asia pacific viewpoint

Asia Pacific Viewpoint 2022
ISSN 1360-7456

Diverse values of surplus for a community economy of fish(eries)

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Abstract: *This paper develops a diverse economies account of fish 'waste' that revalues it as 'surplus'. We examine* 'Kai Ika'*, a community marine conservation experiment in Tāmaki Makaurau (Auckland), Aotearoa New Zealand.* Kai Ika *rescues fish heads, frames and offal that were previously 'going to waste' and redistributes them to fish eaters who would otherwise struggle to access these foods. It involves fishers and community sector and Indigenous actors in an initiative that converts would-be waste into surplus. We examine the case as a diverse economic project that nourishes humans, enhances respect for fish as living beings, and potentially conserves marine resources in the face of global-to-local fisheries depletion. The research is based on community-gathered fish parts collection data, and virtual and email interview data. We analyse this data to produce an account of diverse 'object values' and fish-related surpluses that derive from surplus labour and other socio-cultural and environmental surplus. We argue that reframing fish economies in this way encourages new and diverse economic subjectivities and a more connected, relational and cooperative community economy of fish.*

Keywords: *commons, community economies, diverse economies, fish, surplus, value*

Introduction

This paper investigates *Kai Ika*, an initiative in Tāmaki Makaurau (Auckland), Aotearoa New Zealand (NZ) that rescues unwanted fish parts from fishers, and redistributes them to individuals and communities that value and can make use of them. *Kai Ika* treats 'waste' as a resource and wastage as unethical. The initiative has a range of political and environmental objectives and is built on an anti-waste ethics, a politics of community development, a political project to reanimate and renegotiate access to the ocean commons, a politics of Indigenous rights and interests, and a narrower project of support for recreational fishing and its underlying economies. In this paper, we examine it as a community economy, which involves gleaning unused common pool resources and redistributing them to those able to use them to make livelihoods.

In this paper we use the *Kai Ika* case to link the problem of waste to community wellbeing, environmental ethics and practices, and the politics of the commons in Aotearoa NZ, by observing *Kai Ika*'s work as a community economy. A community economies approach queries how collective work is organised, how the commons are maintained, replenished and grown, and how any surplus is distributed once survival needs have been met (Community Economies Research Network, 2021). The research investigates the potential of active 'commoning' which has strong methodological and practical commitments to engaging with communities to enrich social and environmental health. This paper asks how communities in Aotearoa NZ can make less wasteful use of their fisheries commons to live well together.

We pose the above questions in a challenging yet potentially fruitful research context

doi:10.1111/apv.12327

where an increasing number of experiments with performing economy differently are invoking both Māori Indigenous and diverse economies insights (Bargh, 2012; Rout *et al*., 2019). Such projects are fraught with ontological and political challenges and risks of appropriation. In the first instance, for example, the term 'commons' is regularly used in settler economies to refer to land and ocean resources that have been appropriated under colonial rule. As discussed by Bargh and Otter (2009), there are some significant problems with literatures and political projects that commend efforts 'to common' on stolen land, irrespective of the depth of their concerns with living well in common with community and nature.

Nonetheless, Waitoa and Dombroski (2020) observe that community economies approaches share ethical and onto-epistemological positions with Kaupapa Māori, or 'Māori ways of doing things in general' (p. 508). These include opening up spaces for Indigenous ontologies, a more open mode of research, embracing ethico-political commitments as first principles of research, and participatory action methodologies with communities and community researchers. Core community economy concepts such as 'caring for commons' align ethically with *tino rangatiratanga* (indigenous sovereignty/self-determination), *kaitiakitanga* (ethic of intergenerational ecosystem care) and *manaakitanga* (an ethic of generosity) (Rout *et al*., 2019). In our case, this means making two further commitments. First, to adopt a 'strengths-based approach' when recognising the involvement of Māori communities, who 'are routinely pathologized by the research process' (Waitoa and Dombroski, 2020, p. 507). And second, extending community economies concerns with commoning to recognise that 'stolen land that should be returned to the commons management of Indigenous peoples' (Waitoa and Dombroski, 2020:505).

Our account *of Kai Ika* draws on findings from a collaboration with *Kai Ika*, data from its own fish-parts collection database, interviews with key informants, and our own observations of the organisation's practices. In this paper, we trace *Kai Ika*'s practices to identify the diversity of actors and labour involved, reveal diverse ways of doing economy and being economic, and how this reframes fish value and fish 'waste' as 'surplus'. We render our account with a view to possibility, recognising that experiments will always be incomplete, and with contradictions, but at the same time entangled in processes of becoming that promise new experiments and wider change. Our findings point to how initiatives such as *Kai Ika* can shift ethics, perform economy differently, and allow us to reassert the values of the commons and commoning and foster well-being-in-common.

Fish waste in a global–local crisis of overfishing

Fish 'waste' – whole fish, fish parts, or even bait – is most often disposed of in landfills or at sea (Goldhor and Regenstein, 2007). Fish of commercially undesirable species or sizes are often thrown overboard along with undesirable fish parts. Similar practices are also used to avoid detection by fisheries management enforcement agents. This wastes the potential resource of the whole fish or parts and can put unnecessary additional pressure on stocks of more desirable species. The FAO (2014) has stated concern for the large volumes of filleting by-products, which in Norway alone was estimated at 220 000 tons in 2014 (Olsen *et al*., 2014). In these ways fish waste is tied to the rise of a globalised fishing industry, its processing practices and underpinning ethics, and the privatisation of ocean commons that enable, and shape this industry. It is also tied in turn to fish-related unsustainability.

The depth and scale of long-running global–local fisheries crises are well rehearsed in the literature (e.g., Pitcher, 2005; Mansfield, 2011). Devastations extend from the exhaustion of fisheries and damage to ecosystems and benthic environments, to the collapse of fishing community livelihoods across the world and labour abuses aboard boats (Stringer *et al*., 2016). Privatisation of fisheries and the rise of massive state-backed global fishing corporations have accelerated unsustainable harvesting (Tickler *et al*., 2018). This may take different appearances in different places, but overfishing, unnecessary 'waste' from over- and by-catch, and negative ecological impacts are a constant.

Governance efforts to impose national and international regulation have failed to reverse these trends or disrupt dominant ethics of growth, profit and pillage (Wilcox *et al*., 2021). Catch volumes continue to increase, notably in

Antarctic waters and the Asia-Pacific region (Asia-Pacific Fishery Commission, 2017). For 40 years, the very idea of fisheries as a common property resource has been under siege from powerful fishing lobbies, state supported fisheries (Castilla and Defeo, 2005) and neoliberal governance (St. Martin, 2006; Petrescu *et al*., 2020). There is constant pressure to further enclose, territorialise and privatise fisheries.

Some have argued that falling stocks, ageing fishing fleets, failing regulation and rising opposition to industrial fishing's environmental and social records mean that wild fishing as we know it may be nearing *the end of the line* (Murray, 2009). Nonetheless, while much of today's industry may disappear, many species do survive in non-commercial volumes (Pitcher, 2005). Less destructive and more localised forms of fishing remain possible and may once gain flourish. They may materialise in new regulatory paradigms (Castilla and Defeo, 2005). Perhaps more promisingly, new calls for bottom-up action promise to align ecological insights and ethics with community level social concerns and economic imagination (Gibson-Graham, 2007; De Alessi, 2012; Rout *et al*., 2019; Karnad *et al*., 2021).

Commons, commoning and community economies

The oceans are in legal, practical and ethical terms a 'commons', albeit often mismanaged as such by nation-states. Hardin's (1968) notorious *Tragedy of the Commons* appears written to account for the collapse of Newfoundland's codfish fishery in the early 1990s (see McKenzie, 2011). While Hardin mistakes the absence of private property rights for an absence of regulation or management, the ocean commons have been mismanaged. As Ostrom (1990) asserted, commons can flourish and address issues of contest over access and distribution of surplus without either property rights or tight top-down direction. Indigenous regimes of governance have done this successfully for centuries through cultural protocols and traditional systems of authority. Such arrangements and/or broader ethical and social commitments and institutions such as trust can allow local communities to self-manage common pool resources within nation states. In many places, especially in the Asia-Pacific (Raubani, 2006; Radford and Lamb, 2020), they still do so successfully.

While corporate fishers dominate global markets and the imagination of regulators, the vast majority of the world's 35 million fishers and fish farmers are small-scale, part-time and/or seasonal fishers. They fish and farm in marine commons and support another 85 million people who work to bring fish to a diverse range of marketplaces (FAO, 2021). More than half of these workers are women, with fishing often built into complex livelihood strategies and interwoven cultural, environmental and economic rhythms of place. Many local economies in the Asia-Pacific are built around these economic relations despite pressures from industrial fishers and capitalist growth imperatives (Raubani, 2006; Radford and Lamb, 2020). Fishing, community, place and the commons are bound in just and sustainable approaches to fishing that are already and everywhere present. This is the insight that has informed much of the community economies tradition inspired by J.K. Gibson-Graham.

Gibson-Graham (2006) reject capitalocentric representations of 'economy' in favour of a reading of economy that recognises the vast range of activities that steward resources, create livelihoods and facilitate social reproduction. Rather than talk of all economies in universalist and abstract terms, they see economies as political, ethical and embedded in cultural and ecological/planetary processes. They focus attention on community economies, which 'acknowledge the interdependency of their constituents and are built around ethical negotiations' over how to attain material and communal well-being (Turker and Murphy, 2021, p. 51). This presupposes addressing well-being need, fairness, and how surplus is produced, distributed, appropriated, consumed, and invested, and implies active support for the commons and commoning. Importantly, the idea is not to prescribe practice but outline a set of ethical coordinates within which to enact collective gains.

Relevant to our case, Gibson-Graham (2007) draw insights, in part, from their research in Jagna, Philippines, where they witnessed independent fishers fishing the commons guided by cultural ethics and practices and a mix of waged and non-waged labour for household and community subsistence. They identify a set of management challenges as well as potentiality emerging

from these types of commons including 'sustaining and strengthening diverse practices', 'reclaiming, safeguarding and enlarging the commons' and 'generating surplus and marshalling and distributing it to foster expansion of the productive base' (Gibson-Graham, 2005, p. 17). With notable exceptions that show how fishing economies involve more than investment, wage labour, market exchange and calculations of growth and profit (Radford and Lamb, 2020; Karnad *et al*., 2021), these questions are rarely posed in the literature on fishing economies.

Diverse and community economy approaches broaden concerns with the commons beyond Ostrom-Hardin-type deliberations to the notion of commoning. They highlight the generative meanings, values and capacities of the commons and their underpinning ethics of social justice, which exhort us to consider how humans might live well by '*being*-in-common' (Gibson-Graham, 2006). Defining the commons as 'cultural and natural resources that are held, governed, and produced collectively', Petrescu *et al*. (2020, p. 2) argue that 'commoning' is the process by which commons 'are made'. An ethics of commoning guides the ways that humans value object/subjects, organise enterprise, build institutions, and perform exchange to foster planetary flourishing and common dignity (Roelvink, 2016).

Further, community economies scholars study the collective economic organisation, alternative practices and forms of exchange, and ways of conceptualising and dealing with surplus. Here surplus refers to what is left after our survival needs have been met. Authors have explored how surplus value is produced, appropriated and distributed (e.g., Gibson-Graham, 2007; Drake, 2019). The politics and ethics of this question provoke the moral implication of enriching social and environmental health. As Isola and Laiho (2020) observe, surplus is a potential that can 'create economic activity in the overlap of market economy, social security and self-sufficiency. It may for instance supplement inadequate income, improve purchasing power or make it possible for one to not participate in the market economy' (p. 95). In this way, interest in values and surplus connects to notions of assets-based community development, which highlight the full range of relations and capacities that community economies bring to serving communities in generative ways (Mathie *et al*., 2017).

Fishing and commoning in Aotearoa

In Aotearoa, the idea of an ocean commons and the negotiation of rights, interests and practices around fisheries resources are complicated by the history of colonisation and the Treaty of Waitangi (the agreement signed by the Queen of England and leaders of a number of Māori tribes when Britain first claimed Aotearoa as a British colony). Prior to colonisation Māori exercised access to fisheries (De Alessi, 2012) through complex inter-iwi (tribal) and inter-hapū (sub-tribe or extended family) relations. Indigenous systems of authority and cultural protocols regulated resource use and exchange, and guided the distribution of surplus. Post-colonisation, New Zealand seas became managed as a commons, which meant in practice a free and largely unregulated resource base for colonisers and generations of increasingly capital intensive fishers (De Alessi, 2012; Bargh and Van Wagner, 2020). Māori, who lacked access to capital constructed in this way, were unable to access this form of fishing and were excluded from this economy. All of this contributed to a series of Hardinian 'tragedies of the commons' as pressures built on particular fisheries over the following 130 years (Rout *et al*., 2019).

Under neoliberal reforms in the 1980s, the Quota Management System (QMS) for fish was introduced to New Zealand. The QMS replaced 'open access' with a new regime of privatised property rights. The subsequent efforts to 'manage' fisheries from the top down – through 'maximum sustainable yield', 'total allowable catch' and 'individual transferable quota' regimes – privatised the fishery and gave away common pool resources to private actors. Previously 'open access' fish became 'property'.

Initially excluded from quota allocations, Māori challenged the regime legally under the Treaty. The challenge was resolved with the passage of The Fisheries Settlement Act 1992, which recognised the full extent of Māori customary rights to fishing and fisheries, provided funds for Māori to buy a 50% stake in New Zealand's largest fishing company and quota holder, committed to facilitate self-management of Māori fishing for communal subsistence and cultural purposes, and allocated Māori 20% of quota for all new species brought within the QMS. In effect, Māori were allocated

roughly 30% of all quota, a major stake in commercial fishing activity, and rights to take fish, collect *kaimoana* (seafood) and manage fisheries at the local level (De Alessi, 2012).

Today, Māori are highly prominent investors in a billion-dollar, globally oriented commercial fishing industry and powerful political actors in oceans governance. They are increasingly asserting Treaty rights to manage fisheries in traditional terms at the community level as well as to for subsistence or to sell. The upshot for our study of *Kai Ika* is that all fisheries initiatives must consider Māori rights and interests. *Māoritanga* (Māori culture, traditions and ways of life) has always placed immense value on the ocean, while ocean resources are pivotal to Māori economies of all forms and at all scales.

More widely, industrial-scale fishing dominates imaginaries of fishing practices and possibilities in New Zealand (Peart, 2018). The QMS places profit imperatives and 'total allowable' catch ahead of concepts of responsibility, self-determination, care and relationality in the use of ocean resources. Other forms of fishing are backgrounded and small-scale market exchange can be illegal. The politics of fishing is intense; debates and struggles around the QMS continue over compliance, outmoded fisheries management models, the sustainability of fish stocks, the initial allocation process and Māori rights and interests (Peart, 2018; Reid *et al*., 2019; Rout *et al*., 2019). So too does criticism of by-catch, damage to benthic environments from trawling ocean beds, inefficient practices and labour conditions on boats (Stringer *et al*., 2016; Wilcox *et al*., 2021). The industry is politically powerful and lobbies hard. Māori fishing entities can find themselves on different sides of different debates, as can political parties, environmentalists and local community actors. All this sets preconditions and parameters of negotiation for initiatives such as *Kai Ika*.

Kai Ika

Originating in September 2016, *Kai Ika*'s goal is to convert fishing waste into value by repurposing and distributing often discarded fish parts into healthful and culturally appropriate food. Its motto is 'waste not, want not' (Kai Ika, 2021). In its first 5 years it recovered nearly 130 000 kg of fish heads frames and offal for distribution (Kai Ika, 2021). The initiative works through a network of relationships based on shared sustainability goals, bringing together fishers (recreational and commercial), fish workers and recipients. Recreational fishers are able to bring their catch to *Kai Ika* filleters at three dedicated filleting stations. Here, for a small fee, they can have their catch scaled, gutted and filleted, with the fillets being returned to the fisher and the frames, heads and offal being retained by *Kai Ika*. Fishers can also call a mobile phone number found on the public *Kai Ika* website to have their catch's 'waste' collected from their boat. Once collected, the fish parts are chilled and transported to a collection point, usually the Papatūānuku Kōkiri Marae which is a Māori urban marae (meeting grounds belonging to an iwi, hapū or whānau [family]) located in Māngere, an Auckland suburb. We describe the various uses of the surplus fish below.

Kai Ika was established by the recreational fishing lobby group LegaSea, for which it represented an important public relations initiative in its struggle against the privileging of commercial fishing interests under the QMS. As the project has developed it has also represented a high profile sustainability initiative for LegaSea's funders. However, the project was always more than that. Those involved trace its origins to a chance encounter between Scott Macindoe, LegaSea's founder and driving force, and a newspaper article about a largescale kūmara planting project initiated by Papatūānuku Kōkiri Marae as part of their efforts to reconnect their urban Māori community with food growing. Macindoe saw an opportunity for LegaSea to connect that initiative to problems of mounting waste at a filleting station operated by Ōrākei Outboard Boating Club. Macindoe himself had long espoused environmental concerns to do with ocean health and had longstanding relations with fishers in various Māori communities from which to nurture a partnership with Papatūānuku Kōkiri Marae. In short, a partnership underpinned initially by specific interests has become a far more open and generative initiative.

Today the partnership involves Papatūānuku Kōkiri Marae, the Outboard Boating Club of Auckland, and LegaSea and the NZ Sport Fishing Council (NZSFC) of which LegaSea is a public facing arm. While distribution is overseen by Papatūānuku Kōkiri Marae, bounty is distributed

to more than five community organisations including marae, churches and clubs, where it is allocated by volunteers to networks of local whanau, who receive a text inviting them to collect fish from the marae when available. There is a 'distribution list' who receive these texts which is managed by the marae based on who has received what fish parts previously. Arriving with cooling bins, bags, buckets and containers, recipients are given highly valued fish heads, frames and sometimes roe to take home to cook and eat with no expectation of payment. The offal removed from the fish is turned into organic fertiliser for the māra kai (food garden) at Papatūānuku Kōkiri Marae, as are any fish parts that are deemed unsuitable for human consumption due to heat exposure or contamination. The practices contribute to more than one community economy.

In 2020, as Aotearoa NZ countered Covid-19 with a nationwide lockdown, recreational fishing was prohibited. This prompted *Kai Ika* to call on commercial fisher Moana New Zealand, the largest Māori-owned fisheries company in Aotearoa NZ (Moana New Zealand, 2021) and a legacy of the post-QMS settlement with Māori, to fill the supply void as community demand increased, and then Sanford, another commercial fisheries operator which owns 19% of the Aotearoa NZ seafood quota (Sanford, 2021). Networks of large commercial operations, small businesses, nonprofit organisations, local government and social enterprises have evolved around *Kai Ika*, resulting in donations of services, objects and fish that now support it to recover and distribute larger quantities of fish parts to more recipients in ways that are safe for eaters and compliant with policies and regulations.

In what follows we trace how *Kai Ika* has revalued 'fish as surplus' by investing volunteer and paid labour in recovering fish parts from the waste stream, repurposing waste in a community economy, and redistributing them as edible food. The initiative has generated social, cultural, economic and environmental values from what was 'waste'.

Methods

Data collection and use

We examined fish parts collections data for the time-period 3 September 2016 to 15 April 2021, for the Auckland region. The date and source of collection was recorded by the organisation using an Excel spreadsheet. The data enabled us to observe trends in types of waste picked up and peaks times (seasons and days of the week) and analyse the ebbs and flows of surplus recovery. Information on the pick-up location for collections was classified as recreational (including boating and fishing clubs, individuals, fishing competitions) or corporate (commercial fisheries).

The weight (in kg) for each type of reclaimed fish waste was also recorded, counting heads, frames, offal or whole fish (typically where the head and frame were still intact, sometimes including the offal and/or roe – but no fillets). Bait and shells (in kg) were also separately recorded, and we analyse them for their potential uses.

Volunteer time in hours was also collected for each volunteer,[1] against the dates they worked. So too was a record of the approximate total kilometres travelled for each delivery, along with reference to aspects of community contribution (i.e., as an indication of geographical area covered and where fish-parts were distributed to). Free text comments made alongside the quantitative data were used as 'field notes' to enrich our understanding of the intent and focus of the work.

The data consisted of 903 records from spring 2016 to autumn 2021, with 869 (96.2%) entries listing the collection of fish waste and 34 entries listing volunteer time committed to relationships – activities such as 'pitching the *Kai Ika* project to potential workers', 'meeting with potential filleters' – or transporting non-fish items such as ice, which all contribute to the mission of the fisheries conservation project.

In addition to the fish parts collection data, two 'virtual face-to-face' interviews (see Hanna and Mwale, 2017) and two email interviews (see Gibson, 2017) were conducted with two key members of the *Kai Ika* project, with the range of data collection methods spanning February – November 2021. The purpose of the interviews was to clarify aspects of the fish parts data collection process, support data interpretation as queries arose, and get to know the nature of the organisation, and variety of practices. Virtual face-to-face interviews were conducted on Zoom primarily due to the uncertainties around Covid-19 pandemic safety throughout 2021 in the Tāmaki Makaurau region, and where individuals

were precautionarily socially distancing from others. Email interviews further facilitated this, but also supported *Kai Ika* volunteers' and the researchers' uncertain schedules during Covid-19 lockdowns, particularly as *Kai Ika* served as an essential service, feeding people during periods of intensified food insecurity (see Dombroski *et al*., 2020).

Fisheries and fish relations in surplus: Object values created through *Kai Ika*

We rethink fish 'waste' as surplus by directing attention to value. We inventory *Kai Ika*'s practices using Gibson-Graham's (2008) diverse economies framing but adapt it to make explicit the multiple and changing 'object values' of fish parts in different parts of the fish parts economy (Table 1). We add 'object value' to 'enterprise', 'transactions' and 'labour' as an economic identifier. This strategy allows us to highlight the contingent relationality of an object's value and the labour and nature embedded in it, the plural values of fish and fisheries surplus, and the different ethical formulations of value.

Fish in surplus

The total volume of reclaimed fish waste recorded by *Kai Ika* from 3 September 2016 to 19 April 2021 was 129 479 kg (Fig. 1). This considerable weight of healthy food confirms fish-part excess to be a significant commons resource and its wastage an important environmental concern. Collections of fish parts came from multiple sources, 70% from recreational fishing, the majority of which came from the Outboard Boating Club or from the fish caught in fishing competitions. This tells us that much of the labour that is converted into the near 130 000 kg of surplus comes from recreation, and that *Kai Ika* creates and materialises a surplus from practice that is not normally seen as labour. It also tells us that much of this labour comes from institutionalised recreational and more seasoned fishers, pointing in turn to an engagement from a particular social group who might not otherwise engage in redistributional

Table 1. The diverse economies of fish and fisheries as read through *Kai Ika* and its relations (Adapted from Gibson-Graham, 2008)

Object value	Enterprise	Transactions	Labour
Commodity value Stock. Speculated value.	*Capitalist* Global seafood corporations. National seafood corporations (Moana, Sanford).	*Market* Seafood markets. Local retailers.	*Wage* Waged international and domestic fishers. Employees at local, national and international retailers.
Alternative value Sustainable commercial seafood.	*Alternative capitalist* Small family-run seafood Businesses.	*Alternative market* Food sourced directly from fishers (e.g., small scale fishers. 'Fair trade' fish.	*Alternative paid* In-kind payments for 'volunteers' Self-employed workers (e.g., farmers, sole operator food outlets)
Commons value Food for cultural value. Food of nutritional value. Free food. Garden fertiliser. Relationship builder. *Taonga* (treasure). Fisheries' 'stock'. Biodiversity value. Barterable good.	*Non-capitalist* Self-employed fishers. Self-employed fish retailers. Community gardens converting fish surplus to fertiliser/stock for community use. Fish redistribution initiatives, e.g., *Kai Ika* Free fish heads. Slavery.	*Non-market* Recreational fishing surplus for home use or gifted to neighbours and friends. Donations, gifts, *koha* (gift). Donations of fish surplus in commercial operations to food 'rescue' schemes.	*Unpaid* Self-provisioning workers (e.g., cultural take, recreational fishers, seafood harvesters). Fish surplus 'rescue' volunteers. Fish surplus distribution volunteers. Alternative currency (e.g., in-kind pay arrangements).

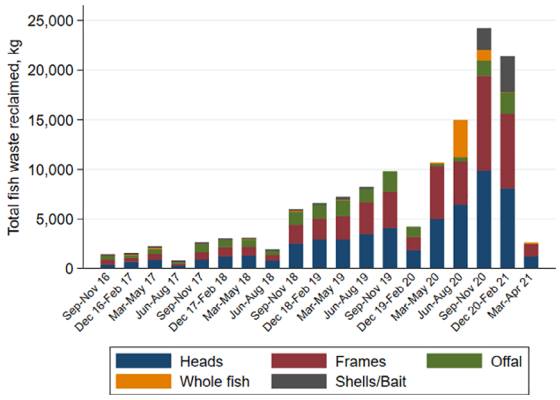

Figure 1. Total fish waste reported as being reclaimed (kg) in each season over the study period, by type. [Colour figure can be viewed at wileyonlinelibrary.com]

activities. Both reflections invite more detailed exploration in relation to social practice and social organisation in relation to redistributional ethics and potential in Auckland.

The data also tells us that most of the object value in weight terms (43%) is fish heads, which participants tell us represents the highest cultural value per kilogram to those receiving fish parts. This suggests we develop a weighting, equivalent for example to monetisation, to allow for the full object value of the practices to be measured across the multiplicity of values generated.

The data in Figure 1 also reveals temporality to *Kai Ika*'s fish 'waste' rescue and value creation – times of the week and year when fish and fisher behaviour mean that food rescue and resource harvesting are more prominent. This points to the importance of temporal rhythms in the production of values from incidental or voluntary labour and the importance of social and environmental calendars in such economies.

We also documented 263 corporate collections from commercial fishers Moana, Sanford and Scott Seafood. These accounted for 50% of pickups that included whole fish. We were unable to confirm why this was the case, but it does attest to the contingent relations of object values and their creation and important differences in how *Kai Ika*'s community economy interacts with other economies.

Fish surplus as community food

The fish heads are typically used to feed families and communities. Often, it is reported that they are used as base for fish stock and soup, used in smoking and steaming – usually this involves cooking at the household level. *Kai Ika* sometimes do the smoking and donating their time and effort with the fish parts when distributed. Fish frames are also used in fish stock but also commonly pan fried by households. When distributed as whole fish recipients are able to break down the protein themselves and create multiple dishes (Respondent 1, email interview, 16 June 2021). Alternatively, the whole fish is simply used to create fish stock/soup or boiled and consumed. Roe is smoked or fried.

We see here opportunity for the fish surplus to provide for food security, providing access to food that is available, stable, safe and nutritious, and contributing to biophysical, social and cultural wellbeing (Dombroski *et al.*, 2020, p. 4). The fish parts are free, they are delivered locally to a marae as the heart of the system of distribution, they provide for cultural and traditional food preferences and are nutritionally excellent. This set of practices might be recognised as a care-full food commons (Sharp, 2019) where *Kai Ika* (and collaborators) enacts an 'ethics of care about, with or for food through its concern for what is neglected or hidden in conventional food systems practices' (n.p.).

Fish surplus as garden fertiliser

The fish surplus is also food for non-human others, where 'some of the excess [is fed] back into [other] metabolic circuits. The use of waste food does not require extra fertilizers, pesticides or herbicides either. Just a bit of extra energy' (Law and Mol, 2008, p. 141). Indeed, it *is* fertiliser, where marine waste is known in industrial and traditional knowledge as a potent nutrient base for soil conditioning. Offal is used as organic compost for the Papatūānuku Kōkiri Marae *māra kai* (food garden). It is processed using a 'recipe' for fertiliser. This takes 3–6 weeks from the arrival of fresh offal. Based on records, about 95% of heads/frames/whole fish were used for human consumption and about 5% offal/bait/shells were used as fertiliser/compost to nourish the *whenua* (land, territory, also placenta). As *Kai Ika*'s Project Coordinator observes (email interview, 18 June 2021):

'Prior to our fertiliser program, all inedible fish and offal was buried into the whenua which slowly releases nutrients into the soil as it breaks

down. As a result of that burying, 2021 Papatūānuku Kōkiri Marae had the biggest kumara harvest they've ever experienced. Their focus is around rejuvenation of the soil so by burying fish it benefited the whenua. If the initiative finds itself with excessive amounts, this is either buried it into the whenua or discarded via Scott Seafood's [a commercial operator] waste disposal service. Fish that are not fit for human consumption/are an unsafe temperature are put into the fertilizer recipe. Rarely is rotting fish received (and never from commercial sources or Westhaven). If by chance it is, it is buried. From a food safety perspective, there are technologies and measures used to help adhere to particular regulations around food safety and distribution'.

In addition to the fish-as-fertiliser, there is the recovery of bait for the same use. *Kai Ika* provides the full disposal service for the Outboard Boating Club. When boats come in and have bait leftover from their trip which is perishable, including small fish and worms, this is added to the fertiliser recipe.

Fish surplus as environmental indicator

In Gibson-Graham's terms (2005, p. 17) the *Kai Ika* example reclaims, safeguards and enlarges the commons as a base for survival. The initial aim of its operations was 'to minimise our impact on the marine environment through better utilisation of our natural resources…[and to give]…respect to each and every fish harvested and ensure no part of the fish is wasted' (Kai Ika, 2021). Here it relies on the premise that for every kilogram of rescued fish parts demand for whole fish falls in conventional markets. This is problematic in several ways but is nonetheless a powerful ethic. It has more recently extended this position to see food insecurity as an environmental issue.

Enterprise

Kai Ika is also interested in producing '*surplus* surplus' by transforming fish parts into further products for sale, should its whole community provision not be taken up. Examples might include fish stock or fertiliser. The organisation sees this as an opportunity to move *Kai Ika* towards a self-sustaining funding model, which would reposition it as an alternative-capitalist economic space in the matrix of diverse economy initiatives (see Table 1), but simultaneously practice 'beyond the market' through its non-capitalist exchanges.

While firmly connected to community through LegaSea's fisher members and Papatūānuku Kōkiri Marae, *Kai Ika* has always been connected to capitalist economy through NZSFC and LegaSea's sponsors, many of whom are mid-large sized companies involved in the industry that sits behind recreational fishing. From mid-2020 it has also been redistributing capitalist surplus through its partnerships with Sanford (fully capitalist fisher, fish processor and fish retailer) and Moana New Zealand (a pan-iwi owned corporate quota holder, fisher and fish processor). These corporate relationships were struck when Covid-19 first hit New Zealand shores in the first quarter of 2020, and over 10 000 New Zealanders lost their jobs (NZ Herald, 2020). Māori and Pacific Island communities were hit especially hard due to the closure of the airport, which is a major employer. The demand for *Kai Ika*'s services intensified and it reached out to commercial operators for support, notably Moana New Zealand through its iwi relationships.

First, *Kai Ika* approached Moana and requested assistance, and Moana immediately came on board supplying large amounts (300 kg average) of heads and frames every Tuesday to Friday. Sanford subsequently came on board and commenced weekly pickups of 300 kg – this totalled 600 kg/ week donated by commercial fisheries. Here the 'waste' as surplus is commercial, and the two operations gain a range of benefits from converting waste to surplus through *Kai Ika*. The arrangement continues, irrespective of the Covid-19 status of the city.

Labour and transactions

Surplus labour and transactions involving fish

Labour is divided in particular ways. Two *Kai Ika* employees work 40 hours a week each. They are responsible for the filleting operations at Westhaven (a marina with a fish filleting station) and Scott Seafood (a small commercial fishery). They also assist with picking up and dropping off kai moana (seafood) that is donated from commercial operators. Marae volunteers have exclusive responsibility and

autonomy for community distribution. Their hours fluctuate with the amount of kai moana available – the more fish there is to distribute, the more hours they work. Distribution through Papatūānuku Kōkiri Marae is done through dedicated marae volunteers, who complete multiple tasks on the marae, including *Kai Ika* distributions, and care for the gardens. One family of parents and children largely takes responsibility for facilitating all the distribution once the fish parts arrive at the marae. They do pickups, but only those from Moana. Additional hours from marae volunteers are based around specific events such as educational talks with school groups, and other engagements.

Between 2016 and 2021 over 4700 volunteer hours were recorded for the 896 pickups/distributions that took place during that period (Fig. 2).

On average volunteers spent 4 hours at each delivery session. Labour peaked at 24 hours of time in a single day spread across four volunteers dealing with a single pickup/distribution during a period of acute demand over Covid-19 lockdown. These hours and pickup numbers are metrics of contribution to a community ethics that responds to need. As Gibson-Graham (2005, p. 17) foreshadow, the work 'subsidises subsistence', creates community, produces well-being directly, and is 'sustaining and strengthening'. The spike in total volunteer time between March 2020 and February 2021 attributable to a community-level Covid-19 response to food insecurity that was most visible from March 2020 onwards (Fig. 2) makes the point clearly, especially in the winter months when community need was the greatest due to less fresh food grown, higher costs for home heating, compounded with bottlenecking of food supply.

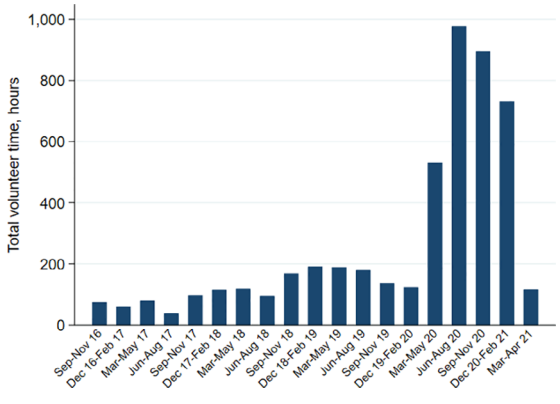

Figure 2. Total volunteer time recorded, in hours. [Colour figure can be viewed at wileyonlinelibrary.com]

The diverse and community economies of this labour are visible where surplus fish parts are shared around, gifted and renegotiated. The labour contains elements of what Gibson-Graham (2008) call 'family care', 'neighbourhood work', 'volunteer[ing]' and 'self-provisioning labour'; while practices include 'gathering' and the transactions include 'gift giving', and 'indigenous exchange'. These are all modes of diverse alternative economy that have wellbeing outcomes for the community. The records of labour (Fig. 2) and yield (Fig. 3) reveal how this economy is organised and held together by *Kai Ika* as a community economy. Significantly Figure 3 also reveals a highly productive economy in which each hour of volunteer time yields 23.4 kg of re-claimed fish parts, at a time when manual labour is valued at less than $20 an hour and retail prices of more favoured cuts of fish varied from $15 to $35 per kilo.

As in Drake's (2019) work, the *Kai Ika* case reveals multiple diverse forms of 'reward', utilitarian, intrinsic and collective. It fosters expansion of the productive base and increases standards of living by offering pathways to food security underpinned by *mana*-enhancing means (where *mana* bestows prestige, authority and honour), that enable autonomous nurturing of marine ecosystems, people and land. The revaluing of fish parts – from waste to surplus – not only depends upon transparency, responsibility, autonomy, and trust but fosters the networks, volunteerism, encounters with others, shared experience, and commitments to care that build these community 'goods'. The commons is opened, and access regulated by community level negotiations and agreements over practice and surplus (Bargh, 2012; Gibson-Graham *et al.*, 2013; Waitoa and Dombroski, 2020). Volunteers work and community members give to generate community with no expected return, and in turn build community within and between *Kai Ika* collaborators, Papatūānuku Kōkiri Marae and beyond.

Community economies of fish(eries)

Kai Ika demonstrates the potential of making economy from the commons through a set of community-negotiated ethical coordinates. It assembles actors who share, and care for a common resource that enables wellbeing. This

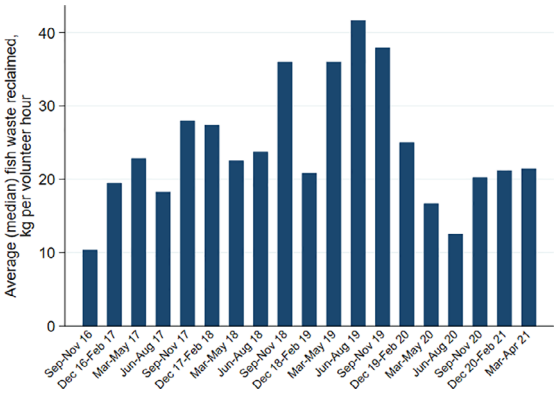

Figure 3. Average (median) fish waste reclaimed in kg per volunteer hour. [Colour figure can be viewed at wileyonlinelibrary.com]

is very much 'commoning' as Petrescu et al. define it (2020), in which the commons makes community, and 'becoming-community' in turn reinforces and remakes a commons. In a commons undermined by enclosure by a QMS that is designed to support capitalist fishing, *Kai Ika* highlights its enduring potential to catalyse economy in different terms. It also helps us to see communing and community building as 'always in process'. The case reveals a more vital and flexible vision of the commons than is portrayed in more conventional literatures, even those that are committed to more progressive goals than enclosure (Petrescu *et al*., 2020).

Conclusion: A community economy and transformational practice

In its work, *Kai Ika* demonstrates how to consume animal protein more sustainably, more efficiently and more respectfully. It reveals how humans might engage care-fully with natural resources and environments to shape livelihood outcomes (Suchet-Pearson *et al*., 2013). It also tells us much about the potential of community economies and the importance of making them visible in the literature. It assembles an unlikely community of actors from recreational fishers, to Papatūānuku Kōkiri Marae workers, commercial entities, NZSFC sponsors, disadvantaged Aucklanders in need of protein, and those who receive fish heads because they want them; reveals the generative capacities of practices of care for the surplus fish parts, the eaters and users of those parts, and the constituents of that community; and demonstrates the possibilities afforded through a differently connected, relationally imagined, and cooperative economy of fish with which we can survive well. The initiative reveals deeper, potentially affective potential to build an ethical commitment to interdependent well-being-in-common (Gibson-Graham, 2005; Turker and Murphy, 2021).

The case of *Kai Ika* adds to the repertoire of accounts of fisheries-commons initiatives in the Asia-Pacific region, including the Philippines (Gibson-Graham, 2005), Vanuatu (Raubani, 2006), India (Karnad *et al*., 2021), Myanmar (Radford and Lamb, 2020) and other locations. We show how *Kai Ika* responds to common challenges of inadequate management of commons resources and recognition of community level endeavours that do difference and make change. As in other cases, *Kai Ika* reveals the potential of an 'anticipatory consciousness' that marshals 'possibilities that already exist and [nurtures] them by building and sustaining relationships' (Gibson-Graham, 2005, p.17). In this case, those possibilities are fish waste, contest over the commons (which drives LegaSea), the institutions of Papatūānuku Kōkiri Marae, and the core concepts of Māori political and cultural economy. These resources are configured into surplus by revaluing of waste, care-full negotiation, configuring ethical coordinates, and voluntary labour, which turn fish waste into additional nourishment, enhanced social and cultural connection, and diverse economic opportunities.

In community economy terms, *Kai Ika* mobilises gifting, volunteer labour and community-grounded relationships between LegaSea and Papatūānuku Kōkiri Marae to convert would be waste from recreational fishing into fish surplus for distribution to communities in need. It is now encouraging commercial operations to convert surplus from their use of New Zealand commons to profit by feeding distant populations into direct well-being for local communities. The initiative has built an economy on community labour, unlikely relationships, careful negotiation and organisation, and place-specific non-market ethical coordinates to convert surplus fish surplus into fertiliser for community gardens (māra kai). It is broadening the productive base and improving wellbeing through enhanced food security and sovereignty.

More prosaically, the *Kai Ika* example also shows the value of already existing community economy infrastructure for surviving well in the face of economic, or ecological shock, and threat. The challenge is that while generative, these diverse economies *themselves* are under threat when a global-regional-community commons, and community ethics are eroded.

Acknowledgement

Open access publishing facilitated by The University of Auckland, as part of the Wiley - The University of Auckland agreement via the Council of Australian University Librarians.

Note

[1] Though from September 2020 onwards it was not always clear what time was labour of full time *Kai Ika* employees or volunteer time.

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