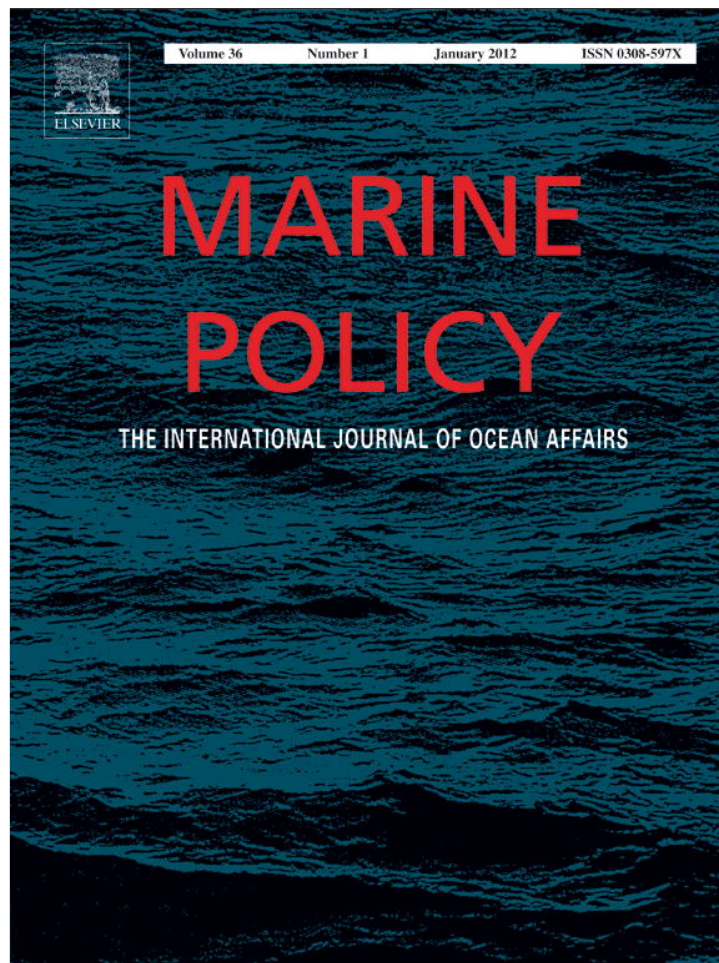


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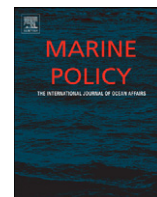
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An overview of Fiji's fisheries development

Amanda DeMers, Viktoria Kahui*

University of Otago, Department of Economics, PO Box 56, Dunedin 9054, New Zealand

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ABSTRACT

Development and societal changes in the twentieth century have transformed the nature of fishing in Fiji. This paper attempts to consolidate a large amount of decentralized work on the development of Fijian fisheries to address the long-term sustainability and economic viability of Fiji's marine resources. Taking a broad perspective, this paper provides an overview that connects the historic context of Fiji's fisheries development with economic policy to address overfishing. The analysis highlights the need for an overarching management approach that encompasses the integration of Fiji's offshore and inshore fisheries to ensure the achievement of long-term economic benefits.

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It was said that Tokairabe...

had made some magic fish-hooks which no fish could resist, and that thus had he obtained over-lordship of all the fish in the seas.

From a Fijian Dakuwaqa Legend, as told by T. R. St. Johnston [1]

1. Introduction

In the past century and a half, enabled by technological innovation and limited regulation, the world's major fisheries have been extensively developed [2]. In many places, this process of development has contributed to significant negative environmental, socioeconomic, and cultural consequences. Fiji is no exception to this broader historical trend. Efforts at fisheries management, though not without their isolated successes, have largely failed to mitigate the major problems facing Fiji's fisheries.

Growing concern for the state of the world's fisheries has led to a recent surge of research into the history, ecology, economics, and management of fishing. However, most of the growing body of work focuses on the fisheries of the Northern Atlantic Ocean or the North Sea – where the consequences of fisheries development have become increasingly clear over the last century – and largely ignores fisheries in other regions. For countries and regions where

fisheries development occurred more recently, the literature is much less complete [3]. Fiji is one such country, as are most Pacific island states, where better and more accessible research could help policy-makers to better manage the fisheries that are so important to the Fijian environment, economy, and culture. This paper attempts to consolidate a large amount of decentralized work on the development of Fijian fisheries to address the long-term sustainability and economic viability of Fiji's marine resources.

The dearth of information on fisheries development in Fiji and the wider Pacific impedes policy-informing research as data, if available, are often outdated and “of suspect quality” [4]. With limited local funding and publishing opportunities, even recent works by local researchers often appear only in academic theses and gray literature put out by regional organizations [4]. Robyn McDowell's 1993 Fiji Fisheries Bibliography [5] and Joeli Veitayaki's 1994 overview of Fijian fisheries [6] made information on the subject more accessible, but what remains missing is a succinct up to date overview connecting the historic and cultural context of Fiji's fisheries development with economic policy.

Thirty years ago, historian Kerry Howe famously diagnosed the field of Pacific island history with “monograph myopia” [7]—a condition in which individual historians published highly specialized accounts of one aspect of Pacific history and failed to relate those focused, detailed studies to the wider historiography. The body of work on the world's fisheries, and the Pacific's fisheries especially, suffers from a similar ailment. Most writings on the Pacific fisheries are narrowly focused technical papers

* Corresponding author. Tel.: +64 3 479 5278; fax: +64 3 479 8174.
E-mail address: Viktoria.Kahui@otago.ac.nz (V. Kahui).

rather than broad studies of trends and policies. More recently, literature on strategic governance issues of tuna industries in the Pacific has emerged [8], and while some of these papers address Fiji in particular, the focus almost always lies on aspects of either Fiji's onshore or offshore fisheries [9]. In a small way, this article attempts to redress this by taking a broad perspective, discussing both Fiji's inshore and offshore fisheries. While the histories and development of those two entities are very different, a holistic overview of Fiji's fisheries, encompassing both its inshore and offshore fisheries, can inform policy decisions, contribute to the development of a general philosophical approach to sustainable fisheries development in Fiji and act as catalyst for further research into key policy questions.

The 1987 Brundtland Report, also known as *Our Common Future*, heightened international awareness of the need for responsible and sustainable use of natural resources in the process of development. The oft-cited report culminated in a key statement that defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [10]. For fisheries, an integrated approach to sustainable management was laid out in the 1995 FAO Code of Conduct for Responsible Fisheries, which detailed the criteria for sustainable fisheries in terms of maintaining ecosystem quality, satisfying human economic and social needs, and ensuring the long-term viability of fisheries resources [11].

Since then, a large body of literature has developed exploring the guidelines and founding principles for sustainable fisheries, and various frameworks have emerged to address the economic, social, and environmental dimensions [12]. A prudent framework sufficiently addresses the effects of fishing efforts on the international, national, and local economies; the natural environment; and society as a whole. As has been the case in other parts of the world, the development of Fiji's fisheries has contributed to problems as different as marine pollution and loss of traditional knowledge. However, environmental and economic problems related to overfishing are the most represented in the current body of literature, and, in many ways, the most pressing, with implications for ecosystem health, economic development, and food security.

The analysis in this paper focuses on the pressing issue of overfishing. Insight into effective ways to manage Fiji's fisheries can be found in the history of fisheries management in Fiji and around the world. The South Pacific is only the most recent region to experience the negative consequences of fisheries development [13], and as such, may have the luxury of learning from the successes and failures experienced in other parts of the world. Some parallels can be drawn to the development of fisheries management in New Zealand in particular, the comparison of which suggests the sustainable and successful development of Fiji's fisheries has to be addressed by a holistic management approach that encompasses the integration of Fiji's offshore and inshore fisheries to achieve long-term economic benefits. If Fiji and its Pacific neighbors are to manage their fisheries effectively, it will be important for them to act decisively and pre-emptively.

The following section provides a historic overview of Fiji's fisheries from pre-War development to the challenges faced by modern Fiji, while Section 3 connects the historic context to economic policy. Section 4 concludes.

2. Overview of Fiji's fisheries development

While fish and other marine resources have been an important component of the Fijian diet since human arrival in the island group [14], the utilization of these resources has been limited by a

lack of technology and relatively low population density. Like those of most Pacific island states, Fiji's fisheries were late to develop [15], and, even today, remain relatively undeveloped compared to those in the North Atlantic, North Sea, and Northern Pacific. The following provides an overview of Fiji's traditional fisheries before the Second World War, its development thereafter with the intensification and commercialization of inshore fishing efforts and the industrialization of the offshore tuna fishery, and an analysis of the current issues pertaining to modern Fiji.

2.1. Pre-war Fiji

Traditional fishing in Fiji was both low-technology and low-intensity, having little impact on the natural environment¹. Fishing effort was concentrated in reef and coastal areas, although groups of men sometimes used rafts and other vessels to fish further out at sea [14]. Fishing was mostly done at a subsistence level, although there is evidence of a small fish-trade in Fiji [6]. Even as late as 1940, James Hornell, a British zoologist and ethnographer, noted that Fijians lived and fished "for to-day [sic] alone," eating whatever fish were available on the day [16].

Fish and other marine resources were community assets, and groups knew very well "the exact boundaries of their fishing grounds" [15]. These resources were managed by custom [16] with land-holding families, or *matangali*, controlling important local fishing areas, called *qoliqoli* [17]. Outsiders needed permission to fish within these areas, and rules limiting or forbidding fishing for certain species could be made by chiefs or fishermen when necessary [17]. This system of folk management allowed fishing to be carried out at sustainable levels to the benefit of the local community. While traditional Fijian fishing practices included occasional sea trips by groups of men fishing for tuna and other offshore species, the bountiful tuna fishery of the south-western Pacific Ocean remained largely untouched until the mid-twentieth century [18].

2.2. Post-war Fiji

After the Second World War, Fiji's inshore fisheries became increasingly commercialized and, though not industrialized, more technologically advanced. International organizations such as the Food and Agriculture Organization (FAO) and the South Pacific Commission (SPC) played a leading role in this early development, encouraging the slow transition from traditional subsistence fishing practices to more efficient fishing practices and a larger local fish trade. These organizations also financed research into fisheries productivity and trained fishermen and fisheries managers [19].

Fiji's national government and other local institutions such as the Fiji Development Bank (FDB) joined in at the beginning of the 1970s to encourage the development and commercialization of even Fiji's remotest fisheries training Fijians to fish and to build and repair fishing boats [20]. Personal savings and investment in modern fishing technologies have also significantly contributed to the dramatic increase in inshore fishing capacity [21]. While inshore fisheries have not been developed to the extent of the highly industrial offshore tuna fishery, the introduction of technology such as "faster fishing boats, ice facilities, and navigational equipment" has increased productivity and encouraged overcapacity [6]. The overcapacity problem of Fiji's inshore fisheries

¹ It is worth noting that shark fishing, turtle fishing, and collecting shellfish have historically been practiced in Fiji, as well as fishing in inland waters such as rivers and ponds.

has been exacerbated by Fiji's modern fisheries policies, with subsidies and loans from the national government and the Fiji Development Bank, and with policies that encouraged the commercialization of the inshore sector with an aim toward increasing fish supply for domestic and international markets [6]. The 1942 Fisheries Act – some of Fiji's earliest fishing legislation – and its numerous revisions set some limits on fishing activity by outlining rules for “fish sizes and fishing equipment, licenses, and periodic seasonal restrictions” [6]. However, the Act emphasized the commercial aspects of fishing rather than the sustainable utilization of the inshore resources.

Despite the considerable development of Fiji's inshore fishing sector in the latter half of the twentieth century, it is important to note the enduring importance of subsistence fishing in Fiji. Occurring in both rural and urban areas [22], modern subsistence fishing in Fiji remains very similar to traditional fishing efforts, using “extensive and sophisticated understanding” of the marine environment rather than modern technology [6]. While the aforementioned regional and national efforts were designed to transform subsistence fishing efforts into more profitable, commercial operations, and while it is estimated that subsistence fishing efforts decreased toward the end of the twentieth century [6], subsistence fishing, and the right of Fijians to practice it, seems set to remain relevant to fisheries management in Fiji for the foreseeable future.

The development of Fiji's offshore fisheries began in the interwar years, when Japanese fishing vessels ventured southward toward Micronesia, and even as far south as Fiji [23]. These efforts, however, were interrupted by the Second World War and the resulting constraints on both equipment and navigation. Following the war, damage to the Japanese fishing fleet, industrial infrastructure, and economy – as well as navigation and fishing restrictions for the Japanese – delayed further Japanese fishing activity in the Pacific until the mid-1950s [18].

This was not the case for fishing enterprises from the United States. After waves of returning American soldiers sang the praises of the abundant seas of the South Pacific, Americans established themselves in the south-western Pacific tuna fishery with the founding of the Van Camp Seafood Company tuna cannery in Pago Pago, American Samoa. Fishing vessels, both American and otherwise, would fish throughout the Pacific, including in the waters surrounding Fiji, and process their catch at Pago Pago [18]. By 1955, a Japanese fishing presence had returned to the south-western Pacific, and the international industrial tuna fleets from America and Japan had introduced technology like sonar, refrigeration, and highly efficient fishing equipment to the region [24].

The second important stage of development for the south-western Pacific tuna fishery began in the mid-1960s and continued into the 1980s and featured increased involvement by some Pacific island countries in the industrial tuna fishery. In Fiji, this began in 1964, with the incorporation of the Pacific Fishing Company (PAFCO) fish-processing base Levuka [25]. PAFCO helped to finance and equip local fisheries ventures and organized catch for re-export to markets in the United States and Japan [25]. This important development was followed twelve years later with the creation of the government-sponsored Ika Corporation, which was a domestic fishing company designed to supply PAFCO with tuna [26].

In addition to the expansion of PAFCO – which built canning facilities in 1970 [25] – and the Ika Corporation, the 1970s also saw the emergence of new international players like China, South Korea, and Taiwan fishing for tuna in the South Pacific [27]. After the passing of the 1977 Marine Spaces Act, Fiji was able to levy fees from Distant Water Fishing Nations (DWFNs) operating within Fijian waters [28]. This right was re-affirmed in the United Nations Convention on the Law of the Sea, (UNCLOS), which came

into force in 1994. Also in the 1990s, the growing demand for tuna to make sushi and sashimi in Japan and around the world was a boon to Fiji's domestic tuna industry, and PAFCO became an important center for frozen tuna shipment out of the south-western Pacific [21].

Though the domestic industry has faced challenges since its inception, and domestic involvement may still be considered limited by developed world standards, Fiji's level of domestic involvement has exceeded that of other Pacific island states—and most developing states in general [29]. The tuna fishery is of paramount importance to the Fijian and regional economies. A 2001 study by the Asian Development Bank (ADB) “showed that the industrial tuna fisheries produce about ten times the amount of fish being produced by all of the other fisheries of the region combined” [18]. With a marked decline in yield in nearly all of the world's tuna fisheries, the tuna fishery of the south-western Pacific remains the glaring exception, at least for now [30].

The past half-century has seen a dramatic shift in Fiji's fisheries, from low-intensity, community-based traditional activity to small-scale commercial inshore operations and an internationally-led, industrialized tuna fishery. These changes have resulted in increased fishing capacity and aided Fiji's development [6]. Future developmental goals, as laid out by the SPC, include growing and developing the inshore commercial fishing sector, upgrading local processing capabilities for both canned and frozen fish, and training personnel in the areas of fishing, fisheries management, and the building and repair of fishing vessels and equipment [21]. Today, as they have for millennia, fish and other marine resources “provide a vital source of food and income for many coastal communities,” [31] and if developed prudently, Fiji's fisheries could play an important role in the island country's future.

2.3. Modern Fiji

Development and societal changes have transformed the nature of fishing in Fiji. In the inshore fishery, the associated problems mirror those experienced in myriad other places when common property marine resources, traditionally controlled by local communities, have been developed for modern usage. Limited technology combined with intimate knowledge of the biological characteristics of Fiji's coastal species and folk management of local fishing areas ensured the sustainable utilization of Fiji's coastal marine resources. Urbanization and the commercialization of fishing activities, however, led to the destabilization of those traditional management structures, effectively turning Fiji's previously restricted coastal resources into open access resources.

Hardin's famous 1968 illustration of the tragedy of the commons [32] and Gordon's 1954 analysis of an open access fishery [33] expose the fundamental causes of overexploitation. Unrestricted access to a scarce resource leads to economic inefficiency as fishers individually lack incentive to respond to detrimental effects on stock levels, and subsequently on future catch rates and economic returns. The resulting overcapacity threatens the long-term viability of marine resources. In areas where overfishing has occurred, even experienced fishermen working reasonable hours and having sufficient market access may end up living below the national poverty line [34]. In the last decade or so, these problems, traditionally confined to Fiji's few urban centers, have spread to rural areas, where fishing effort has increased “to meet the demands of an economy increasingly focused on monetary goods and services” [9]. Rural Fijians, who lack employment opportunities outside of the artisanal fishing sector, are especially hurt by overfishing [35].

While overfishing in Fiji's inshore zone has been fueled by high fish prices, new fishing technologies, and increased population

density [9], many also cite cultural changes as the cause of the unsustainable nature of Fiji's fisheries. "Young people" place less value on traditional management systems and the views of local chiefs and elders [36], viewing the sea primarily through a commercial lens rather than a traditional one [6]. These cultural changes are closely related to the breakdown of traditional structures in urban areas, and are especially notable in and around Suva [37].

In 1989, the Fiji Fisheries Division attempted to address the nation's lack of conservation-related fisheries legislation by surveying and mapping Fiji's *qoliqoli* [38]. Over the next decade, the Division helped to establish – or re-establish – several Locally Managed Marine Areas (LMMAs) in an effort to stem the "deterioration" of inshore fisheries [6]. The creation of FLMMMA – the Fiji Locally Managed Marine Area network – in 2000 is a testament to the observable success of this management regime, in which local, national, and international players cooperate to manage local fisheries resources. In recent years, FLMMMA's accomplishments have been recognized by international bodies such as the Pacific Biodiversity Roundtable and the South Pacific Regional Environmental Program, who use the FLMMMA as a model for future arrangements [39]. While the explicit recognition of traditional structures addresses some of Fiji's management objectives, it does not fully address concerns that have arisen wholly or partially as a result of fisheries development [6]. Fisheries exploitation in Fiji's inshore zone has been modernized, intensified, and commercialized in the twentieth century, and the overexploitation is still a pressing issue.

Overfishing has certainly not been isolated to Fiji's inshore fishing sector. In the last twenty years, as tuna stocks in other oceans have declined, there has been a significant trend in tuna fishing away from heavily fished regions like the North Atlantic and the North and Eastern Pacific and toward less exploited regions like the Indian Ocean and the Western and Central Pacific Ocean (WCPO). Nearly sixty percent of the world's yellowfin, bigeye, albacore, and skipjack, were caught in the WCPO in 2008 [40]. The first three of these species, yellowfin, bigeye, and albacore, are either fully exploited or overexploited in the WCPO [41]. The fourth species of tuna, the skipjack, might be slightly underexploited according to the Food and Agriculture Organization's 2008 Report, but because skipjack tend to school with the overfished yellowfin in the WCPO, the sustainable expansion of this fishery may not be possible [42]. In his work on the Pacific region, Donald B. Freeman makes the strong statement that, "in the first decade of the twenty-first century, several species of Pacific tuna...have been overfished to the point at which the collapse of the entire tuna fishery is a strong possibility" [43].

While in the last decade major concern has been shown by international and regional organizations for the health of the tuna stocks of the WCPO [42], voices from inside the region have been calling for changes to the status quo that would see more benefits from the tuna fishery allotted to the Pacific island countries between which the tuna migrate. The general consensus is that DWFNs benefit most from the region's offshore fisheries, and that the region's small island developing states – who hope that the exploitation of tuna within their waters will aid economic development – benefit relatively little [29].

In addition to continued attempts at developing domestic offshore capabilities by many Pacific island states, strides toward increasing these benefits have taken the form of establishing Exclusive Economic Zones (EEZs), in which foreign fishing vessels would have to pay licensing and catch fees. However, due to the "superior negotiating position" of powerful fishing countries, fees remain low [44], with some estimates of Pacific island states receiving approximately 4 percent of gross revenue [45]. Maintaining these low fees has often been used by Pacific island policy-makers as a bargaining tool to "stimulate joint ventures

and other forms of collaboration with the foreign interests" [46] or even to increase foreign aid [45].

The main obstacles to sustainability in the tuna fishery of the WCPO are the states' limited ability to take a united stance in international negotiations and coordinate fishing measures effectively. Most Pacific island states are members of the Forum Fisheries Agency (FFA), which was founded shortly after the establishment of the EEZs in 1979. The purpose of the FFA was to coordinate fisheries policies among island states and aid negotiation with DWFNs [47]. However, the FFA does not have any management responsibilities *per se*; it merely facilitates management decisions taken individually by the Pacific island states, which are reluctant to surrender sovereignty over their fisheries [48]. In 2004 the Western and Central Pacific Fisheries Commission (WCPFC) was established mirroring existing efforts in the Atlantic by the Inter-American Tropical Tuna Commission, the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Commission for the Conservation of Southern Bluefin Tuna to manage tuna regionally [42]. The WCPFC is "responsible for ensuring the long-term sustainability of highly migratory fish stocks in the WCPO and the promotion of the optimum utilization of these stocks" [24]. For the most part, these efforts have not been successful in preventing overfishing of the world's tuna. ICCAT has long been criticized for its ineffectiveness [50], and within five years of its creation, the WCPFC was criticized for its failure "to reach management decisions on bigeye and yellowfin stocks" [42].

In 2002, in addition to its participation in international and regional arrangements, Fiji created a national Tuna Management Plan, which set new catch limits for bigeye, albacore, and yellowfin taken in the Fijian EEZ and limited the number of long liners operating within Fijian waters [51]. The plan also set new criteria for licensing, reporting, and monitoring of fishing activities [28]. While the success of the plan is still being debated by Fijian policy makers [51], it is widely believed that national and regional tuna management arrangements such as the FFA and the WCPFC will fare not much better than their Atlantic predecessors [52]. They are instrumental in providing a focal point for intra- and international tuna fisheries issues but a lack of political commitment and national capacity to coordinate and enforce tough fisheries decisions [53] leads to the familiar open access symptoms of overexploitation and overcapacity. One study of the WCPO revealed that there was overcapacity in "all major national fleets operating in the area" [49].

In addition the WCPO tuna fishery is plagued by illegal fishing, some of which is made up of unreported catch by vessels legally fishing in the region, and the rest perpetrated by pirate fishing vessels who answer to no one [29]. It is estimated that as much as ten percent of tuna catches in the WCPO could be illegal, unreported, and unregulated catches [42], the latter of which occur in the high seas adjacent to the Pacific islands' EEZs. Customary international law identifies fishing as one of the freedoms of the high seas and attempts to create legally-binding agreements on the high seas that have so far met resistance [54]. Noteworthy exceptions are passages in UNCLOS, which require states to cooperate in the management of shared fisheries that migrate between EEZs and adjacent high seas [54]. In 1989 driftnet fishing was banned in the South Pacific, including the high sea pockets between the Pacific islands' EEZs [6], and two of the high sea pockets are now completely closed to tuna fishing [55]. The Pacific Island states continue to push plans ahead to close large areas of adjacent high seas to all tuna fishing, including the high sea pockets, to save rapidly depleting stocks.

3. Discussion

There is a need for advanced policy to address the pressing issue of overfishing, which pertains to both Fiji's inshore and

offshore fisheries. Much of the current body of work on Fijian and Pacific fisheries criticizes current fisheries policies that emphasize increasing production over conservation and sustainable use [56]. Optimism for the future of Fiji's inshore fisheries may be inspired by the establishment of the traditional LMMAs that have recently re-emerged. However, the success of such traditional areas is overshadowed by the lack of a comprehensive fisheries management approach that addresses the issues of overcapacity and poor catch rates more rigorously, especially in urban areas where traditional structures have dissolved. In addition to providing relatively low benefits to inshore fisherman, the continuation of overfishing in Fiji's unique inshore reefs could, in the future, affect one of Fiji's most important revenue streams, the tourism industry, which is heavily driven by the beauty and uniqueness of Fiji's natural environment [57].

Similarly, the unsustainable exploitation of Fiji's offshore tuna resources is starting to cause considerable concern amongst stakeholders. Despite sweeping changes to the jurisdiction of coastal nations in the late 1970s, Fiji and other Pacific island states "have found it tremendously difficult to convert these tenured rights into concrete economic gains" [45]. As most of the benefits of industrial tuna fishing in the WCPO accrue to DWFNs, increasing the appropriation of economic rent to Pacific island nations is seen as the panacea to the region's economic development and looming problem of tuna overfishing.

The current state of both Fiji's inshore and offshore fisheries highlights the need for an overarching fisheries management vision that reflects the unique political, cultural, and biophysical environment. In developing this new, holistic approach to fisheries management, Fiji can draw on a myriad of fisheries management solutions ranging from input controls (such as gear restrictions and seasonal/area closures) to output controls (which focus on limiting the total amount of catch). Fisheries managed by comprehensive quota systems to limit output have been shown to halt and even reverse declining fish stocks [58], and the experiences by New Zealand's history of fisheries development in particular may be valuable to Fiji.

New Zealand introduced an individual transferable quota (ITQ) system in 1986 to manage its rapidly deteriorating coastal fish stocks. Among a multiplicity of objectives sought by the government, the eventual unification of New Zealand's deep-water and inshore management was at the forefront of its vision. With the introduction of the quota management system, the ITQ came to represent a well-defined right to harvest a percentage share of an allowable catch, where owners can buy or sell parts of their ITQ holdings in order to increase or reduce their landings. The underlying economic theory is that owners of such ITQs may trade or lease them freely in a competitive market generating price signals, which provide important information on the profitability and sustainability of the fishery. The ITQ system addressed the government's major objectives for the inshore fishery, rationalizing its overcapitalized fleet and reducing catch rates to allow stressed fish stocks to recover. The government's goals for the deep-water fisheries were to expand the domestic industry, which would eventually replace foreign fleets without falling into the trap of over capitalization [59]. New Zealand's fishing industry is now a billion dollar export earner and has been ranked twice as the most sustainably managed fishery in the world [60].

New Zealand's approach to unifying its inshore and offshore fishery under a comprehensive management vision to achieve long-term economic benefits from the marine resources may provide a generic blueprint to the management of Fiji's fisheries. The initial allocation of quotas by auctioning or granting and the characteristics of quotas in terms of length of tenure, tradability and associated limits will have to be tailored to the ecological, economic, and social environment of Fiji. There are also some marked differences between Fiji and New Zealand, which are

likely to affect the structural functioning of a quota system. Firstly, Fiji has LMMAs in place, explicitly recognized traditional management structures, and policy-makers will have to explore effective ways to balance strong harvesting rights with traditional fishing rights. New Zealand has struggled with the integration of the commercial and non-commercial rights of its indigenous people, the Maori. The recognition of customary area management tools and other area-based protection measures (such as marine protected areas) continue to cause conflict with quota holders, who strongly oppose any reductions in fishable areas, fearing it will increase costs and erode the value of their quotas. The key issue for Fiji is to embed traditional harvesting and conservation structures within the quota system prior to its establishment so that market values of quota reflect future economic rents efficiently.

Secondly, unlike most of New Zealand's valuable deep-water fish stocks, which range within its 200 mile jurisdiction zone, Fiji's management of its offshore resources is made more difficult by the migratory nature of tuna and the geopolitics of the WCPO region. Even if Fiji was able to expand offshore fishing capacity, increase fish-processing capabilities, and reap the full benefits of licensing and catch fees, the sustainable exploitation of tuna from the WCPO would depend on the participation of all Pacific Island nations. Despite international, regional, and national agreements in the Pacific – many of which have been put in place recently – and an array of controls to limit fishing mortality, it is difficult for key players to commit to management arrangements given the lack of enforceability of regulatory measures. Heavily fished tuna stocks in the North Atlantic and the North and Eastern Pacific, and the collapse of Bluefin Tuna in particular, reflect the difficulty of managing a transboundary resource. Pacific nations face the challenge of establishing a unified organization with strong jurisdictional powers based on collective decision making and highly effective institutional measures to manage harvest activity. Most tuna stocks in the WCPO are still relatively healthy and there is potential for sustainably caught tuna as a value added product on the world market. Focusing and capitalizing on consumer demand niches might be a first step to catalyzing cooperation in the Pacific to manage supply. Regional forums such as the FFA and the WCPFC are ineffective; instead favorable conditions for strong commercial alliances between the key players should be established, such as by a well managed intra-Pacific quota system. The problems for sustainable tuna exploitation seem insurmountable; yet, it is precisely because of what is at stake that will force Fiji and other Pacific island states to identify and utilize the opportunities for economic growth.

The discussion provides an insight into some of the major difficulties and opportunities Fiji faces in tackling its overfishing problem. Fiji's next step should focus on the identification of the short and long-term economic, social, and environmental goals of its fisheries development. For example, the active involvement of traditional management techniques in a quota system and the appropriation of maximum economic returns from offshore tuna resources are likely to be important objectives alongside other social and environmental goals, which need to be clearly identified and prioritized. A comprehensive management vision borne out of these goals needs to be drafted and legally enshrined before technical documentation can be produced to consolidate existing information on Fiji's fisheries, identify knowledge gaps, and provide a working basis for the chosen framework.

4. Conclusion

The overview presented in this paper provides a critical assessment of Fiji's fisheries history and the challenges Fiji

currently faces. Fiji has taken some innovative steps to address some of its coastal fisheries problems and has been relatively successful at increasing its involvement in the offshore tuna fishery. However, Fiji lacks an overarching vision for its economic development that addresses overfishing in both its inshore and offshore fisheries. Its success will depend on developing effective measures that address the fundamental economic causes of overfishing and overcapitalization.

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