



Resource Management in Asia-Pacific

Working Paper No. :39

Rethinking Fisheries Policy in the Pacific

Michael Pretes

Research Scholar
Department of Human Geography
Research School of Pacific and Asian Studies
Australian National University

Elizabeth Petersen

Research Fellow
Resource Management in Asia-Pacific Program
Research School of Pacific and Asian Studies
Australian National University

The correct citation for this publication is:

Author: Michael Pretes and Elizabeth Petersen

Year of Publication: 2002

Title: Rethinking Fisheries Policy in the Pacific

Series: Resource Management in Asia-Pacific Working Paper No. 39

Publisher: Resource Management in Asia-Pacific Program

Research School for Pacific and Asian Studies

The Australian National University

Place of Publication: Canberra

ISSN – 1444-187X

Resource Management in Asia-Pacific

Working Papers

The Resource Management in Asia-Pacific Working Paper series seeks to provide readers with access to current research on environmental and resource issues in the Asia-Pacific. Working Papers produced by the Program aim to facilitate discussion and debate on critical resource management issues in the area, and to link scholars working in different disciplines and regions.

Publication as a 'Working Paper' does not preclude subsequent publication in scholarly journals or books, indeed it may facilitate publication by providing feedback from readers to authors.

Unless otherwise stated, publications of the Resource Management in Asia-Pacific Program are presented without endorsement as contributions to the public record debate. Authors are responsible for their own analysis and conclusions.

Resource Management in Asia-Pacific Program
Research School of Pacific and Asian Studies
The Australian National University
Canberra ACT 0200
Tel: +61 2 6215 9978
Fax: +61 2 6215 4896
Email: rmap@coombs.anu.edu.au

Rethinking Fisheries Policy in the Pacific

Abstract

One of the most hotly debated issues of fisheries policy in the Pacific is whether or not public funds should be used to finance commercial tuna fishing ventures. Many commentators from within the region argue for public investment in the industry to stimulate domestication. In this paper we propose an alternative policy in which tuna fishing revenues are invested offshore through a trust fund, rather than re-invested in domestic commercial fishing activity. Trust fund earnings could then be used to stimulate and support private sector initiatives and alternative economic activities. We use the example of Kiribati, one of the poorer Pacific island countries, to illustrate how offshore investment through a trust fund has succeeded in generating substantial revenues, when most Kiribati government corporations, including a state-owned fishing enterprise, have performed poorly.

Introduction

The management of fisheries revenues in the Pacific has been the subject of intense debate. Many fisheries specialists in the region argue that at least some fisheries revenue should be diverted from the government's consolidated revenue (where revenues have often been wastefully spent on consumption or poor quality investments) into government-operated fishing ventures. In this paper we critique this approach and provide an alternative proposal that, if managed properly, we argue will support strong and sustained economic development in the region.

The Pacific Ocean covers 180 million km², more than a third of the earth's surface and half of the earth's ocean surface. About 200 high islands and 2500 low islands and atolls are scattered across the western half of the Pacific Ocean, and comprise the 22 countries and territories of the Pacific islands (Figure 1). The Pacific islands have three main cultural groups.¹ The Melanesians settled the high islands of Fiji, New Caledonia, Papua New Guinea, the Solomon Islands, and Vanuatu. These islands are rich in natural resources such as minerals, petroleum, and forests. Melanesia contrasts with the relatively resource-poor islands of Polynesia (American Samoa, Cook Islands, Easter Island, French Polynesia, Niue, Pitcairn, Samoa, Tokelau, Tonga, Tuvalu, and Wallis and Futuna) and Micronesia (Federated States of Micronesia, Guam, Kiribati, Marshall Islands, Nauru, Northern Mariana Islands, and Palau). The Pacific islands' exclusive economic zones (ocean area of national jurisdiction within 200 miles of their coastline as delineated in the United Nations Convention on the Law of the Sea) exceed landmass by an average factor of 300 to 1 (World Bank, 2000). Hence, the Pacific Ocean has been a significant influence in shaping the culture and economy of these nations. This is especially true for Micronesia and Polynesia, where ocean area exceeds landmass by an average factor of 4,689 and 23,734 to 1, respectively. Coastal marine resources provide an important source of food, income, culture, and recreation. Offshore marine resources are frontiers of high economic and strategic potential.

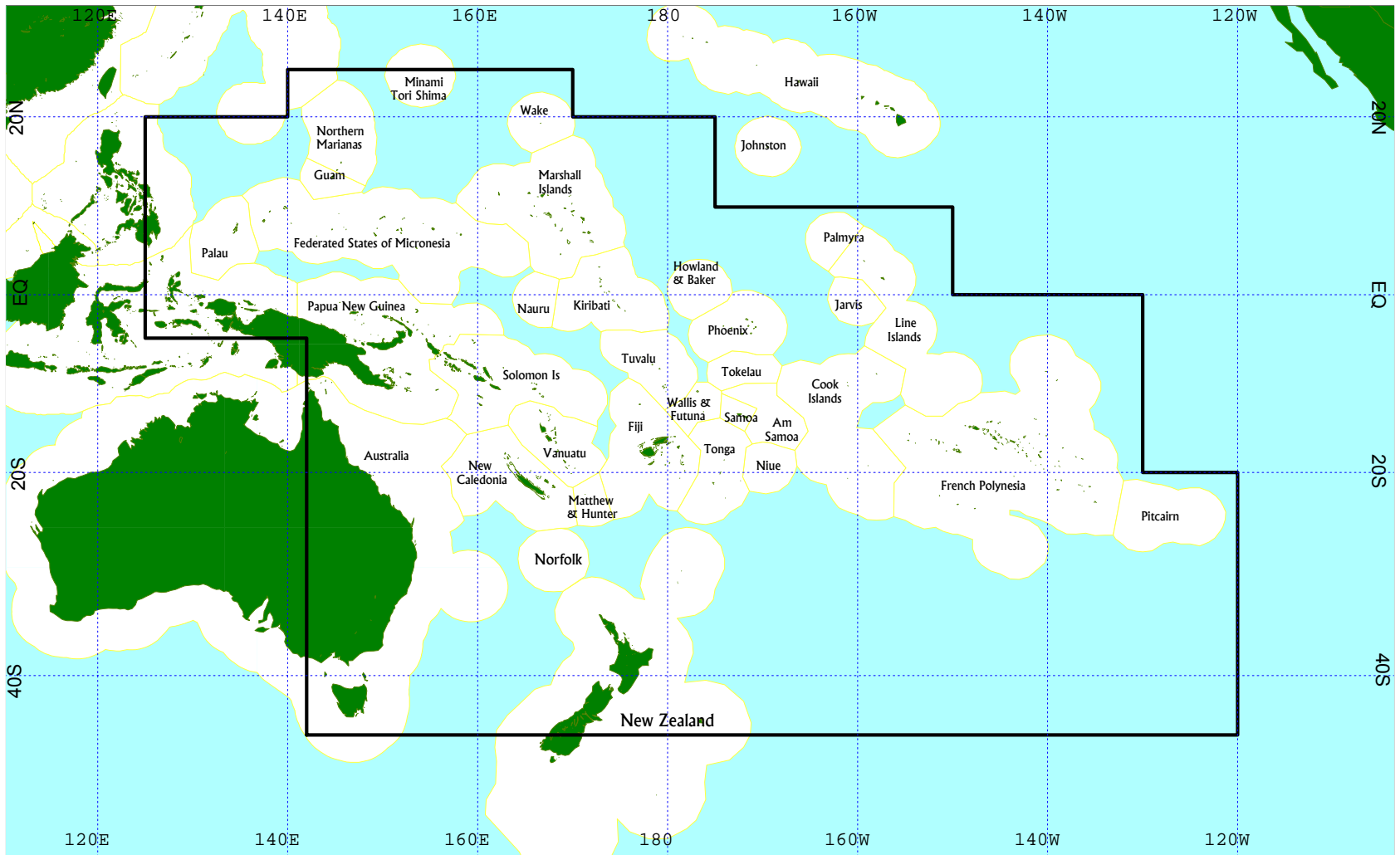


Figure 1. The Western and Central Pacific region: exclusive economic zones (Source: Secretariat of the Pacific Community)

Today, the world's fisheries are largely fished to capacity, and northern hemisphere nations are increasingly sending their fishing fleets south in search of fish (Hurry, 2001). The Western and Central Pacific² is home to the world's largest and most valuable tuna fishery, the only significant natural resource for most Micronesian and Polynesian states. The ten distant water fishing nations that fish in the region harvest 86% of the total tuna catch (SPC, 2000). The main distant water fishing nations are Japan, Taiwan, South Korea, and the United States, although China and European fleets are becoming increasingly dominant. The domestic fishing industry in Pacific states is poorly developed, and access fees dominate economic benefits from the fishery. Revenue from the fishery constitutes a significant portion of government revenue, export earnings, and gross national product for many of the Pacific island countries (Table 1). In the absence of fishing revenues, most Pacific island states depend on the export of price-volatile agricultural commodities such as copra, as well as on donor aid and remittances from overseas nationals.

Table 1. Importance of the tuna industry for selected Pacific Island countries

| | Government revenue (%) | Exports (% of total value) | GDP (%) |
|--------------------------------|---------------------------|-------------------------------|-------------|
| Cook Islands | ... | 41 (1999) | ... |
| Fiji | ... | 7.0 (1997) | 1.4 (1998) |
| Federated States of Micronesia | 29 (1998) | 92 (1997) | 15.5 (1990) |
| Kiribati | 61 (1998) | 53 (1993) | 9.5 (1993) |
| Marshall Islands | 25 (1993) | 94 (1997) | ... |
| New Caledonia | ... | 27 (1996) | ... |
| Palau | 5 (1993) | - | ... |
| Papua New Guinea | 2 (1999) | 0.6 (1999) | ... |
| Samoa | ... | - | 6.2 (1999) |
| Solomon Islands | ≈ 5 (1993) | 20.1(1993) | 9 (1993) |
| Tonga | ... | 18 (1998) | ... |
| Tuvalu | ≈ 35 (1993) | - | 5 (1993) |
| Vanuatu | - | <1 (1993) | ... |

Source: Petersen (2002a).

Notes: ... = not available
 - = negligible or zero
 ≈ = approximately
 < = less than

The focus of this paper is on the management of fisheries revenues (primarily tuna) received by Pacific islands governments. In the next section we discuss the approaches for managing fisheries revenue that have been suggested and that are currently implemented, noting the general failure of these approaches to achieve sustained financial success. In contrast, we suggest that access fees to the fishery be maximised (instead of traded cheaply for foreign direct investment and donor aid), and that these rents be deposited into a trust fund that is invested offshore, with trust fund earnings being distributed to encourage a variety of private sector and alternative economic initiatives. The third section is a case study of Kiribati, one of the poorer Pacific island countries. The poor performance of Kiribati's public fishing investments and other public enterprises is compared with the sustained successful performance of its trust fund. An analysis of the size of fishery revenues and potential dividends for each Pacific island country is presented in the fourth section. The fifth section concludes the paper with a summary of policy options for resource revenue investment in the Pacific.

Managing Fishery Revenues

Current approaches

Currently, the Pacific island countries are receiving access fees of approximately 3% of gross fishing revenue (Gillett *et al.*, 2001; Schurman, 1998).³ This is low when compared with studies on the potential rent that could be accrued from the fishery. Bertignac *et al.* (2000) argue that the fishery rent (gross revenue minus costs) for the fishing industry as a whole is around 13% of gross revenue at 1996 levels of effort, and if effort level and the fleet structure of the fishery were optimised it could be close to 40%. Iheduru (1995) notes with exasperation that the European Union is only paying African countries access fees between 18% and 45% of the value of the catch, that is, between 6 and 15 times more than the Pacific island countries receive in access fees. The Australian Fisheries Management Authority charges Australian bluefin tuna fishers a management fee that is based on cost recovery alone of approximately 11% of gross revenue (AFMA, 2000). These examples illustrate the relatively low access fees charged by Pacific island states.

In 1982, the United Nations Convention on the Law of the Sea (UNCLOS III) was signed, establishing an exclusive economic zone of 200 miles, giving coastal states territorial control of large marine areas (the Convention was not ratified until 1995). Pacific island countries hoped to benefit from the enlargement of their ocean territory by charging fisheries access fees to distant water fishing nations. These hopes were frustrated both by the superior negotiating position of most distant water fishing nations (notably Japan) and by the initial refusal of the United States to recognise the Pacific island states' claims to tuna in the exclusive economic zones due to the delay in ratification of UNCLOS III and on the basis that tuna are a migratory species (Schurman, 1998).

These difficulties led the Pacific island states to adopt, in the 1990s, a new policy of encouraging domestication of their fishing industry. The domestication policy was guided by a philosophy of "resource nationalism" under which states attempted to control, and even nationalise, important economic sectors. This philosophy was inspired by many factors, including anti-colonial feelings, the need for local employment, and by a feeling that distant water fishing nations had both lacked respect for the islands' exclusive economic zones and that they had out-manoeuvred island states in access fee negotiations (Schurman, 1998). The domestication policy has included large-scale public investments in fishing activities (such as vessels, port infrastructure, and transshipment bases) and incentives for locally-based foreign direct investment. Many commentators from within the region now assume that the Pacific island countries can duplicate distant water fishing nation activities to yield greater economic benefits than those received through a policy of maximising access fees, and they advocate a policy of direct public investment in a domestic fishing industry (Batty, 2001; Kuk, 2001; Tiller, 2001). To date such a policy has yielded few benefits. The Asian Development Bank (ADB), whose mandate includes the Pacific, noted that all the fisheries investments that have been operating for more than two years, with only a few minor exceptions, have failed financially, some repeatedly. There has been only further evidence of financial failure in the industry since this ADB report (ADB, 1997; Kiribati, 2000b; Schurman, 1998; SPC, 2000).

Many commentators external to the region argue that it is folly to assume comparative advantage in such a high-risk, high-skill, and highly capital intensive industry (ADB, 1997; CIE, 1999; Duncan & Temu, 1997; Petersen, 2002b). These studies argue that a far less risky policy option is for Pacific island governments to focus on maximising resource rents derived from access fees from both distant water and local fishing nations, and re-orienting government spending of this revenue into indirect support of the domestic market. A number of recent studies have considered multilateral governance structures that will encourage cooperative management (Duncan & Temu, 1997; Chand *et al.*, 2002). A strong multilateral institution would allow Pacific island countries to collectively increase the access fees they charge to foreign fleets. This research is still in its infancy and there have been few effective multilateral agreements established so far.

The Forum Fisheries Agency (FFA) and the Nauru Agreement are two multilateral institutions that have attempted to coordinate regional fisheries policy. The FFA, established in 1979 with its members drawn from Pacific island states, provides education, training, and liaison services for its members, especially in its negotiations with non-regional institutions. The Nauru Agreement was signed in 1982 by seven mainly

Micronesian and Melanesian members of the FFA; it helps regulate the issuance of fishing licences to non-member (mainly distant water) states (Schurman, 1998; Teiwaki, 1988). Despite its good intentions, the Nauru Agreement has failed in forcing compliance among its members, because the provisions of the Agreement have not been made national law in the member states. In recent years the Pacific island states in cooperation with distant water fishing nations have agreed to form a Pacific Tuna Commission, to be based in Pohnpei (Federated States of Micronesia), with the goal of assisting in the concerted conservation and management of tuna stocks (and possibly of presenting a united front in access fees negotiations).⁴ These negotiations are ongoing as of the time of writing. Even more recently, the European Union has offered an aid package of E29 million to Pacific nations, at least E5 million of which is targeted for fisheries programs.

Petersen (2002b) notes that regional fishery managers have three main criticisms of the policy of maximising access fees. First, Pacific island countries depend heavily on bilateral aid provided in exchange for cheap fisheries access. Second, due to the pressing need for job creation and foreign exchange, access fees are readily forgone in exchange for domestic-based activities that generate employment. Third, fishing revenue that has gone into the government's consolidated revenue has often been wastefully spent on consumption expenditure and poor quality investments. This latter criticism has led members of the fishing community to advocate diverting fishery revenues from consolidated revenue into fishing-related ventures (Batty, 2001; Kuk, 2001; Tiller, 2001).

Typically, state resource revenues, such as those from fishing, have been deposited into consolidated revenue and used to finance basic government activities, including fishery development initiatives. Since the early 1990s, all Pacific island countries have aspired to increase domestication of the tuna industry in an effort to increase their share of earnings from the fishery. Almost all of these public investments have failed financially. The government of the Federated States of Micronesia has made the greatest effort toward domestication, investing over US\$120 million by 1995 through state-owned fishing enterprises (National Fisheries Corporation, Caroline Fishing Corporation, Yap Fishing Corporation, and Westpac). All enterprises have been operating at a loss (Schurman, 1998). Other examples of unsuccessful public operations include two purse-seiner joint ventures between the Marshall Islands and the United States (one of which required US\$15 million from the government of the Marshall Islands); Solomon Taiyo, a joint tuna canning venture between the Solomon Islands and Japan, which Japan exited in 2001 (Duncan *et al.*, 1999); and one state-owned fishing enterprise in Kiribati that was liquidated in 2000 (SPC, 2002). Two of Kiribati's four longline vessels (which were financed by foreign aid from Japan in exchange for cheap fishing access) have been decommissioned, and the remaining two are inactive. Private investment in tuna ventures has been minor compared with public investment; however, most private enterprises show potential with successful ventures being established in Fiji, the Cook Islands, and Tonga (ADB, 1997).

Pacific island nations are also hampered by the economics of the global fishing industry. The Pacific tuna industry is highly competitive, and profitability varies considerably in its subsectors. Harvesting and canning, two of the subsectors that are most likely to be developed by Pacific island states, are generally the least profitable. Greater profitability is characteristic of other subsectors such as retailing and distribution. These subsectors would be difficult for Pacific island states to develop, as they are already controlled by the buying nations (primarily Japan, Korea, Taiwan, China, and the United States), and are based on personal connections and historic business relationships. As Schurman (1998, p. 130) notes, "it may not be possible for the islanders to move into the most profitable part of the industry, namely, distribution and marketing". Increased domestication of the industry would also mean that the island state would have to bear more of the burden of patrolling its own waters and keeping non-licensed fishing boats out. If a distant water fishing nation were licensed to fish in a Pacific state's waters, it would, presumably, have an interest in keeping rivals out and would thus bear at least part of the burden of patrolling. Foreign fleets have ignored island sovereignty in the past and will likely continue to do so. Contracting with a foreign fleet could help keep out unwanted fishers.

Despite a substantially large negative rate of return on public fishing investments, the Pacific island countries are continuing to pursue domestication of the industry. For example, the Government of French Polynesia intends to double production by 2006 by building at least 56 vessels, 50% of which will be longlining freezer vessels (SPC, 2002). This investment is sizeable. The market value of a new purse

seine boat is US\$12-15 million, and a used one is US\$6-9 million. Longline vessels are considerably cheaper but can still exceed US\$1 million (Schurman, 1998). The Kiribati government has been pursuing trials since 2000 with the intention of developing a domestic prototype longline vessel. Both theory and practice indicate that the probability of success of these public ventures is not high. Given this record of performance, how should fishing revenue be invested so as to maximise sustained economic development in the Pacific?⁵

Trust funds and offshore investment

Development economics literature is increasingly focusing on a country's policy and institutional environments as the main determinants of economic development (e.g., World Bank, 2002b; Olson, 1996). Historically, the Pacific island economies have been characterised by policy and institutional environments detrimental to private sector development (Duncan *et al.*, 1999). However, this is changing with a greater experience and understanding of "market-friendly" institutions. With these policy and institutional changes, improvements in a state's financial position will then be affected by the ability of the Pacific island states to capture, retain, and invest resource revenues. An alternative to the current practice of depositing fishing revenue into consolidated funds and using them to finance commercial fishing initiatives is to pursue a financial investment policy where revenues are instead invested in global financial markets through the use of trust funds.

In a general sense, a trust fund refers to a sum of money held by one person or entity (the "trustee") on behalf of others (the "beneficiaries"). In this discussion, we will use the term "trust fund" to designate moneys held in trust by a government on behalf of the nation's legal residents (Duncan *et al.*, 1995). Trust funds are distinct state managed accounts and typically have a distinct source of income, a distinct management policy, and a distinct use for fund capital and earnings. The following features are common:

- Distinct capital source, not deriving from consolidated revenue;
- The capital is protected from direct expenditure by the government;
- The capital is held in trust for beneficiaries, with the state acting as trustee;
- The fund is designated with some special purpose, or serves some function apart from general state expenditures;
- The earnings derived from fund investments may also have some special purpose, in line with the purpose of the fund (Poole *et al.*, 1992, p. 199).

Trust funds are generally permanent and self-sustaining. Fund capital is invested and may increase through the reinvestment of fund earnings, which also protects the real value of the fund against inflation, and through additional deposits. Fund capital is typically preserved while earnings are redeposited, transferred to consolidated revenue, or used for some other purpose (or a combination of these). The fund functions as a renewable resource, providing a steady stream of financial revenues without depleting fund capital. If fund capital is invested offshore, the earnings may provide a new source of foreign exchange and investment capital for the investing country.

Trust fund earnings can be distributed in various ways. One possible distribution policy is transfer to consolidated revenue. Trust fund earnings then become another source of government revenue, possibly replacing revenues from the resource itself over time, or lowering the tax burden for residents. Trust funds in Kiribati and Tuvalu function in this way. A second distributional possibility is the provision of collective goods, typically in the form of infrastructural projects. Through this form of distribution, trust fund earnings can finance special projects for which capital might otherwise be lacking. Collective goods might include the construction or retrofitting of transportation systems such as roads, rail lines, and port facilities, or could include the provision of collective services such as education and health care. A third form of distribution is through the transfer of fund earnings directly to the beneficiaries in the form of dividends. Individual disbursement, used in Alaska in the United States, creates multiplier effects in the economy, as most individual dividend payments recirculate and stimulate local demand for goods and services. Individual disbursement also ensures greater equity, in that each beneficiary receives an equal

share of the disbursement (in the case of collective goods, some users would directly benefit more than others). A combination of these distributional policies is also possible, depending on the amount of earnings to be distributed.

The advantages of a financial investment policy are numerous. First, it is likely to be beneficial for the Pacific island states to further open up to international capital markets in order to better diversify risk, although the benefits of this are still unresolved in the literature. Easterly and Kraay (2000) argue that, controlling for location, small states have higher per capita GDP than other states, statistically similar per capita GDP growth rates to other states, but greater volatility of annual growth rates. They explain the last finding to be due in part to small states' greater volatility of terms of trade shocks. In turn, the greater terms of trade shocks are due to the greater openness, which has a positive net payoff for growth. Further opening up to international capital markets may decrease the volatility of terms of trade shocks through diversification while also increasing growth. The need for such diversification will probably intensify with the seemingly inevitable reduction in the availability of concessionary flows in the coming years.

A second advantage of a financial investment policy is the intergenerational distribution of natural resource entitlements. Gerlagh and Keyzer (2001) consider exhaustible natural resources (allowing for irreversible degradation of renewable resources) with amenity value, where amenity value stands for the various services that the resource can supply indefinitely (e.g., sustainable supply of the gene pool). Gerlagh and Keyzer compare a "zero extraction" policy (enforced conservation that avoids environmental degradation) and a "grand-fathering" policy (endowment of the present generation with all resources) with a trust fund policy (where future generations receive claims from the natural resources). Of the three policies, only the trust fund policy ensured efficiency and protection of welfare for all generations.⁶

A third advantage of a financial investment policy is the increase in transparency of the resource revenue investment and the protection of capital from direct expenditure by the government. Prudent management is essential for the successful performance of a trust fund. This may not be achievable in some countries, where persistent corruption or political divisions, which stimulate government misallocation of funds, are endemic. However, in many Pacific countries these pitfalls may be avoided by externalising part of the management process. Most funds will use external, independent investment advisors, as well as external fund custodians and monitors. A structure including a nation-based board of trustees setting general policy, offshore investment advisors making investment decisions, and a monitor or custodian reporting on the performance of investments contains checks and balances which can prevent the fund capital from misallocation. Small states, such as those in the Pacific, may want to include trustees from offshore. A mixture of local and international trustees can ensure that the interests of the beneficiary country are fulfilled while investment practices are open and transparent. A further advantage is that trust funds provide a means of increasing public savings, and such an increase has been linked with an increase in economic growth (Krieckhaus, 2002, p. 1698).

Several Pacific island states, including Kiribati, Tuvalu, the Marshall Islands, and Nauru, have established trust funds to help manage revenues from natural resources (both renewable and non-renewable, although no trust fund has been established to directly receive fishing revenues) and other sources (e.g., aid). Kiribati's fund is of particular interest for several reasons. First, it has been operating for nearly fifty years. Second, it has performed very well and has been prudently managed. Third, resource revenues stopped flowing into the fund over twenty years ago, but the fund has continued to grow nonetheless.⁷ Fourth, the fund provides an important additional source of revenue to the Kiribati government and helps stabilise its economy. The following section considers Kiribati's trust fund in greater detail.

Case Study: The Republic of Kiribati

Kiribati's fishing sector

The Republic of Kiribati is a Micronesian island state in the Central Pacific. The country comprises the Gilbert Islands (Kiribati proper), the Phoenix Islands, and the Line Islands, including Kiritimati (Christmas Island). Prior to independence in 1979 Kiribati was part of the Gilbert and Ellice Islands Colony, a British territory. Kiribati contains 34 islands, all but one of them coral atolls, with a combined area of 811 km². The total population is approximately 90,000, with about half living in South Tarawa, in the Gilbert group (where the capital is also located), and consists primarily of Gilbertese, known as I-

Kiribati. Kiribati's sea area (exclusive economic zone) totals 3,550,000 km² (the second largest in the region), giving a sea to land ratio of 4377 to 1. Kiribati's small land area and generally unproductive coral soils means that most of the nation's wealth is derived from the sea, especially in the form of fish.

Kiribati is a low-income country with an estimated 2000 GNP of about US\$90 million, or about US\$950 on a per capita basis. The country has a MIRAB economy, dependent on Migration (MI), Remittances (R), Aid (A), and Bureaucracy (B) (Bertram & Watters, 1985; Poirine, 1998). Only about 20% of the working-age adult population are formally employed, and most of those hold jobs in the public sector (Throsby, 2001, p. 2). The remaining 80% depend on a combination of subsistence (fishing and agriculture) and family support (from both resident and non-resident family members) for their livelihood. The generation of new wealth depends heavily on offshore income from the country's trust fund and fishing access fees, and from remittances and development aid. Kiribati's the economy has grown very slowly. The country's overall poor performance is due mainly to its institutional structure, which inhibits firms from investing (Toatu, 2001). Kiribati uses the Australian dollar, and thus avoids the need for setting its own monetary policies and managing the currency.

Kiribati's most important fish is tuna. In 1999, 20% of the Pacific tuna harvest was caught in Kiribati's exclusive economic zone (Gillett *et al.*, 2001); this was the third-largest tuna catch in the region.⁸ However, Kiribati does not have a well-developed domestic industry, with less than 1% of the Pacific catch being caught by Kiribati-owned vessels, not including subsistence fishing (Gillett *et al.*, 2001). The tuna industry accounted for 61% of government revenue in 1998 and has been the major source of government revenue since the cessation of phosphate mining in the late 1970s. In 1993, 53% of the value of exports and 9.5% of GDP was from the tuna industry. The I-Kiribati also rely heavily on tuna fishing as a source of employment and as their main source of protein. The generally poor performance of public fishing investments in Pacific island states was noted in Section 2. In Kiribati, the sole state-owned fishing enterprise was liquidated in 2000 with its fishing vessels being decommissioned or lying idle. The Kiribati government is still trialing other fishing vessels in the hope that other technologies will provide a profitable avenue for public-funded development of the industry.⁹ In contrast, Kiribati's trust fund, known as the Revenue Equalisation Reserve Fund (RERF), has performed very well.

The Revenue Equalisation Reserve Fund

The RERF was established when Kiribati was part of the British Gilbert and Ellice Islands Colony (GEIC). The source of fund capital was royalty revenue from the extensive phosphate deposits on the island of Banaba (Ocean Island), which was part of the GEIC. Phosphate mining began on Banaba in 1900 and continued until 1979. In 1945, largely because of the extensive environmental damage done to the island (which was never very agriculturally productive), the Banabans were relocated to a new home on the island of Rabi, in Fiji. Mining continued on Banaba until 1979, when Banaban agitation, falling world phosphate prices, and depleting reserves convinced the newly-independent Kiribati government to close the mines (Teaiwa, 2002).

The post World War II period was a time of rebuilding after the disaster of war, when the main island of Tarawa was heavily damaged. Michael Bernacchi, Resident Commissioner of the GEIC for much of the 1950s, advocated order, reconstruction, and the colonial administration's demonstration of concern for locals' welfare and lack of exploitation (Macdonald, 1982, p. 173). He proposed establishing a trust fund, to be administered by the GEIC on behalf of the islanders, based on the revenues from Banaban phosphate. This fund, the Revenue Equalisation Fund (later Revenue Equalisation Reserve Fund) was created in 1956 with A\$555,580¹⁰ provided by the colonial administration (Toatu, 1993). Thereafter, 25% of phosphate revenues from the Banaba mines were deposited into the fund (except during the period 1963-1969). Prior to independence, all income generated by the fund was reinvested, and drawdowns began only after 1979. When Kiribati became independent in 1979, the Ellice Islands formed a separate country called Tuvalu. The Tuvaluans asked for a share of the trust fund, but Kiribati was successful in arguing that the fund belonged to it alone. Kiribati was also successful in convincing aid donors that fund capital not be considered in aid decisions (Macdonald, 1982, p. 273).

The RERF has grown considerably since its inception in 1956 and reported a balance of A\$658 million in 2000. Table 2 gives details about the growth of the fund capital as well as its earnings and per capita

values. At present all fund assets are invested offshore by two London-based fund managers. The RERF aims for an equal balance of equity and fixed income investments, with about 50% of the portfolio invested in equity investments and 50% in fixed interest investments. Assets are held in various currencies though Australian dollar denominated investments account for about half the total, mainly because Kiribati does not have its own currency and instead uses the Australian dollar. RERF assets held in other currencies helped increase the value of the fund during the 1990s as the Australian dollar depreciated against many currencies during the period (ADB, 1998, p. 52). The fund is administered by the Reserve Fund Investment Committee, which consists of the Minister of Finance (chairman) and five other senior officials. This committee is required to file quarterly and annual reports with parliament, and parliamentary approval is needed for all drawdowns. The committee appoints investment fund managers, makes auditing decisions, and sets operational guidelines including fund asset composition.

Table 2. Selected Statistics for the Kiribati Revenue Equalisation Reserve Fund. A\$ millions (except per capita).

| | Year | | | | |
|----------------------------|--------|--------|--------|---------------------|---------------------|
| | 1996 | 1997 | 1998 | 1999 | 2000 |
| RERF balance | 371.8 | 458.9 | 570.1 | 601.5 | 658.0 |
| RERF earnings ^a | 22.0 | 36.9 | 72.0 | 54.5 | 58.9 |
| Deposits | 0 | 0 | 0 | 5.0 | 0 |
| Drawdown | 5.6 | 8.0 | 0 | 0 | 0 |
| Return ^b | 4.5% | 4.6% | 4.4% | 3.6% | 4.0% |
| Population | 81,612 | 83,081 | 84,577 | 88,000 ^c | 92,000 ^c |
| Per capita value | 4555.7 | 5523.5 | 6740.6 | 6835.2 | 7152.2 |
| Per capita earnings | 269.6 | 444.1 | 851.3 | 619.3 | 640.4 |

Sources: Throsby (2001), Kiribati (2000a), ADB (1998), and authors' calculations.

Notes:

^a including interest, dividends, and realised currency and capital gains and losses

^b interest and dividend rate of return (does not include currency and capital returns)

^c estimate

The function of the RERF at this time is to stabilise government revenues, especially at times when copra and fishing revenues are low. At these times the government is authorised to make drawdowns against RERF income. The government did this annually between 1989 and 1997, when a total of A\$44.5 million was withdrawn (the fund generated earnings of about A\$345 million during this period, so only about 13% of earnings were removed). Between 1998 and 2000 no withdrawals were made from the RERF (see Table 2 for details of deposits and withdrawals). RERF income thus provides the Kiribati government with a cushion against downturns in its resource (copra and fishing) industries. Redeposit of fund earnings ensures that the fund continues to grow.

According to the Asian Development Bank, Kiribati's Revenue Equalisation Reserve Fund has been well managed and has performed well. The fund has not been subject to charges of favouritism or corruption, as have beset some other similar trust funds, such as that of Nauru. In general, the RERF's good governance practices, including its open and transparent policies, and its diverse international portfolio of assets, have served the people of Kiribati well.¹¹

Amongst Kiribati's policy options for investing fisheries revenue is to expand the RERF to incorporate fishing revenues directly, or to establish a separate fund, modelled on the RERF, to manage fishery revenues. The performance of the Kiribati fund suggests that, in small, isolated states especially, engaging globalisation through offshore financial investment may make more economic sense than investing in local industries.

Discussion

Employment

Creating employment opportunities is of critical importance in the Pacific. The formal sector in the Pacific island countries caters for a minority of workers (approximately 20% of the labour force), and economic and demographic trends indicate that the gap between the demand and supply of paid employment is growing (UNDP, 1999). This need for job creation has led many of the Pacific island countries to invest many millions of dollars of public funds into fishing ventures. However, due to the poor performance of public fishing ventures, these jobs have either been short-term or at great financial cost. Even private companies often depend on foreign labour, because of the unwillingness of many local residents to accept wage labour (a high reservation wage). Therefore even a domestic fishing industry might end up bringing in labour from outside, providing little in the way of employment for nationals.

Locally owned enterprises do not always provide better conditions for their workers. A recent documentary film by Fijian director 'Atu Emberson-Bain, entitled *In the Name of Growth—Fiji: A Story of Fisheries Development, Indigenous Women and Politics*, notes that work conditions actually deteriorated when Fijians took over the management of a local fish cannery on the island of Ovalau from their Japanese partners. A reviewer of the film observes that “workers interviewed recall that the Japanese management provided better conditions than the Fijian management that took over after two coups in the name of indigenous rights in 1987. The Fijian management removed fans that kept the workplace cool, and the workers suffer under heat and inadequate ventilation” (Harrington, 2002, p. 528). Local control of an industry is thus no guarantee that local employees will be treated fairly.

Cross-country analyses suggest that development of the private sector is more effective and efficient in creating jobs than the public sector (Ncube, 2001; Demekas & Kontolemis, 1999; Malley & Moutos, 1996). We argue that, rather than forcing domestication of the tuna industry through public fishing ventures, the government's role should be one of encouraging private sector development, especially through improving institutional openness and transparency, and removing its direct role in commercial activities, focusing instead on appropriate regulation of the private sector. Individual distribution of trust fund profits through dividends (if large enough) is an equitable way of making capital available to local residents, and is likely to have a stronger impact on economic growth and employment creation than if funds were invested by the government on commercial development initiatives.¹² Dividends, if paid regularly, could have the potential to replace the dependence on remittances from migrants overseas and provide capital where credit and other finance is costly and difficult to secure. They could also provide indirect benefits such as allowing recipients to spend less time working and more time in family and community activities.

Paradoxically, a rentier policy (as opposed to domestication of the industry) may also help protect both the environment and the tuna resource. Many locally-owned enterprises in Pacific islands are already intensely polluting, and cultural traditions and lack of other options for waste disposal, such as dumping waste into lagoons and the open ocean, have led to high levels of local pollution. South Tarawa in Kiribati is an especially problematic area. Furthermore, if employment is the driver of domestication, then environmental consequences of the fishery might be ignored in order to continue the provision of jobs. The same could be said about the need to conserve the resource. A regulatory framework (both national and multilateral) to conserve the tuna resource and protect the environment that does not make exceptions for local residents may be the best policy for discouraging polluting enterprises, especially as foreign fishing fleets would be monitored by multilateral institutions and not just national ones.

Alternative, non-capitalist, economic activities may also alleviate the need for formal employment. Gibson (2002) gives an overview of a diverse economy, in which self-employment, cooperatives, barter, and household labour form an important part. Many of these activities could be supported if annual dividends provided cash income that supplemented subsistence harvesting of both land and sea resources. Dividends may also have the effect of freeing up household cash reserves, allowing these to be directed towards traditional forms of exchange. Pacific islanders may be able to draw upon their own traditions to find alternatives to wage employment in the formal sector.

Revenue distribution

As noted earlier, trust fund earnings may be distributed in a variety of ways. These include transferring earnings to consolidated revenue, where they can finance government operations, using fund earnings to finance collective goods such as infrastructural projects, or distributing the earnings to individuals as dividends. If fund earnings are large enough, earnings could be distributed in several or all of these ways. Individual dividends, if sizeable, could provide an additional, continuing income stream to island residents, complementing that of offshore remittances from family members. These dividends could also be used to help finance small enterprises or to supplement personal savings held within the country. Our discussion here focuses on the potential size of dividends under various scenarios.

In the third section, we discussed Kiribati's Revenue Equalisation Reserve Fund, which now generates annual earnings of approximately A\$640 per person (Table 2). At present, these earnings constitute a significant proportion of Kiribati's recurrent revenue, and it is unlikely that these earnings could be diverted from that purpose and towards individual dividends. But if the RERF substantially increased in size, it may be able to generate earnings beyond what is necessary to support government expenditure, and this excess could be paid out as dividends. An increase in fisheries access fees, with this revenue deposited into the RERF, is the most likely means of increasing the fund's annual earnings. As it is difficult to calculate fund earnings based on new deposits into the RERF from increased access fees, we substitute instead a brief analysis of potential dividends as though they were paid directly from access fee income. We do not mean to suggest that dividends should be paid directly from current fisheries revenues, but rather that the scenarios described below illustrate the amounts that could potentially accrue to Kiribati to be paid out as dividends. We use access fees per capita as a stand-in for potential dividends in this analysis.

Table 3. Gross fisheries revenue, and current and potential access fees from fisheries in each Pacific island country (\$US million, average 1993-1999)

| | Gross fisheries revenue | Access fees as a percentage of gross fisheries revenue | | | |
|--------------------------------|-------------------------|--|-------------|--------------|--------------|
| | | 3% | 5% | 10% | 20% |
| Cook Islands | 0.6 | 0.0 | 0.0 | 0.1 | 0.1 |
| Fiji | 9.1 | 0.3 | 0.5 | 0.9 | 1.8 |
| Federated States of Micronesia | 557.4 | 16.7 | 27.9 | 55.7 | 111.5 |
| Kiribati | 392.4 | 11.8 | 19.6 | 39.2 | 78.5 |
| Marshall Islands | 98.5 | 3.0 | 4.9 | 9.8 | 19.7 |
| Nauru | 122.7 | 3.7 | 6.1 | 12.3 | 24.5 |
| Palau | 7.0 | 0.2 | 0.4 | 0.7 | 1.4 |
| Papua New Guinea | 408.4 | 12.3 | 20.4 | 40.8 | 81.7 |
| Samoa | 16.6 | 0.5 | 0.8 | 1.7 | 3.3 |
| Solomon Islands | 217.9 | 6.5 | 10.9 | 21.8 | 43.6 |
| Tokelau | 6.3 | 0.2 | 0.3 | 0.6 | 1.3 |
| Tonga | 0.9 | 0.0 | 0.0 | 0.1 | 0.2 |
| Tuvalu | 120.1 | 3.6 | 6.0 | 12.0 | 24.0 |
| Vanuatu | 0.3 | 0.0 | 0.0 | 0.0 | 0.1 |
| Total | 1958.3 | 58.8 | 97.9 | 195.8 | 391.7 |

Sources: Calculated using yield data from SPC (2000) and Gillett *et al.* (2001), and price data from van Santen and Muller (2000).

Table 3 presents gross revenue from distant water fishing activities in the exclusive economic zones of the Pacific island countries, access fees based on current fees (3% of gross fisheries revenue) and possible fees if institutional arrangements for the governance of the fishery were improved (5% to 20% of gross revenue).¹³ The total value of the fishery (based on average prices and yields from 1993 to 1999) is approximately US\$1.96 billion. This compares favourably with van Santen and Muller (2000) who estimate

the gross value of the fishery to be US\$1.92 billion. The Federated States of Micronesia, Papua New Guinea, and Kiribati have the most valuable exclusive economic zones with gross revenues of US\$557, US\$408, and US\$392 million, respectively. Currently, the Pacific island governments are charging distant water fishing nations access fees of approximately 3% of gross revenue. These access fees total approximately US\$59 million, which compares favourably with Gillett *et al.* (2001), who estimated total access fees to be approximately US\$60 million for 1999. With the strengthening of institutional arrangements we assume access fees of 10% to 20% of gross revenue, which would increase revenue from access fees to nearly US\$400 million.

Table 4. Total population and fishery revenue per capita for selected Pacific island nations

| Total population | Fishing revenue from access fees (US\$/capita) | | | | |
|--------------------------------|--|--|-----|------|------|
| | (2000) | Access fees as a percentage of gross fishing revenue | | | |
| | | 3% | 5% | 10% | 20% |
| Cook Islands | 21,000 | 1 | 2 | 3 | 6 |
| Fiji | 844,000 | 0 | 1 | 1 | 2 |
| Federated States of Micronesia | 135,000 | 124 | 207 | 414 | 828 |
| Kiribati | 94,000 | 125 | 208 | 417 | 834 |
| Marshall Islands | 71,000 | 42 | 70 | 139 | 278 |
| Nauru | 12,000 | 305 | 508 | 1015 | 2030 |
| Palau | 19,000 | 11 | 18 | 37 | 74 |
| Papua New Guinea | 5,049,000 | 2 | 4 | 8 | 16 |
| Samoa | 179,000 | 3 | 5 | 9 | 19 |
| Solomon Islands | 480,000 | 14 | 23 | 45 | 91 |
| Tokelau | 1,000 | 131 | 218 | 436 | 871 |
| Tonga | 104,000 | 0 | 0 | 1 | 2 |
| Tuvalu | 11,000 | 328 | 547 | 1093 | 2186 |
| Vanuatu | 193,000 | 0 | 0 | 0 | 0 |

Source: World Bank (2002a) and authors' calculations.

Population size and calculations of fishing revenue per capita from access fees for each Pacific island country are shown in Table 4. Papua New Guinea has the largest population by far at just over 5 million. All other Pacific island countries have fewer than 1 million people, with the population of Tokelau being just over 1,000 people. Currently, fishing revenue per capita is over US\$100 for five of the Pacific island countries: Tuvalu (US\$328), Nauru (US\$305), Tokelau (US\$131), Kiribati (US\$125), and the Federated States of Micronesia (US\$124). Again, these figures could be considerably larger if higher access fees were charged. If access fees were increased to 10% of gross revenue, fishing revenue per capita could increase to between US\$400 and US\$1,000 for these countries. Likewise, if access fees were increased to 20% of gross revenue, fishing revenue per capita could increase to between US\$800 and US\$2,000 for these countries.

Table 5. GNP per capita and fishing revenue per capita as a percent of GNP per capita (2000 US\$)

| | GNP per capita (US\$) | | Fishing revenue from access fees as a percentage of GNP (per capita) | | | |
|-----------------------------------|--------------------------|---------------------|---|----|-----|-----|
| | | | Access fees as a percentage of gross fishing revenue | | | |
| | | | 3% | 5% | 10% | 20% |
| Cook Islands | 5020 | (1999) ^a | 0 | 0 | 0 | 0 |
| Fiji | 1830 | (2000) ^b | 0 | 0 | 0 | 0 |
| Federated States of Micronesia | 2110 | (2000) ^b | 6 | 10 | 20 | 39 |
| Kiribati | 950 | (2000) ^b | 13 | 22 | 44 | 88 |
| Marshall Islands | 1970 | (2000) ^b | 2 | 4 | 7 | 14 |
| Nauru | 4166 | (1999) ^a | 7 | 12 | 24 | 49 |
| Palau | 6984 | (1999) ^a | 0 | 0 | 1 | 1 |
| Papua New Guinea | 760 | (2000) ^b | 0 | 1 | 1 | 2 |
| Samoa | 1460 | (2000) ^b | 0 | 0 | 1 | 1 |
| Solomon Islands | 630 | (2000) ^b | 2 | 4 | 7 | 14 |
| Tokelau | 1000 | (1993) ^a | 13 | 22 | 44 | 87 |
| Tonga | 1660 | (2000) ^b | 0 | 0 | 0 | 0 |
| Tuvalu | 1360 | (1999) ^a | 24 | 40 | 80 | 161 |
| Vanuatu | 1140 | (2000) ^b | 0 | 0 | 0 | 0 |

Sources: ADB and authors' calculations:

^aADB (2001)

^bADB (2002)

To calculate whether these figures of fishery revenue per capita are large compared with the income levels of these countries, GNP per capita and fishery revenue as a proportion of GNP per capita are presented in Table 5. Assuming current access fees are charged, countries in which fishing revenue as a percent of GNP per capita is greater than 5% include Tuvalu (24%), Kiribati (13%), Tokelau (13%), Nauru (7%), and the Federated States of Micronesia (6%). Significantly larger values are possible if access fees were increased. For example, if access fees were increased to 10% of gross revenue, fishing revenues would equal 80% of GNP per capita for Tuvalu and almost 44% of GNP per capita for Tokelau and Kiribati. Similarly, if access fees were increased to 20% of gross revenue, fishery revenues would equal 160% of GNP per capita for Tuvalu and almost 90% of GNP per capita for Tokelau and Kiribati.

The above analysis presents several income scenarios using access fees per capita as a stand-in for dividends generated from trust fund earnings. If this new income were invested through a trust fund, it would, in the long term, provide a sustainable source of capital for Pacific island states.

Conclusions

The Western and Central Pacific tuna fishery is the only major natural resource for many Pacific island countries, with fishery revenue constituting a significant portion of government revenue, exports earnings, and GNP in these countries. Not surprisingly, the management of fishery revenues is a politically sensitive issue. In an effort to increase economic rents accruing from the fishery, the Pacific island governments have actively encouraged the development of domestic-based fishing activity by investing many millions of public funds into all aspects of the industry, including state-owned fishing enterprises, port infrastructure, and transshipment facilities. Unfortunately, most investments that have been operating for more than two years have failed financially. Some enterprises continue to receive public support, despite negative rates of return, to sustain employment opportunities and increase foreign exchange earnings.

This paper has critiqued the use of public funds to force domestication of the fishing industry. We propose an alternative approach, in which fishery access fees are restructured and some proportion of them is deposited into a trust fund that is invested globally. A global investment policy would allow Pacific island countries to diversify their investment portfolio (decreasing the volatility of terms of trade shocks while having a positive net payoff for growth), protect intergenerational equity in resource use, and increase transparency in resource revenue investment. Such a trust fund would have to be prudently managed to be successful. The performance of our case study, Kiribati's Revenue Equalisation Reserve Fund, compares favourably to the poor performance of public investments in Kiribati's domestic fishing industry. We suggest that fishing revenue could be used to establish new trust funds, or deposited into existing funds that are performing well. Funds may not work in every Pacific country (especially in those that experience high levels of corruption or are politically divided, or both), but they are a policy choice that may prove effective in many of the smaller Pacific countries.

There are various options for distributing trust fund earnings. One of these is direct distribution in the form of dividends. The distribution of fund earning in this way is likely to encourage private sector development and alternative economic activities and hence provide greater and different employment opportunities than current domestication initiatives. Using current fishing access fees as an analytic stand-in for trust fund earnings, revenues for five Pacific island countries are estimated to be between 6% and 30% of GDP per capita. If access fees were increased (through multilateral cooperative arrangements), revenues could increase to between 100% and 400% of GDP per capita in these five countries, providing significant encouragement to development. Using a trust fund to invest fisheries revenue overseas and using fund earnings to indirectly encourage private sector activity will help enhance sustained economic development in the Pacific, linking small island states with the global economy while supporting local development initiatives in the region. Finding a secure future from fisheries in the Pacific will have less to do with fishing *per se* and much more to do with the management of fishing revenues.

Acknowledgments

The authors thank Prof Ron Duncan, Dr John Lea, and Dr Teuea Toatu for helpful comments.

Notes

1. The division of Pacific islands into these three general groupings is largely a European conception and part of the region's colonial legacy. In fact, there has been a substantial blending of cultural traits, and the division of the Pacific into three subregions is not as clear cut as is often assumed.
2. In the remainder of this paper, we use the term "Pacific" to refer to the Western and Central Pacific, or Oceania. This region does not include the Eastern Pacific, which is considered to be a separate fishery.
3. The United States, Japan, Taiwan, and Korea pay access fees of 10%, 1.1%, 3.8%, and 3.4% of gross revenue, respectively (van Santen and Muller, 2000). Japan receives cheap access in exchange for foreign aid.
4. The Commission is to be created as a requirement of the Multilateral High Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific. See MHLC (2000) and van Santen and Muller (2000) for details.
5. Even if the record of performance of public fishing ventures was more favourable, many economists subscribe to the view that public funds should not be used to finance commercial activities.
6. The zero extraction policy avoids environmental degradation possibly at the expense of inter-temporal efficiency, and the grand-fathering policy ensures efficiency but cannot prevent a persistent decline in lifetime utility from one generation to the next.
7. Some fisheries revenues have been indirectly deposited into the RERF. These revenues are first deposited into consolidated revenue, from which general transfers have been made into the RERF.
8. The largest tuna catch (28%) was in the Federated States of Micronesia's exclusive economic zone, and second largest (21%) was in Papua New Guinea's exclusive economic zone. Ninety-eight percent of the total Pacific tuna harvest comes from the exclusive economic zones of seven Pacific island countries: Federated States of Micronesia, Papua New Guinea, Kiribati, Solomon Islands, Nauru, Tuvalu, and the Marshall Islands.
9. State-owned fishing enterprises are not the only state corporations to perform poorly in Kiribati. For example, Throsby (2001, p. 3) notes that, out of 27 public enterprises, only the Bank of Kiribati and Telecom Service Kiribati Limited—both joint ventures—have performed better than the Revenue Equalisation Reserve Fund.
10. One Australian dollar (A\$) equals approximately 0.55 United States dollars (US\$) in November 2002.
11. Some analysts have also suggested that the I-Kiribati tradition of frugality, as manifest in traditional saving and storage of food against drought conditions, is a factor in the successful management of the fund (Macdonald, 1998, p. 61).
12. The experience of revenue distribution policies in Alaska is illustrative. In their analysis of the relative benefits of enterprise development and portfolio investment in rural Alaskan communities, which have many features in common with small Pacific ones, Robinson *et al.* (1989) note that government trust fund investments have outperformed local business enterprises by a wide margin. They conclude by noting that "business risk investment in a remote and isolated economy is inherently risky ... conversely, portfolio management is seen to offer a far greater return on investment, and, via dividend distribution, to promote real job creation in the service and information sector of Alaska's economy" (p. 276).

13. Although Bertignac *et al.* (2000) provide evidence that the fisheries rent could be increased to 40% of gross revenue, we use a more conservative estimate of 20% here. Also note that Table 3 does not include nations where tuna harvests taken from within their exclusive economic zone gross less than US\$50,000. All nations listed in Tables 3 to 5 are independent countries except for Tokelau, which is a self-governing territory of New Zealand.

References

- Australian Fisheries Management Authority (AFMA) 2000. *1999-2000 Annual report*. Canberra: AFMA.
- Asian Development Bank (ADB). 1997) *The Pacific's tuna: the challenge of investing in growth*. Manila: ADB.
- Asian Development Bank (ADB). 1998. *Kiribati: 1997 economic report*. Manila: ADB.
- Asian Development Bank (ADB). 2001. *Business information guide to the Pacific islands*. Manila: ADB.
- Asian Development Bank (ADB). 2002. *Asian development outlook 2002*. Manila: ADB.
- Batty, M. 2001. Acting Managing Director, National Fisheries Authority, Papua New Guinea, Personal Communication.
- Bertignac, M., Campbell, H.F., Hampton, J., & Hand, A.J. 2000. Maximising resource rent from the Western and Central Pacific tuna fisheries. *Marine Resource Economics*, 15(3), 151-177.
- Bertram, I.G., & Watters, R. 1985. The MIRAB economy in South Pacific microstates. *Pacific Viewpoint*, 26(3), 497-519.
- Centre for International Economics (CIE). 1999. Capturing economic benefits from the tuna fishery. Canberra: CIE.
- Chand, S., Grafton, R.Q., & Petersen, E.H. 2002. Multilateral governance of fisheries: management and cooperation in the Western and Central Pacific tuna fisheries. Resource Management in Asia Pacific Working Paper No. 34. Canberra: Australian National University.
- Demekas, D.G., & Kontolemis Z.G. 1999. Government employment and wages and labour market performance. *Oxford Bulletin of Economics and Statistics*, 62(3): 391-415.
- Duncan, R., & Temu, I. 1997. Trade, investment and sustainable development of natural resources in the Pacific: the case of fish and timber. In *Enhancing cooperation in trade and investment between Pacific island countries and economies of East and South-East Asia*, United Nations Economic and Social Commission for Asia and the Pacific, Vol. 1, pp. 175-211. New York: UNESCAP.
- Duncan, R., Cuthbertson, S., & Bosworth, M. 1999. *Pursuing economic reform in the Pacific*. Manila: ADB.
- Duncan, R., Larmour, P., & Hunt, C. 1995. "Held in trust": the role of public funds in economic management. *Pacific Economic Bulletin*, 10(2), 41-47.
- Easterly, W., & Kraay, A. 2000. Small states, small problems? income, growth, and volatility in small states. *World Development*, 28(11), 2013-2027.
- Gerlagh, R., & Keyzer, M.A. 2001. Sustainability and the intergenerational distribution of natural resource entitlements. *Journal of Public Economics*, 79(2), 312-341.
- Gibson, K. 2002. Women, identity and activism in Asian and Pacific community economies. *Development*, 45(1), 74-79.
- Gillett, R., McCoy, M., Rodwell, L, and Tamate, J. 2001. Tuna: a Key Economic Resource in the Pacific Islands. Report Prepared for the Asian Development Bank and the Forum Fisheries Agency. Manila: Asian Development Bank.
- Harrington, C. 2002. Review of *In the name of growth—Fiji: a story of fisheries development, indigenous women and politics*, a film directed by 'A. Emberson-Bain, 2001. *The Contemporary Pacific*, 14(2), 527-529.
- Hurry, G. 2001. Tomorrow's fish. Canberra: Agriculture Fisheries and Forests Australia.
- Iheduru, O.C. 1995. The political economy of Euro-African fishing agreements. *Journal of Developing Areas*, 30, 63-90.
- Kiribati, Republic of. 2000a. *1999 Budget*. Tarawa: Ministry of Finance and Economic Planning, Republic of Kiribati.
- Kiribati, Republic of. 2000b. *National development strategies 2000-2003*. Tarawa: Republic of Kiribati.
- Kriekhaus, J. 2002. Reconceptualising the developmental state: public savings and economic growth. *World Development*, 30(10), 1697-1712.
- Kuk, R. 2001. Commentary on Governance of the South Pacific Tuna Fishery. Presented at the Papua New Guinea Update 2001, 25 October 2001, Port Moresby.
- Macdonald, B. 1982. *Cinderellas of the empire: towards a history of Kiribati and Tuvalu*. Canberra: Australian National University Press.

- Macdonald, B. 1998. *Pacific islands stakeholder participation in development: Kiribati*. Washington DC: World Bank.
- Malley, J., & Moutos, T., 1996. Does government employment "crowd-out" private employment? evidence from Sweden. *Scandinavian Journal of Economics*, 98(2), 289-302.
- MHLC. 2000. *Report of the seventh and final session of the Multilateral High Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific* (MHLC). Honolulu.
- Ncube, M. 2001. The crowding out effect in a developing country's labour market: evidence from Zimbabwe. *South African Journal of Economics*, 69(3), 474-500.
- Olson Jr., M. 1996. Big bills left on the sidewalk: why Some nations are rich, and others poor. *Journal of Economic Perspectives* 10(2), 3-12.
- Petersen, E.H. 2002a. Institutional structures of fishery management: the fortuna in the South Pacific. In *Resource management in Asia Pacific developing countries*, ed. R. Garnaut. Canberra: Asia Pacific Press.
- Petersen, E.H. 2002b. Economic policy, institutions and fisheries development in the Pacific. *Marine Policy*, 26(5), 315-324.
- Poirine, B. 1998. Should we love or hate MIRAB? *The Contemporary Pacific*, 10(1), 65-105.
- Poole, G.R., Pretes, M., & Sinding, K. 1992. Managing Greenland's mineral revenues: a trust fund approach. *Resources Policy*, 18(3), 191-204.
- Robinson, M., Pretes, M., & Wuttunee, W. 1989. Investment strategies for northern cash windfalls: learning from the Alaskan experience. *Arctic*, 42(3), 265-276.
- Schurman, R.A. 1998. Tuna dreams: resource nationalism and the Pacific islands' tuna industry. *Development and Change*, 29(1), 107-136.
- Secretariat of the Pacific Community (SPC). 2000. *Tuna fishery yearbook*. Noumea: Secretariat of the Pacific Community.
- Secretariat of the Pacific Community (SPC). 2002. Report of the fourteenth meeting of the Standing Committee on Billfish and Tuna. Available at: <http://www.spc.org.nc>
- Teaiwa, K. 2002. Department of Anthropology, Research School of Pacific and Asian Studies, Australian National University. Personal communication.
- Teiwaki, R. 1988. *Management of marine resources in Kiribati*. Suva: University of the South Pacific.
- Throsby, D. 2001. The Kiribati economy: performance and prospects. *Pacific Economic Bulletin*, 16(1), 1-18.
- Tiller, S. 2001. Former Acting Managing Director, National Fisheries Authority, Papua New Guinea, Personal Communication.
- Toatu, T. 1993. The Revenue Equalisation Reserve Fund. In H. Van Trease (Ed.), *Atoll politics: the Republic of Kiribati*. Christchurch: Macmillan Brown Centre for Pacific Studies, University of Canterbury.
- Toatu, T. 2001. Unravelling the "Pacific paradox": the case of Kiribati. *Pacific Economic Bulletin*, 16(1), 109-122.
- United Nations Development Program (UNDP). 1999. *Pacific human development report 1999*. Suva: United Nations Development Programme.
- Van Santen, G., & Muller, P. 2000. Working apart or working together: a case for a common approach to management of the tuna resources in exclusive economic zones of Pacific island countries. Pacific Islands Discussion Paper Series 10, East Asia Pacific Region, Papua New Guinea and Pacific Island Country Management Unit. Washington DC: World Bank.
- World Bank. 2000. *Cities, seas, and storms: managing change in Pacific island economies. Volume III: Managing the use of the ocean*. Washington DC: World Bank.
- World Bank. 2002a. *World development indicators*. Washington DC: World Bank.
- World Bank. 2002b. *World development report 2002: building institutions for markets*. Washington DC: World Bank.