2014) demonstrates that environmental and social justice is threatened by power structures resulting in weak policy frameworks globally (the power-policy nexus). Thus the potential for truly transformational change exists within a broader process of decolonization for all Moananui peoples, whereby constitutional anti-racist environmental justice at the international level could result in strengthened decolonized decision-making at the regional and national levels, and thereby, social and environmental justice and sovereignty for Moananui peoples.

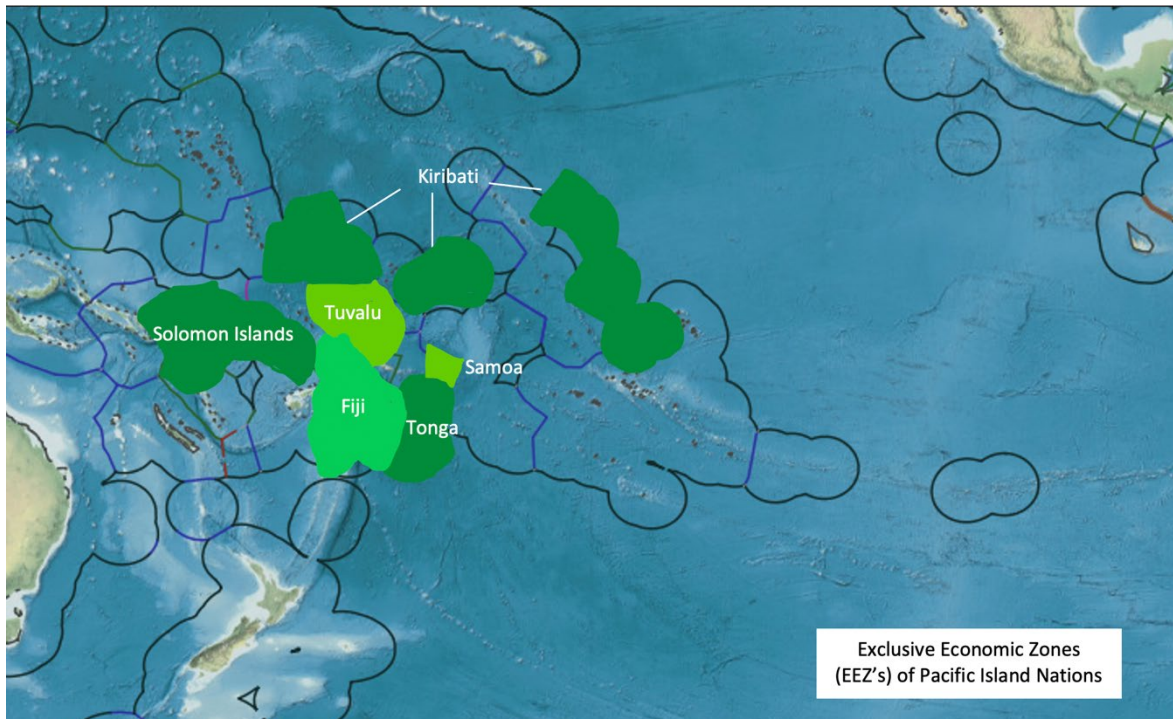


Figure 1: Moananui countries represented in this study (Samoa, Tuvalu, Tonga, Kiribati, Fiji, Solomon Islands) shown by contemporary Exclusive Economic Zones (EEZs), the purpose of which indicates the significant spatial scale of Moananui nations, noting however, map making in this way holds its own colonial and imperial legacy that is counter intuitive to Moananui ontologies (Jolly 2007).

To understand the realities of plastic pollution prevention at the national and regional levels across Te Moananui, we draw on case studies, primary documents (including policy), our own lived experience and expertise, and in-depth semi-structured interviews with a total of nineteen plastic pollution prevention and/or waste management government and non-government heads of department or project leads across six nations: Samoa, Tuvalu, Tonga, Kiribati, Fiji, Solomon Islands (Figure 1). Sixteen participants are Indigenous to Te Moananui, fourteen of these are government representatives, (heads of environment, customs departments, and waste divisions) who work for their sovereign states, and two are advisors in a regional organization, currently living in Samoa, working for their region. We refer to these people as 'Indigenous leader' throughout to reflect the leadership positions they hold in the field of plastics pollution prevention in their nations and region and demarcate each participant by specific country or the term 'regional.' Three participants are non-Indigenous to

Te Moananui but live and work in Samoa as technical advisors or project managers in plastic pollution and/or waste management in a regional organization. We refer to these participants as 'settler advisors.' We have limited the voices of settler advisors in this article to prioritize the shared perspectives, knowledges, relations, and experiences of Indigenous leaders. While many of the sentiments of settler advisors regarding the plastics pollution prevention landscape and pressures faced in Te Moananui may be similar to those illustrated by Indigenous leaders throughout, their lived experiences are not. In our analysis, we highlight the tandem political struggles of Moananui peoples such as political self-determination in international fora, and food sovereignty issues in international trade relations. Where possible, we have incorporated Indigenous science and epistemologies into our work. We argue that all plastics pollution prevention and conservation work must do this. This is part of the decolonizing methodology of waste colonialism (Liboiron 2016, 2020; Murphy 2020; Ngata 2019).

Today, largely because of the work of Indigenous communities, grassroots and non-government organizations such as GAIA Asia Pacific (Global Alliance for Incinerator Alternatives) and IPEN (International Pollutants Elimination Network), who have been responsible for addressing plastics pollution on the ground and drawing international attention to the crisis, Indigenous science, epistemologies and methodologies are increasingly a concern of international frameworks aimed to protect the world's biodiversity. For example, the Convention of Biological Diversity Article 8j (<https://www.cbd.int/convention/articles/?a=cbd-08>) states,

...each party shall, as far as possible and as appropriate ... respect, preserve and maintain the knowledge, innovations and practices of indigenous peoples and local communities relevant for the conservation of biological diversity and to promote their wider application with the approval of knowledge holders and to encourage equitable sharing of benefits arising out of the use of biological diversity.

Further, the September 2021 Marseille Manifesto outcome document of the International Union for Conservation of Nature (IUCN) World Conservation Congress renounces the Doctrine of Discovery to rediscover care for Mother Earth and recognizes and supports the rights and roles of Indigenous Peoples' and local communities' (IPLCs) in conservation, as well as protecting environmental defenders.

Due to COVID-19 restrictions, the majority (8) of interviews (5 with individuals and 3 with groups of two) took place via Zoom. Three interviews (1 x individual, 1 x group of two, and 1 x group of three) were conducted face-to-face in Apia, Samoa. Interviews were recorded, transcribed, and coded according to common themes identified by the researchers (the co-authors) as emerging from participant responses and narratives. A thematic narrative analysis (Riessman 2008) was undertaken to determine how research participants frame 'plastics pollution', and the enabling drivers and barriers associated with its prevention. A full draft of this article was sent to participants for comment before publication.

3. Waste Colonialism

The term 'waste colonialism' was coined in 1989 at a Basel Convention working group (Liboiron, 2016, p. 2). African countries expressed their concern that low gross domestic product (GDP) countries were being used as disposal sites for 'developed' high GDP countries' waste. Two years later, the then President of the World Bank, Lawrence Summers who encouraged LGDP countries to open their borders for trade, articulated the economics of waste dumping in what he referred to as 'under-polluted' countries, in a leaked confidential email:

I think the economic logic behind dumping a load of toxic waste in the lowest wage county is impeccable and we should face up to that...shouldn't the World Bank be encouraging more migration of the dirty industries to the least developed countries? (cited in Massey, 2004, p. 12)

Today, 'waste dumping', that is, the dumping of high GDP countries' waste materials in low GDP countries whose regulation and infrastructure are either non-existent or ill-equipped to manage them, is a "persistent

global trend" (Pratt, 2011, p. 151; Liboiron, 2016; Favarin and Aziani, 2020; Walters and Loureiro, 2020; Manglou, Rocher, and Bahers, 2022). This form of waste colonialism is rooted in the colonization and imperial expansion of the 'New World'.⁴

In theory, waste colonialism demonstrates, "pollution is not a manifestation or side effect of colonialism but is rather an enactment of ongoing colonial relations to Land" (Liboiron 2021, p. 7). To better understand the enactment of ongoing relations to Land, Oceans, Air, and bodies in Te Moananui, some understanding of the practice and impact of colonization of the region is required.⁵

For centuries before colonization, Moananui legends and oral histories reveal connected economies, blood, and kinship relations (Hau'ofa, 1994; Jolly 2007), where identity and ancestry are understood through a relationship to place and events chronicled in nature (Kana'iaupuni and Malone, 2016). Moananui ancestors would traverse the Ocean trading goods that were managed collectively under customary law (Wendt, 1976; Hau'ofa, 1998; Cinner and Aswani, 2007). They made 'voyages of discovery' hundreds of years before the 'discoveries' of European explorers (Jolly, 2007). In Moananui cosmology, Ocean (Moana) is a living being, inseparable from Land and people, all inexorably connected and dependent upon one another for life, spirituality, and consciousness (Dyke *et al.*, 1993; Hau'ofa, 1994; Styres, 2019, p. 27).

Colonization, the process of imperial claims over Indigenous territories and peoples, disrupted the human-environment relations of Te Moananui. Colonial powers, including Christian missionaries, enforced western law that was grounded in western epistemologies and ontologies (Rohe, *et al.*, 2018; Reclaiming Oceania Collective, 2018), interrupting the social and cosmological ordering of daily life (Jolly and McIntyre, 1989; Eves, 1996), separating humans from the non-human natural world and thus irrevocably impacting Moananui identities and wellbeing, and eroding a sense of connectivity.

In colonial imaginations and early development projects, there were two distinct, yet intertwined myths of Te Moananui that are useful for thinking about plastics pollution in the region. On the one hand, Te Moananui was viewed as a vast expanse of blue ocean, scattered with small, isolated and impoverished islands lacking in resources, thus requiring foreign interference to participate in the global economy (Wendt, 1976). On the other hand, island 'territories' were constructed as 'colonial outposts': remote and disposable (Hau'ofa, 1998; Case, 2019). Both constructs justified hundreds of years of racist entitlement, with Te Moananui being extracted, exploited, and treated by European imperial powers as a dumping ground.

From the late 18th century, the French and English penal colonies established in Kanaky ('New Caledonia') and 'Australia' respectively, saw hundreds of thousands of people deemed society's waste or 'wasted lives' (Bauman, 2013) permanently placed in the region. Through decades of global conflict, military training and weapons test sites were established across Te Moananui, from Guam, to Bikini Atoll, and from Hawai'i and Mururoa Atoll. Weapons testing and dumping of military waste has resulted in the permanent displacement of Moananui communities (Thomson and Samuels-Jones, 2020), genetic disorders resulting in birth defects and high infant mortality, the destruction of food systems, the permanent disfigurement of ancestral territories, and

⁴ The 'New World' is a Eurocentric term used to describe the myth that European explorers circumnavigated the globe and found a new world.

⁵ Throughout this article we choose to capitalize Land, Oceans, and Air as decolonizing practice (Styres, 2019; Murphy, 2020, p. 379). In doing so, we recognize Land, Oceans, and Air as each embodying, "two simultaneously interconnected and interdependent conceptualizations" (Styres, 2019, p. 27). As an Indigenous philosophical construct, we follow Styres' definition:

Land...is both space (abstract) and place/land (concrete); it is also conceptual, experiential, relational, and embodied...Land is more than the diaphanousness of inhabited memories; Land is spiritual, emotional, and relational; Land is experiential, (re)membered, and storied; Land is consciousness—Land is sentient...Land refers to the ways we honor and respect her as a sentient and conscious being. (Styres, 2019, p. 27)

Oceans and Air in Te Moananui must be viewed in the same vein. We have chosen to separate out Oceans and Air from Land to further highlight Te Moananui as a region of Oceans, both abstract and concrete, and to emphasize the many pathways and sinks for plastics pollution in Te Moananui.

the degradation of Indigenous cultures. US military bases in Hawai'i dumped more than half a million pounds (227,000 kg) of highly toxic chemicals into the Ocean as recently as 2019 (Yung, 2021).

Today's major environmental (and thereby economic, spiritual, and cultural) injustices and inequities, which include plastics pollution, are a direct result of these racist, colonial, imperial and capitalist practices of theft, commodification, exploitation, and destruction and contamination of Lands, Oceans, and natural resources (Spencer *et al.*, 2020; Andrews 2021; Manglou, Rocher, and Bahers, 2022), of dominant global economic institutions, funding frameworks, scientific practices, and power relations that are by-products of the colonial legacy (Andrews, 2021). As a result, not only have Indigenous peoples been forcibly displaced from their Lands, resulting in a loss of sovereignty, including an increased dependency on food imports, and food insecurity (Spencer *et al.*, 2020), but the capacity of contemporary Moananui communities to respond to the multiple challenges of their Oceanic worlds has been affected (Teaiwa, 2018; Case, 2019). Colonial imaginaries of remote, distanced, and disposable small islands continue to permeate Western discourse (Case, 2019), justifying Te Moananui as a suitable site to defer the responsibility of plastics pollution.

Plastics pollution as waste colonialism is a relatively new idea and differs slightly from waste colonialism understandings of toxic or hazardous waste. Most harms associated with plastics are not the result of waste dumping or illegal waste trade activity. This differentiates plastics from other forms of waste colonialism. Most plastics in circulation do not arrive in countries as 'waste'; their slow violence and deep time implications are concealed in the state-sanctioned legitimization of packaged products as "everyday consumer goods" (Liboiron, 2016, p. 98; Manglou, Rocher, and Bahers, 2022). The semiotics of plastic products (particularly food and beverage packaging) promises to satiate consumer desires, exceed sanitation expectations, and ironically, by preserving the product, preserve human life. An example of this was found in our own study. A Samoan participant described how they understand and use water and its plastic packaging:

So, we consider water as life (*vai*), so water you can drink. So, with this water bottle, I think they don't see it like there's water and a plastic bottle. It's just water, okay. But...right after you drink the water, for me, my family, we consider this plastic, this empty bottle, it's not waste, because we use it to refill the water and then put it in the fridge and then after that... We use this empty bottle every day. So, we don't consider it a waste. Only when we throw it in the trash, then that's a waste.

A bottle filled with water is simply considered water, not plastic, holding value until it is thrown away. As a theory, waste colonialism allows us to provide a deeper understanding of the roots and ongoing injustices generated along the full life cycle of plastics. It demonstrates the power dynamics currently driving plastics pollution prevention decision-making in Te Moananui and how it remains a by-product of colonial relations.

4. Findings and discussion: Plastics pollution as waste colonialism in Te Moananui

Plastics pollution is a global social, economic, environmental, and human health emergency requiring urgent attention. Ninety-nine percent of plastics (synthetic polymers) are produced from deep time materials (fossil fuels) (OECD 2022) and manufactured with monomers (the building blocks of polymer chains) and chemical additives which provide functional characteristics (Farrelly, Taffel & Shaw, 2021; Taffel, 2016; Liboiron, 2016; Davis and Todd 2017). They play a significant role in the Anthropocene (Crutzen, 2000; Liboiron, 2016), not least because plastic pollution is inextricably linked with climate change. Together they are "threat multipliers" (UNEP 2021a, p.15). Plastics production is estimated to produce more than 1.8 gigatonnes of greenhouse gases (GHGs) per year (OECD 2022). Ninety-two per cent of current plastics production ends up in the environment – in managed and mismanaged landfills, terrestrial and marine ecosystems (river systems and vast Oceans) and groundwater supplies (Gray-Cosgrove *et al.*, 2015; Pedersen Zari *et al.*, 2019; Diarra and Prasad 2021; OECD 2022). Once produced and released into the environment, plastics never disappear. Instead, they degrade into physical and chemical forms, their fragments are dispersed via biological, and abiotic pathways, leading to the contamination of all biophysical systems (Villarrubia-Gómez *et al.*, 2018) – plastics leach toxic monomers, additives and associated persistent organic pollutants (POPs) into ground and water supply (Pedersen

Zari *et al.*, 2019; Diarra and Prasad 2021). POPs can adsorb to plastics from their ambient environment and draw them into the food chain when ingested; and endocrine disrupting additives such as flame retardants and plasticizers or carcinogenic monomer (such as styrene – the building block of polystyrene) can leach out of plastics as they 'weather' and disrupt biological functions when ingested (Robertson and Farrelly, 2015; Gore *et al.*, 2015; Muncke *et al.*, 2020). In 2022, for the first time, plastic (polymer) particles have been found in the human bloodstream (Leslie *et al.*, 2022). The body of scientific evidence is growing and shows unequivocally that plastic pollution threatens food security and safety, human health, and the human right to a healthy environment. Toxic plastics-related chemicals and nano- and microplastics contaminate soil, food, marine and freshwater sources, Air, and the bodies of animals and humans, threatening the Lands, Oceans, Rivers, Lakes, Air, and Atmosphere of Te Moananui.

Despite their known harms, the rate of toxic plastics production and consumption is accelerating worldwide. Currently, 368 million metric tonnes of virgin plastics are produced annually, and this is set to double by 2040 (UNEP 2021a). If we carry on business-as-usual, 1.1 billion tonnes will have entered the world's Oceans by 2030 (Borrelle *et al.*, 2020). Te Moananui is grossly and disproportionately affected. This is in part, we argue, due to the practice of waste colonialism as evidenced in the following findings.

Plastics as Transboundary

Moananui nations remain among the world's peoples with the closest cultural, economic, and social ties to the Ocean. They are large ocean island states where the Ocean makes up 98% of the region. Moananui nations are exposed to volumes and impacts of plastic pollution that are inconsistent with their domestic contributions (Leal *et al.*, 2019). Te Moananui contributes as little as 1.3% of global plastic pollution, and does not produce plastic polymers, and yet it has the highest recorded quantity of floating plastics in the world (Lebreton *et al.*, 2018). Why? The transboundary movement of plastics.

Plastics coming into the region through trade, tourism, the fishing industry, and marine litter that flows in on Ocean currents, is a major concern for Indigenous leaders who are tasked with managing the resources of their vast Oceans. The combined Exclusive Economic Zones (EEZs) (based on borders that can be traced to colonialism and imperialism) of Te Moananui, comprises around 10% of the world's ocean and provide vital ecosystem services not only to the region, but globally, worth billions of dollars. Sixty-nine per cent of the world's canned tuna comes from the region (Fish 2.0, 2015), for example. Intense foreign commercial fishing (including legal commercial fishing operations and illegal, unreported, and unregulated fishing [IUU]) means that the region faces greater exposure to plastics pollution in the form of abandoned, lost, or otherwise discarded fishing gear (ALDFG) including fish aggregation devices (FADS) and plastic bait boxes and bags (Leal *et al.*, 2019, Richardson *et al.*, 2017). Non-Indigenous scientists recommend Moananui peoples use FADS to increase their commercial catches (Bell *et al.*, 2015). It is now estimated that between 30-65,000 FADS are floating around in the Western and Central parts of Te Moananui (Phillips *et al.*, 2019) and many of these are washing up on beaches, damaging coral reefs, and potentially altering the distribution of tuna (Richardson *et al.*, 2017; Leal *et al.*, 2019; Phillips *et al.*, 2019).

As a geo-strategically significant trading route with shipping lanes connecting Asia to the Americas, and northern and southern hemispheres (Scott, 2021), Te Moananui also experiences greater exposure to plastics pollution such as lost or abandoned cargo, waste dumping at sea, and the dumping of food and other consumer products in country (Snowdon and Thow, 2013). With a combined coastline of nearly 60,000km positioned in the trade winds, the region's coastlines are catchalls for mismanaged plastics in the form of marine plastic debris travelling on Ocean currents (Figure 2) (Andrew *et al.*, 2019; Lavers and Bond, 2017; Lebreton *et al.*, 2018).

In our study, Indigenous leaders refer to the problem of plastic pollution traveling across jurisdictional boundaries through waste dumping at sea, ALDFG, air flows, persistent organic pollutants (POPs), unregulated imports, tourism impacts, and plastics pollution climate change impacts at all points along the supply chain. They highlight the major problem of plastic pollution as an inter-jurisdictional, environmental, sociocultural, economic, and human health issue. Moananui peoples rely on healthy fish stocks for their primary source of protein, with approximately 1-110 kg of fish consumed per capita per year (Needham and Funge-Smith, 2014).

However, microplastics have been found in 25% of commonly consumed fish in Te Moananui (Forrest and Hindell, 2018), potentially transmitting associated toxins to consumers (Rochman *et al.*, 2015).



Figure 2: The Eastern coastline of uninhabited 'Henderson Island' ('Pitcairn Group', 24°22'30"S 128°19'30"W). Image credit Jennifer Lavers/ Adrift Lab.

Moananui nations are currently ill-equipped to manage the costly and harmful impacts of this problem, which is huge in magnitude and externally generated, although there is action at multiple levels of governance to prevent plastics pollution, for example, through the implementation of single-use plastic bans (Farrelly, Borrelle & Fuller, 2021). However, enormous challenges remain, and the main policy deficit does not lie with Te Moananui. Foreign and external actors and 'experts' often justify a lack of action in addressing the transboundary flows of plastic pollution into Te Moananui by citing geographic constraints and small economies of scale. This rhetoric was echoed by one settler advisor in our own study:

[The] Pacific is facing low technology, low source, and economy of scale for the volume that is available, little resource in terms of money available to manage process, and for a number of countries, poor access to shipping routes to remove [the plastics] from island.

When prioritizing the economy of the problem in this way, access to backloading and international recyclers is limited for Moananui nations. Backloading or reverse logistics is a supply chain mechanism to ensure post-consumption plastics are returned to point of production, for example, filling empty shipping containers with plastics waste and repatriating it for safe and environmentally responsible management (Farrelly, Borrelle & Fuller 2021). This begs the question – why are Moananui nations limited in their backloading and access to a centralized waste and recycle collection system, when they are on major shipping routes? It will be impossible for Moananui nations to address the challenge of the transboundary flow of plastics without ambitious action and commitment from the international community, including the private sector, to establish or support effective extended producer responsibility schemes such as reuse/refill and repair, container deposit or return systems and legislation, backloading, and remediation.

Contemporary efforts to minimize plastic pollution in Te Moananui are almost entirely focused on its management, rather than prevention or reduction (Farrelly, Borrelle & Fuller 2021). For example, most end-of-consumption plastic bottles are locally stockpiled, landfilled, burned, or dumped. A single-minded focus on waste management rather than prevention places the onus of responsibility and the environment and financial burden of *mismanagement* onto Indigenous populations (Liboiron, 2018), local communities, national governments, municipalities, and individual consumers and rate payers, further impacting Land and the sustainable economies of Moananui peoples. In the absence of legislative mechanisms and voluntary preventative measures from exporting nations, the volumes of plastics entering the region – and staying there – are forecast to increase rapidly over the coming decades (CIEL, 2017). In this way, plastic pollution is experienced as a form of slow violence by Moananui peoples:

[V]iolence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all...its calamitous repercussions playing out across a range of temporal scales. (Nixon 2011)

A key characteristic of slow violence is that the perpetrator of the violence is obscured by the substantial lag between the harm done and the evidence of affliction as is the case with the potential transgenerational genetic disruptions caused by endocrine disrupting chemicals associated with plastics.

Import dependency and trade agreements

Trade is a major transboundary plastic pollution issue for Moananui nations. Individual nations have little influence over trade agreements, import, product design and packaging standards (Farrelly, Borrelle & Fuller 2021). In 2019, 40% of plastic waste generation worldwide was packaging, with more than half of all plastics waste generated coming from applications with a life of less than five years (OECD 2022). This, coupled with rapidly growing urban communities across the region, who are increasingly reliant on imported, plastics packaged foods and goods (Friel *et al.*, 2013; Hawkes *et al.*, 2010) has seen hundreds of thousands of tons of toxic, non-recyclable, and disposable plastics flowing into the region each year (PRIF 2018). These volumes are set to increase (PRIF 2018; UNEP 2021a).

While Te Moananui is dependent on the tourism sector for economic sustainability, tourism aggravates the influx of increasing volumes of plastics-packaged food and beverages, including PET bottles containing water or soft drinks, and individually wrapped single-use products (Mohee *et al.*, 2015). Not only does tourism exacerbate volumes of plastics pollution in the region, it inhibits genuine engagement with the problem in its promotion of escapism (Case 2019). In reflecting upon the stark contrast between the 'island paradise' marketed to tourist crowds and the heavily plastics-polluted shores of Kamilo beach in Hawai'i, for example, Case (2019) observes,

Tourists come to Hawai'i to get away from their lives, to relax, and to experience moments of bliss. For visitors, then, "Hawai'i is theirs: to use, to take, and above all, to fantasize about long after the experience." The success of the invented "getaway", however, relies upon disconnection and disengagement from the realities of Hawai'i. (Case 2019, p. 82)

The reality is that end users see only a fraction of the packaging involved in the supply chain of a product since products can be packaged and repackaged along the way. Consumers also have no control over the system that perpetuates excess packaging other than to campaign against it. Globally, the petrochemical industry is driving demand for plastics production, not consumers (CIEL, 2017).

Te Moananui's Indigenous leaders face the challenges of increasing waste generation, particularly from disposable plastics (SPREP, 2016). Moananui nations are left solely responsible for safely managing problematic plastics post-consumption. Indigenous leaders are concerned with how to dispose of plastic packaging without "the facilities and the technologies for proper recycling" (Indigenous Leader, Regional). The

problem of how to manage growing volumes of plastics with limited infrastructure, resources, and capacity (Mohee *et al.*, 2015), and unsanitary and poorly managed landfills is putting additional pressure on landfill capacity. Atoll nations like Tuvalu are losing vital Land to create landfill and are at the point at which they exclaim, "we don't know where we are going to dump our waste and landowners are reluctant to give us more land" (Indigenous Leader, Tuvalu). Most plastics pollution ends up in the environment so that Indigenous leaders must now deal with the impact of plastics leachates to arable soils, fishing grounds, and mangroves, impacting the local food systems, human and ecological health, cultural connections to Land and Sea, and community livelihoods (Leal *et al.*, 2020). Plastics pollution leakage is exacerbated by Te Moananui's exposure to weather extremes because of climate change (Kumar *et al.*, 2020). Winds, rain, and storm swells, rising sea levels, and frequent cyclones and storm surges disperse plastics easily into the environment, further threatening human health and ecosystems – the Lands, Oceans, Air, and bodies of Te Moananui's Indigenous peoples (Leal *et al.*, 2019, Lachmann *et al.*, 2017, Farrelly, Stupples, and Schneider, 2016, Lavers *et al.*, 2020; Kumar *et al.*, 2020).

Despite these impacts, Moananui nations are under continual pressure to import plastic products and packaging. Deeper analysis shows that this is not simply a matter of 'convenience' but is precisely the result of colonization, today manifested in the international trade regime, supported by the global food regime (McMichael 2013). The global industrial food complex has seen the increasing centralization and colonization of food systems (Good 2014). It privileges the protection of international trade over locally produced and distributed food, international human rights law, and environmental legislation (Mulvany 2005; Mowbray 2007; Gonzalez 2012). Key players in the international trade regimes exerting pressure in the region include financial institutions such as the International Monetary Fund (IMF) and the World Trade Organization (WTO), transnational corporations (such as Coca-Cola and Nestlé) and regional and national governments and conglomerates (such as the European Union (EU) and Australia's Department of Foreign Affairs and Trade (DFAT)).

Indigenous leaders refer to trade agreements to highlight the imperialist behavior of international economic institutions like the WTO and demonstrate the powerlessness of the governments of 'developing' nations in preventing food and waste dumping under their WTO obligations:

...[it's] caused an inability of governments to control their own economy. They have to abide by a law that they've signed, and they can't unsign...they have to be able to trade and meet this international trade agreement where...you can't restrict [it], ...it probably comes as a result of excess somewhere that is being dumped into the Pacific. It's the chicken, it's the eggs, lots of these foods are in excess somewhere else, so it's cheaper for them to dump it in the Pacific where it can be sold very cheaply. (Indigenous leader, Regional)

Recent free trade agreements, for example the Pacific Agreement on Closer Economic Relations (PACER) Plus between Australia, Aotearoa and Moananui, have changed the diets of Moananui peoples (Hawkes *et al.*, 2010). Moananui leaders note waste dumping from USA, 'Asia' and Aotearoa:

We have big problems now because we are a small country and big countries know we have loopholes in our laws and regs and they take advantage of that, and they send all that banned stuff [here]. (Indigenous leader, Tuvalu)

For economically marginalized communities, the convenience of fast, cheap, bulk goods (often heavily packaged in plastics) may be prioritized over any potential environmental harms. However, food dumping undermines food sovereignty and corporeal sovereignty in Te Moananui. The array of processed and packaged foods imported into the region (for example Coca-Cola which is ubiquitous in some aspects of Te Moananui cultural life), have resulted in high rates of Type 2 diabetes, obesity, and hypertension among other ailments (Kessaram *et al.*, 2015; Sievert, Naika & Baker, 2019; Nagata *et al.*, 2011). One of Te Moananui's Indigenous leaders is fully cognizant of the relationship between food dumping and related disease. He states, "[D]isease

is a big, is a huge problem...[their thinking is] 'we're feeding the masses the cheap food and you know we're hoping that they don't complain and that they die early'."

While contemporary relationships between Australia, the United States of America, Aotearoa, France, and the United Kingdom have a long colonial legacy, impacting governance, trade, food, culture, and development (Trask 1999; Hau'ofa, 1998), there is a new player in the global food regime and Te Moananui Ocean governance – China (Wenjian 2017; McMichael 2020). The renewed focus on waste management and plastic pollution globally, including the 2020 Basel Plastics Amendment has, arguably, been catalyzed by China's decisive response to their own national waste crisis. China was responsible for handling 55.7% of the world's plastic waste (Wen *et al.*, 2021), but banned the import of 24 categories of solid waste in 2018, including mixed plastics or single stream plastics with contamination levels higher than 0.05%. Up until this time, China (with its land and financial and human resources) was inundated with unrecyclable, contaminated, and toxic plastics waste which culminated in frequent landfill collapses and subsequently high landfill worker mortality, widespread soil degradation and toxicity, poor air quality and lung health, and health, safety, and environmental impacts in unregulated and informal recycling villages (Jing, 2017). In short, China was groaning under the toxic burdens felt in their untenable role as the world's plastics dumping ground (Kang, Zhang and Duan 2020).

China's radical policy move to ban imports of a wide range of plastic wastes belies its status as one of the world's largest plastic producers and exporters of plastic products (Statista, 2019). Its expanding economic, trade ties, and influence in Te Moananui is predicted to further increase plastic pollution (Brooks *et al.*, 2018). Yet, there is sensitivity on the part of Indigenous leaders in Te Moananui to discuss Pacific-China relations. When questioned about this relationship, one Indigenous leader commented, "I cannot speak more about this."

Furthermore, while the Basel Plastic Amendments are crucial to reducing global plastic pollution, they have been criticized for being advantageous to the 'developed' countries of the Global North, so that "developing countries of the Global South would continue to be disproportionately impacted by plastics pollution unless the Basel Amendments are faithfully domesticated into national legislation by both importing and exporting nations" (Sridhar and Kumar, 2019).

Donor aid obligations

Disentangling aid and trade in Te Moananui is difficult, particularly with a renewed focus on 'Aid for Trade.' Aid refers to official development assistance disbursed by governments on behalf of their citizens to multinational agencies and government programs that reach far beyond the bounds of the nation-state (Mosse and Lewis, 2006). Just as trade has been decentralized, the neoliberal trend has also seen the decentralization and denationalization of aid (Mosse and Lewis, 2006). Today's international funding frameworks are built from a history of slavery, dispossession, and extraction – in other words, colonialism (Andrews, 2021). Of the global aid and debt system Andrews (2021) states,

It's as if I stole your money and then, when you failed to make ends meet, offered you a payday loan at extortionate interest rates, all the while berating you for being bad at running your personal finances, and then forcing you to spend the money in the way that benefited me the most. (p. 120)

In the neoliberal development context, Te Moananui is categorized as a region of 'Small Island Developing States' (SIDS).⁶ The culture, biodiversity, marine ecosystem, and climate change 'vulnerabilities' experienced in the region, as well as the geo-political struggle between China and 'the Rest', positions Moananui nations as prime sites for donor aid. For Indigenous leaders, the increased funding for, and attention to, plastic pollution is positive: "It's good for the waste industry because the waste industry was always a poor cousin, you know,

⁶ We do not support the use of the term SIDS for the very reasons described above – it justifies a system of inequity and dispossession. At the very least in donor discourse, plans, policies, and programs, Te Moananui should be referred to as it is by Indigenous leaders in regional fora – as a region of Large Ocean Island States (LOIS).

not much money was put to waste" (Indigenous leader, Regional). However, it is not lost on Moananui leaders that this is a type of "cheque book diplomacy" (Indigenous Leader, Regional) in which states "seek to leverage diplomatic support through aid and development funding in the Pacific" (Moyle and Dayant, 2020): "[T]he donors give aid money to countries ultimately to meet their own development and foreign policy needs. So that's the drive." (Indigenous leader, Regional)

The nature of global politics in Te Moananui means that the European Union (representing the Union Council for 27 countries), and aid programs from France, Germany, the United Kingdom, Norway, China, Japan, Taiwan, Australia, Aotearoa, and the United States, for example, are 'competing' in the region. The issues they are confronting are not necessarily the priorities for Te Moananui, and the irony is that donor countries can refuse to manage plastic pollution and marine litter in their own countries and EEZs while pressuring Te Moananui to deal with plastics pollution, which is largely the impact of global waste dumping in the region.

This influence extends to the international negotiating table. Some of the Indigenous leaders we spoke to feel a certain powerlessness when sitting with donor country representatives. They are reluctant to disagree with donors in global fora, such as in a Convention of Parties (COP), precisely because the 'big countries' have power and money. An Indigenous leader from Samoa states, "I've been attending a lot of global meetings and ... I feel like these big countries, they just want to like, ignore us, 'oh okay it's just a small island, okay, we'll take notes', but they just leave it there." The same leader tries to imagine an alternative:

I've experienced these people fighting because they have the power. They have the funds, you know, they have the money. So, for me coming from a small island state you know, it's interesting... I'm just sometimes, I'm sitting there and I'm just wondering what if I say something like this, you know, for example, Iran and the United States of America, they were like arguing, and here I'm sitting. What if I, you know, [Samoa], can step in and say, 'Ooh, I think the USA is right', how would Iran, you know, feel? 'Hey, you are just small, we are providing funds.' And what if I step into these very hard arguments and say, 'Ooh I support Iran', and then the USA go, 'Ooh, excuse me...you come from a developing island, you don't have funds, most of the time you request them, you give us proposals to fund this and this and this.'

Accounts from Indigenous leaders across Te Moananui demonstrate that at the international negotiating table, Moananui voices may be restricted by the influence (direct or indirect) of their donors.

Donor aid duplication

At the beginning of the twenty-first century, the Accra Accord and Paris Agreements (2005) aimed to shift aid to be more coordinated and focused by disentangling and streamlining the activities of bilateral and multilateral agencies. The aim was to reduce the massive transaction costs of aid for donors and recipients (OECD 2005, 2008). However, Moananui leaders lament the duplication and overlap at the national level in donor funding aimed at waste management and/or plastic pollution prevention:

We have been asked the same questions... Sometimes [...] we do feel a bit frustrated to give the same information, with the same things being asked, and also there is the ...there are too many projects that sometimes they overlap a bit making it a bit difficult for us to really differentiate which project, which aspect it is dealing with, they sometimes overlap so there is need to be a bit more coordinated at the regional level as well. (Indigenous leader, Solomon Islands)

The needs and priorities of Te Moananui are often not included in the design of projects and policy that will be implemented in their own countries. In some instances, the power relationships are explicitly colonial in both structure and nature. One Settler Advisor notes the Commonwealth Clean Oceans Alliance (CCOA) support for Vanuatu plastics policy, for example, was done in "complete isolation" from the Vanuatu government, who

"had very little ownership over it."⁷ Some, not all, national policies and pieces of legislation come about as a direct result of the requirement that countries must meet upon becoming signatories to international conventions while others are outcomes of donor funded projects, written by outside 'experts', drawing on Western epistemologies and practices, on behalf of Moananui governments.

Transnational companies

There are several examples of economic colonization occurring in Te Moananui, including the pressure leaders face from transnational companies to continue to import plastics and plastic products. The case of Coca-Cola Amatil is presented as one such example, as this relationship is highlighted by our participants as pertinent.

Coca-Cola, an "American imperialist symbol" (Nagata *et al.*, 2011), has consistently topped the 'Ban List' report for the world's worst plastic polluters (BFFP, 2020). In Te Moananui, Coca-Cola Amatil are opposing container deposit legislation (CDL) in what Indigenous leaders believe is an effort to control their own return scheme and self-regulate. For example, Fiji had been working towards a CDL, but these plans have been replaced by Coca-Cola's voluntary container deposit scheme for Fiji Water:

[We] were working towards a container deposit legislation, a CDL in Fiji...[t]hat was immediately...put on hold...and we found out later that it was because of Coca-Cola. Coca-Cola didn't want to be told what to do....They didn't want to be told that [they] had to put in this container deposit fee into [their] product. They wanted to do their own thing...This is just a company, this is not a government. So this is an industry, a producer of waste, that has put a hold on a national policy. (Indigenous leader, regional)

Similarly, towards the end of 2020, Coca-Cola donated US\$100,000 to the Samoa Recycling and Waste Management Association (SRWMA) for cages for their own unregulated return scheme, at a time when Samoa was developing its CDL plans (Membrere, 2020). Coca-Cola's intentions were questioned by some participants at the time, with one Indigenous Regional Leader cautioning the Samoan government to "be careful." Towards the end of 2020, in a sign of what was to come, Coca-Cola declared that the declining value of its Samoan operations hurt its 2020 profits (Robertson, 2020). For some perspective on this, Coca-Cola is currently listed number 335 on *Fortune 500* (Fortune, 2021) with annual profits of US\$8.34 billion (Fortune, 2021). The combined GDP of Te Moananui nations is US\$10.6 billion (The World Bank, 2019).

In March 2021, Coca-Cola stopped distributing glass bottles in Samoa in favor of plastic ones through a local distributor, putting pressure on the central and local government, and on communities to manage yet more plastic waste (Membrere, 2021). They are an example of "Big Plastics" (Linnenkoper, 2020), a major plastics producer with the power to dictate national policy and skirt democratic and regulatory controls and infringe on the right to a healthy environment (and the right to life, health, and water) (UNHRC, 2021, Resolution 48/13), leaving the onus solely with Moananui nations to manage waste, prevent plastic pollution, strengthen legislation, develop an effective remedy, and protect environments and communities.

[T]he Pacific is largely held at ransom by the rest of the world because they can only buy products that are on offer and products are plastic packaged so there is always going to be an issue... it's a one-way flow. (Settler advisor, regional)

Currently, Western waste management interventions and policies are focused on individual responsibility at the household level, often failing to recognize significant corporate and industry responsibility in the production,

⁷ The '[Commonwealth](#)' is made up of 56 countries, largely former colonies of Britain (Rwanda was the last to join in 2009). Nine of these, including Vanuatu are Large Ocean Island States in Te Moananui. Waste colonialism is a product of the same power structure.

manufacture, and circulation of plastics and plastic products (Manglou, Rocher and Bahers 2022, 12; Farrelly, Borrelle and Fuller 2021).

Local suppliers and industry

At the national level, Moananui governments face pressure from local plastics manufacturers, importers, and suppliers to continue to import plastic products and pre-production plastic pellets and minimize departmental efforts to implement national single-use plastic bans: "It is out of our control how to influence big suppliers" (Indigenous leader, Samoa).⁸ An Indigenous leader from Tuvalu reports, Tuvalu showed leadership in enacting legislation to prevent plastic pollution and had intended to enact a waste levy, but due to pressures and 'barriers' from 'the business community' (local importers/suppliers) it was blocked. Likewise, in Samoa, the Styrofoam ban was delayed due to resistance and considerable pressure from businesses who needed to sell surplus stock before the ban was enacted. Single-use plastic bans threaten a healthy single-use plastic market in Te Moananui where feasts and a take-home food culture are an important part of everyday life. One regional settler advisor is unsurprised that Te Moananui governments are having trouble influencing suppliers in their countries:

I do think those ministries that do want to address [plastic pollution] have limited power to do so. And regardless of the best laid policy legislation argument business case or otherwise, the people in the ministries are not the decision makers.

This suggests, in the words of one Indigenous leader, an "impotency of ministries" in this space, and that the real power lies with suppliers.

Business communities in Te Moananui have strong ties to politicians due to the small size of the countries. Ministry staffing size is small and their ability to influence change is weak. If companies do not like a particular piece of legislation, there is the option of approaching a higher-level government official (including the Prime Minister) for exemption:

Well for example, because we have the regulation for the plastic ban and the companies...they are the ones who [were] most affected with this regulation...[T]hey vote with their [money]. ... And, I guess, with the political relations with these companies, like, they [can] go through the high level, instead of coming to us. We are just the implementers... And if these companies, like, they come to us, we don't make decisions. Like, they come to us, 'Can we keep on supplying [single-use plastics]?' and when we say, 'No' because of the regulation in place and how we operate, they go to the next level. (Indigenous leader, Samoa)

It is perceived by Indigenous leaders in Samoa and Tuvalu that customs departments in Te Moananui are targeted and face considerable pressure from importers due to 'vague' and 'confusing' legislation. In general, plastic bans across the region are considered weak: "neither effective nor ineffective" (Indigenous leader, Tuvalu), due to a "lack of knowledge" and available data. Indigenous leaders make clear this weak policy leads to weak governance as it increases the likelihood of loopholes and the exploitation of these loopholes.

At first glance it may look as though the pressure and influence of local suppliers and industry operates discretely from colonialism, but there are two points to be made here to demonstrate this is not the case. First, contemporary relations of production along the full lifecycle of plastics are built on colonial relations to Land and prioritize economic growth over environmental protection, even in the face of ecological crises and legislation designed to prevent such crises. Local suppliers and industry may, therefore, be concerned with

⁸ While Moananui countries do not produce plastics, they do manufacture plastic products. For example, several Samoan-owned water companies buy imported pellets to manufacture water bottles.

protecting profits by lobbying to use cheaper but toxic single-use plastics products, rather than less problematic alternatives. Second, we argue that weak policy (that which is able to be exploited) is not the result of a Te Moananui governance and policy deficit, but rather, is because of Western-centric epistemologies and pedagogies promoted in Te Moananui since colonization.

Access to science

Plastics policy and practice is only as good as the available supporting evidence. Monitoring and evaluation of plastics pollution and/or the impact of single-use plastic bans is not taking place in Te Moananui, again due to limited human and financial capital. Consequently, there are gaps in locally sourced science-based evidence of the environmental and health impacts of plastic pollution and the effectiveness of plastic bans. When asked how many prohibited plastic items they may have stopped from entering the country, an Indigenous leader from Samoa replied, "We don't monitor [it]. We don't have any data." Yet, where plastic pollution data is collected locally and translated in meaningful ways, there is a greater opportunity for communities to be empowered to successfully respond. For example, the Gen 6 reports led by Vanuatu were instrumental in the International Maritime Organization's (IMO) adoption of the *Action Plan to Address Plastic Litter from Ships* (2018). In addition, marine plastic pollution trawling onboard Ocean voyaging waka in Aotearoa raised significant public interest and played a crucial role in the successful public campaign for a nationwide plastic bag ban in 2018 (Eriksen 2018).

More data, evidence, and knowledge translation of plastics pollution is needed across Te Moananui, specifically for leakage of plastics into the Land of Te Moananui, transboundary flows of plastics, and the environmental and human health impacts of plastics, including micro- and nano-sized plastic fragments, and toxic monomers and additives. While there is nascent attention being paid to microplastics, Indigenous leaders stress there remains very little understanding of its environmental or human health impacts in Te Moananui. An Indigenous leader from Fiji states, "The data has always been our Achilles heel."

Let's be clear: this is not due to a deficit in Te Moananui knowledge or understanding. The weakness in the science-policy nexus in Te Moananui points to a lack of open access to the international science of plastic pollution, and a lack of appropriate and meaningful cultural and linguistic translation and communication (with leaders, policymakers, managers, and all those impacted, right down to community level). This includes deficient dialogue with Indigenous scientists and policy makers on Indigenous knowledges, innovations, and practices. Scientists are consistently in breach of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Convention of Biological Diversity (CBD, Section 8.j.), and IUCN/UNEP protocols in this space. The challenges faced by Moananui nations are compounded by a lack of best practice by the science community in working alongside local communities to:

- 1) Co-develop the question/identify the problem;
- 2) Partner with local communities, multiple sectors (*inter alia* manufacturers, waste, fisheries, public health, retailers), waste pickers, and local/ district/ provincial leaders to develop, disseminate, implement, and regularly critically review the science; and
- 3) Incorporate local, traditional, and Indigenous scientific frameworks into the research.

An example of this is adaptive co-management (Folke *et al.*, 2002; Friedlander and Gaymer, 2021; Smardon, 2021) based on the following key tenet:

[I]ndigenous peoples' rights to self-control their knowledge, resources, and cultures, as is done within self-management governance structures...should include the equal power relationships between partners, dynamic understanding of [I]ndigenous peoples...and the acceptance of traditional ecological knowledge (TEK) as a legitimate knowledge system. (Casson 2015, p. 35)

The impacts of eroding and undervaluing Indigenous knowledge and practice, of unrelenting external pressure from a multiplicity of international, regional, and national actors, of the contribution of plastics pollution to the Anthropocene, and the slow contamination of human and non-human bodies and entities demonstrate that plastics pollution as waste colonialism is a form of slow violence that literally get 'under the skin' of Te Moananui peoples:

I didn't invite wasteful corporations to my economic or geographic landscape. I have never consented for them to occupy my body, to impact my health, or to take liberties with my land in order to produce their goods from the oil under my marine territory and attempt to sell it back to me in the form of plastic goods. I never consented for them to impose their systems upon the minds and bodies of my daughters through saturation of media, and political manipulation, and social domination. Their presence is exploitative, uninvited, oppressive – they take from the many, disadvantaging most for the privilege of the few. Without a doubt – this is corporate colonialism. (Ngata 2018, n.p.)

Access to meaningful participation in global fora

The most powerful mechanisms to prevent problematic, unnecessary single-use plastics entering Te Moananui (e.g., caps on virgin plastics at pre-production phase) can only be regulated at the international level. Te Moananui nations have little agency over outcomes in these spaces.

Moananui nations have little influence in shaping Multilateral Environment Agreements (MEAs) to suit their specific needs and challenges. Indigenous leaders express frustration and disappointment at being excluded from past United Nations Environment Assembly Ad-Hoc Open-ended Expert Groups (UNEA AHEG) on marine litter and microplastics, in part due to a lack of facilitation to support travel from Te Moananui including visas and funding. Short time frames between the issuing of invites from UN Secretariats and conferences of parties (COPs) inhibit the ability to book travel on time, and risks delegates' abilities to attend at all. This is exacerbated by a high staff turnover in Te Moananui government departments and a small handful of staff being tasked with covering all relevant COPs. For example, a Te Moananui country delegate from Tonga was only able to attend the UNEA AHEG in Bangkok in November 2019 because they were already travelling to Geneva to attend the Minamata Convention meeting.

Furthermore, a range of material, procedural, and recognition-based constraints have been imposed on Indigenous state and non-state members and observers in UN meetings (Belfer *et al.*, 2019). Belfer *et al.*, (2019) note that the formalization of Indigenous platforms have siloed Indigenous voices into one body (the Indigenous Peoples Major Group), thus limiting their access to other decision-making spaces. Indigenous leaders in our study note the dominance of 'Asian countries' in Asia-Pacific fora, where there have been instances where there have been no presentations from a single Moananui country or a spokesperson on behalf of the region. A case in point was the preparatory Asia Pacific Regional Consultation Meeting (UNEA AHEG 26-27 August 2020).

The impact of COVID-19 has further restricted the full, effective, and meaningful participation of Te Moananui nations in global fora. This was seen most recently at UNEA 5.2 and highlights the challenges of virtual participation in these negotiations where Indigenous leaders are expected to participate in highly-charged overnight negotiations for a fortnight while still maintaining their day jobs, duties, and responsibilities in government departments due to insufficient support and resourcing. What is seldom acknowledged by outside actors, but made clear to us by leaders in this study, is the enormous set of demands placed on a limited and under-resourced staff as well as the linguistic and cultural challenges they face when they are required to engage at the international level.

The transboundary movement of plastics pollution and its impacts has changed what is required of Indigenous leaders across Te Moananui. National level public servants, once responsible for national waste management and pollution control, now find themselves global negotiators, tasked with presenting their national and regional cases on the impacts of plastic pollution in international fora.

It's got a political context in it now, whereas waste (previously) was not political. You know it didn't have any inter-jurisdiction issues. No one took notice of it. It was a national issue. You deal with waste at the national level. But now it's becoming a global issue. It's transboundary and I think, you know, we're going to see more of a politicization of plastics. (Indigenous leader, Regional)

Indigenous leaders request greater support and capacity development in the politics of global negotiations and influencing international policy:

[We] just want to just do the work instead of dealing with the politics, but I think [plastics pollution] brings in a different dimension and it's going to require a different set of skills that the technical folks don't have and, yeah I think we're going to have to collaborate and form different coalitions that, and get friends that...can do this part of the work which is not the current skillset of the folks that we have. (Indigenous leader, Regional)

Alternatives and solutions: Centering Te Moananui knowledge and practice

In his 1998 essay, *The Ocean in Us*, Epeli Hau'ofa argues that successfully protecting our Oceanic environment requires the renewal of a shared Oceanic identity. Increasingly, scientists and the conservation sector are acknowledging Indigenous leadership is not only a matter of human rights, but that successful sustainable natural resource management depends on it. Eighty per cent of the world's remaining biodiversity is held in Indigenous Lands, and in 2017, Indigenous managed forests sequestered 33 times the global carbon emissions (Rights and Resources Initiative 2018). In many cases, Indigenous-managed forests prevent deforestation more successfully than state protected reserves (Porter-Bolland *et al.*, 2012). Despite the promotion of Indigenous leadership elsewhere, there is little promotion, or understanding, of Indigenous alternatives to plastics, nor are there Indigenous-led responses to plastic pollution in relevant national, regional, or international plastics pollution prevention policy (Ngata 2014-2021; Farrelly, Borrelle & Fuller, 2021). Yet Indigenous leaders highlight the potential to tap into readily available local alternatives. For example, single-use plastic bags could be replaced with *bilums* in Vanuatu, and banana and coconut fronds used for weaving baskets and for packaging take-home foodstuffs in Samoa. In Samoa, the culture of *taumafautaga* (meals/feasting) has a long history and remains strong in contemporary society where providing for the *aiga* (family) is central. Packaging *taumafautaga* to take home to the family has seen several iterations:

You know the Samoan *ma'ilo*, you know that is with coconut leaves, and we use that to take our food away.... to just take it straight home. So, they're organic, you can just throw them away, so, but ...I've seen changes, you know, in the lifestyle and I've seen these plastic bags coming in, the shopping bags then instead of using [*ma'ilo*] we use shopping bags, you know to take our food home, and now we're banning plastic bags... Now we've seen that we're bringing back the *ma'ilo*, the coconut leaves...[W]e had our farewell with our CEO and we used those [*ma'ilo*], and even with them people still take food [away]. (Indigenous leader, Samoa)

While Indigenous Ocean Peoples have had few opportunities to step into regional and international leadership roles to address plastic pollution, Indigenous initiatives demonstrate leadership at a national level (Liboiron and Ngata, 2020). In 2019, Samoa held a plastic-free Pacific Games, and during the global COVID-19 pandemic, people have been able to survive and thrive in Te Moananui despite the non-existent tourist economy, in part due to their reliance on customary knowledge, systems, and practices (Movono and Scheyvens, 2020). Para Kore, the Māori-led zero waste program that works with 450 Māori communities and organizations across Aotearoa to become zero-waste, utilizes Māori principles and centers the realities faced by each community in zero-waste solutions. In 2016, Para Kore won the Energy Globe: the world's most renowned environmental award (Te Ao Māori News, 2016; Liboiron and Ngata, 2020). The use of Ocean voyaging *waka*

for the collection of marine microplastics has shown to enhance engagement with the plastics pollution problem, particularly for Indigenous communities, such as Māori (Eriksen 2018). Indigenous leaders in our study make it clear they look to success stories in the region (as opposed to outside the region) for inspiration in preventing plastic pollution. Indigenous-led solutions support human rights, including the right to a healthy environment, tandem political struggles such as political self-determination and food sovereignty, as well as the success and longevity of projects (Spencer *et al.*, 2020). We must center the science and solutions of plastics pollution within the communities and ecologies of Te Moananui.

A shared regional position

It is for all the above-mentioned reasons that Indigenous leaders highlight the need for one collective regional voice on plastic pollution, particularly in the aftermath of UNEA-5.2 and in the lead up to the Intergovernmental Negotiating Committee (INC): "It's better to speak with one strong voice" (Indigenous leader, Tonga). Instances of regional solidarity have been critical to successful resistance efforts and awareness raising around nuclear weapons testing, toxic dumping, drift netting, the impacts of climate change, and the renegotiating of the United Nations Convention on the Law of the Sea (UNCLOS) to be more relevant to advancing Indigenous rights (Teaiwa, 2018; Reclaiming Oceania Collective, 2018). Leaders in this study express their support for a legally binding global agreement on plastics that demands powerful interests take responsibility for the full life of the plastics they produce including their responsible and safe end-of-life management. However, they warn against making the mistakes of past international conventions: mandating national action plans and the domestication of plastics pollution policy into national legislation without adequate financial, technical, and human resource support. For Te Moananui, a global convention is key to promoting a shared regional position and supporting and preferencing Moananui alternatives and solutions: "It's going to mean that the countries are not just by themselves. We all are in this together" (Indigenous leader, Regional). However, there must be flexibility within the international framework to accommodate the unique strengths, challenges, needs, solutions, and culture of individual nation states. While there are shared challenges, and a shared regional position is powerful in international negotiations, the region is not homogenous and greater time and effort needs to be put into understanding how national plastics pollution prevention action plans can be tailored to meet each nation's needs.

The resolution, *End plastic pollution: Towards an international legally binding instrument* convenes the INC and mandates it to develop an international legally binding instrument to address plastics pollution in all environments, including microplastics (UNEP, 2022). The mandate includes provisions to be made for a comprehensive approach addressing the full lifecycle of plastics including sustainable production and consumption, product design, environmentally sound waste management, national action plans, reporting, and technical and financial assistance. The INC is mandated to further consider a financial mechanism, as well as a scientific and socio-economic mechanism; and traditional knowledge, knowledge of Indigenous peoples, and local knowledge systems. Te Moananui leaders must be enabled to fully and meaningfully participate in INC negotiations to define the elements of the Treaty if the instrument is to prevent the further contamination and degradation of Indigenous Land, Oceans, and Air, particularly if the global community is committed to decolonizing global environmental governance.

5. Conclusion

Plastics pollution is a crisis of global, shared importance. The mandate for a global legally binding plastics treaty is great opportunity to overcome the problem of plastics pollution in the wake of UNEA 5.2. However, this will be ineffectual without collaborative approaches and policy coherence that is inclusive of Indigenous peoples in defining the problem and seeking comprehensive, effective, and sustainable solutions for the prevention of plastics pollution. Our Indigenous political ecology of plastic pollution centers the voices of Indigenous leaders in defining the problem of plastics pollution across Te Moananui. It demonstrates the ways in which plastics pollution intersects with issues of sovereignty, food insecurity and import dependency, global fisheries, biodiversity loss, livelihoods, climate change, health and sanitation, human rights, and the global political economy.

Our findings demonstrate the tremendous impacts of plastic pollution in Te Moananui and the pressures Moananui nations are under to continue to import plastic products and to manufacture plastics domestically. Simultaneously, donor countries are providing funding to prevent the inflow of plastics without adequate support for implementation, and without the involvement of Moananui communities in the framing of the problem and in negotiating response options. This draws attention to where the responsibility for preventing and managing plastic waste should lie: at the top of the waste hierarchy with plastics producers, transnational corporations, and trading partners from developed nations, rather than where it currently lies: solely with Moananui communities. In this way, it is difficult to dissociate the colonial legacies inherent in the systems of aid, trade, science, and transnational corporate power from the contemporary pressures faced by Moananui nations to import plastics and manage and prevent the harmful impacts of plastics pollution, along the full life cycle of plastics.

When framed within a regional experience of colonialism, our findings capture the systemic and long-standing impacts of colonialism on Indigenous responses to plastic pollution prevention and management, and emphasize its effects on environmental health – and human health and wellbeing – in Te Moananui. While our findings highlight some recent positive transformations, simultaneously, they point to a certain immutability in the power dynamics currently driving plastics pollution prevention decision-making in the region. A waste colonialism framing allowed us to explain this political inertia in the face of a rapidly changing global plastics pollution landscape.

Under the status quo, plastics pollution is waste colonialism in Te Moananui. Plastic production, manufacture, and pollution benefits the economies of the Global North while devastating the environment, livelihoods, health, and cultures of Te Moananui. It contaminates Te Moananui's food and water sources, ancestral and cosmological connections, and its peoples across generations. Plastics pollution is an enactment of ongoing colonial violence to the Lands, Oceans, Air, and bodies of Te Moananui peoples.

Plastics pollution is grounded in a colonial past and a neo-colonial present but, with greater efforts made to center the deep, lived, and intergenerationally transmitted knowledges of Te Moananui peoples in the identification of challenges and solutions, there is hope for a decolonized future. Sustainable solutions to plastics pollution for Te Moananui can only come from urgent, locally and globally coordinated and integrated, critically reflexive, and intentional, decolonial responses.

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