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[1] This is a first draft of an article being prepared for the NGO Pacific Network Germany as a result of an invitation from Andreas Holtz of Hamburg, Germany. The paramount theme of the 2014 meeting of this NGO will be the economy and security policy in the Pacific.

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ABSTRACT

The MIRAB economic model of Pacific island microstates was developed in the mid-1980s by the New Zealand economists, Bertram and Watters, and dominated the literature on the economics of small island nations until alternative models were proposed two decades later. Nevertheless, it is still an influential theory. MIRAB is an acronym for migration (MI), remittance (R) and foreign aid (A) and the public bureaucracy (B); the main components of the MIRAB model. The nature of this model is explained and the importance of distinguishing between the two processes involved in it (one based on foreign aid and the other on overseas remittance) is emphasised. Evidence is given of the importance of migration and overseas remittance for the functioning of some Pacific island microstates, such as Tonga. Yet, it is argued that no single model adequately typified the economic situations of Pacific microstates because of their diversity. Even economies that have been classified as MIRAB economies can be very different. The newer SITE and PROFIT models have similar limitations. In order to understand adequately the economic situation of Pacific island microstates (including their economic vulnerability, their sustainability, and political merchantabilities), it is necessary to take a more holistic approach which takes account of historical, cultural and environmental factors. This is illustrated by the case of Nauru.

Keywords: Aid, economics of small island nations; migration; MIRAB model; Nauru; Pacific island microstates; sea level rise; remittances.

JEL Classification: P4, O1, O2.

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1. Introduction

The MIRAB model (which outlines the way in which several small island economies in the Pacific manage to remain sustainable, despite their comparative lack of domestic economic production) was developed by two New Zealand economists; Bertram and Watters (1985). It is based on the observation that these economies rely heavily on remittances from their emigrants and funds provided by foreign aid. As pointed out by Bertram (2006), this model has been widely accepted and applied not only in the Pacific but also to some small economies elsewhere. Bertram (2006, p. 12) expresses the view that the MIRAB model is likely to continue to be applicable to many small island nations well into this century. Nevertheless, as is pointed out here, changes in the nature of the operation of the model are to be expected, and it is doubtful if it captures adequately the diverse way in which the economies of small island nations in the Pacific operate and have developed.

In this article, the basic structure of the MIRAB model is outlined and some studies providing support for it and examining its consequences are reviewed. The applicability of the model is then discussed and changes in the nature of its operation and future applicability are considered. This is followed by a brief discussion of security, sustainability and vulnerability issues involving small island nations in the Pacific. Before concluding, a brief note is added on the case of Nauru.

2. The MIRAB Model, Evidence Supporting it and its Consequences

MIRAB is an acronym for Migration (MI) Remittances (R), Foreign Aid (A) and the Public Bureaucracy (B); the essential components of the MIRAB model. It has been claimed that many small microstates in the Pacific rely on these four elements to sustain the economic welfare of their population (see, for example, Bertram and Watters, 1985; 1986; Bertram, 1986; 2006). There is convincing evidence that this is so for some, for instance, the Cook Islands, Samoa and Tonga.

It is helpful to decompose the MIRAB model into two distinct processes: (1) the aid process and (2) the emigration and remittance process. These operate as follows:

- Process I depends on the provision of foreign aid which in MIRAB economies is mainly used to fund the government bureaucracy. This aid provides income for public servants and a portion of this is remitted to their relatives, especially those who lack access to cash income. Expenditure by public servants (by those receiving their remittances) adds to additional employment and to cash incomes in MIRAB economies, for example, in retailing, via a multiplier effect. Nevertheless, typically, the import leakage from this expenditure is high. In cases where foreign aid is tied, this leakage is especially high.

- Process II involves the sending of remittances by emigrants from MIRAB economies to relatives (and to others) remaining at home. In turn, the spending of those remittances has a load multiplier effect on incomes and employment but this is damped by a high import leakage.

Figure 1 highlights these two processes.

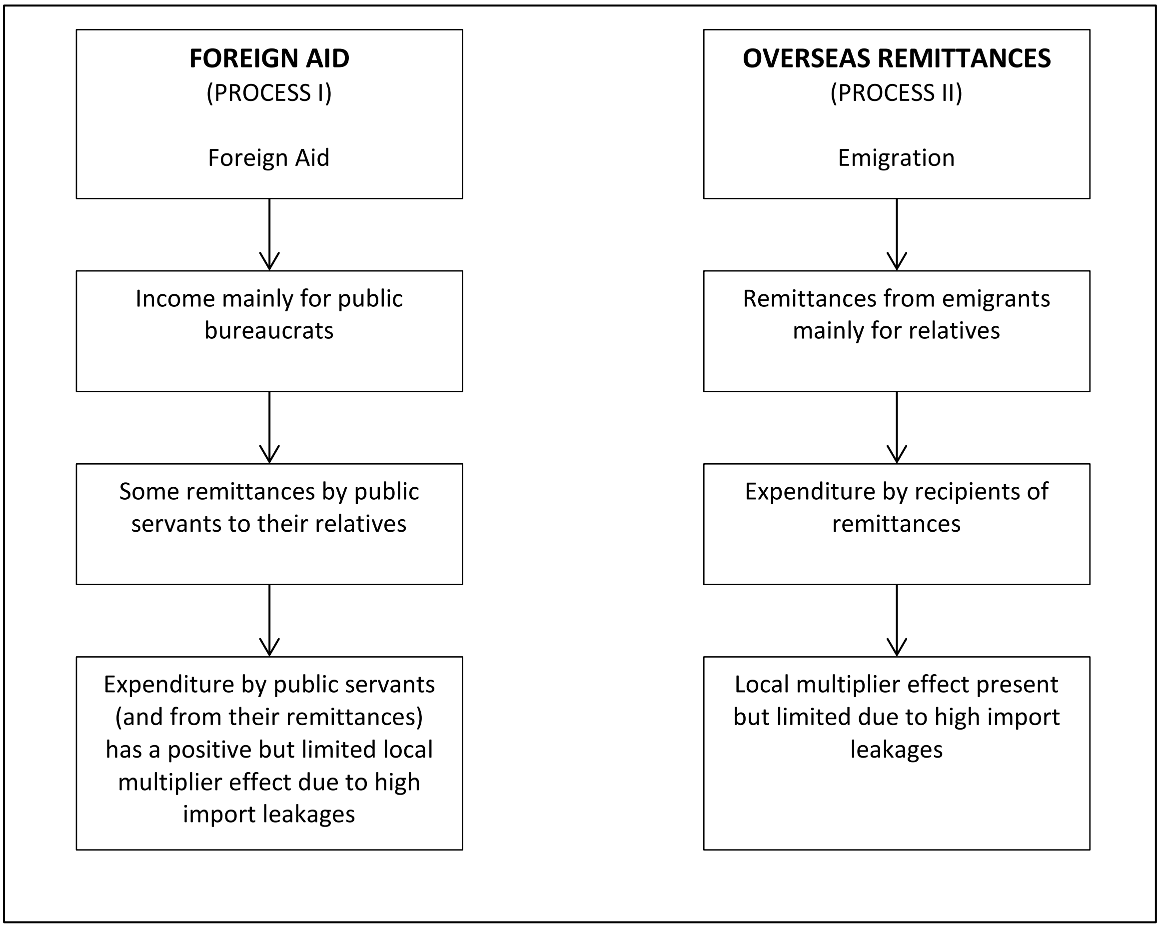

Figure 1 Flow charts for two processes that sustain the functioning of MIRAB economies

There is strong evidence that globally the total amount of international remittances to developing countries significantly exceeds the total value of their Official Development Assistance (Ratha and Silwal, 2012), and this is probably so for most MIRAB economies in the Pacific. With foreign aid being reduced by countries such as Australia and the USA, many MIRAB economies are likely to become relatively more dependent on Process II, the flow of overseas remittances from their emigrants, in order to maintain the economic welfare of their inhabitants.

Tonga's economy is heavily dependent on remittances from its overseas migrants. The nature and role of these remittances has been studied in depth by Richard P.C. Brown of The University of Queensland. Jimenez-Soto and Brown (2012, p. 426) report that "as many as 60 per cent of all households in Tonga have at least one overseas migrant, and 90 per cent of households receive remittances."

Brown, Connell and Jimenez-Soto (2013) find from studies of remittances by Tongans (and more recently by Fijians) that these are used mostly for consumptive rather than for investment. They argue, however, that this should not be deprecated because these remittances play an important role in poverty alleviation and social protection. Jimenez-Soto and Brown (2012) conclude from their detailed study of the role of migrants' remittances in Tonga that these remittances reduced the incidence of poverty by 31 per cent. Furthermore, Brown, Leeves and Prayaga (2013) found that considerable social pressure is exerted on migrants (often through their church affiliations) to donate extra funds when natural disasters strike their Pacific homelands.

Why do some Pacific microstates rely heavily on continuing foreign aid and international remittances for their economic welfare? Why are remittances (and aid) used mainly for consumption ('unproductive' purposes) rather than for investment ('productive' purposes) in many Pacific microstates? One possibility is that the returns on investments in these economies are low or negative and the scope for investments giving positive returns are limited (Tisdell, 2007). This is probably one reason why the governments of Tuvalu and Kiribati invest most of their capital funds abroad (namely the Tuvalu Trust Fund and the Reserve Equalisation Reserve Fund respectively) (Tisdell, 2000a; 2000b). Bertram (2006:2) observed the occurrence of limited opportunities for commercial economic investment in the MIRAB economies which he and Watters studied (Bertram and Watters, 1985). However, Pacific microstates are diverse (Tisdell, 1996; 2002; Tisdell, 2007; 2008a) and the extent to which commercial investment in them can yield positive returns varies. For example, the scope for productive investments is likely to be less in island nations consisting of atolls (for example, Kiribati and Tuvalu) than in those with islands that are mainly of volcanic origin (Fiji) or which are primarily of a continental type (New Caledonia).

If there is little scope for positive returns from investment in commercial production in Pacific microstates, then an alternative possible way to sustain their economies is by obtaining foreign aid and receiving international remittances. It also follows that there is little scope for aid to act as a catalyst for developing self-sustaining commercial production in these microstates. Furthermore, the investment of remittances locally for productive purposes will be infrequent if negative returns are likely in most cases. An additional consideration is that a higher return may be obtained by investing in offspring in order to facilitate their emigration and subsequently, their remittances. Poirine (1997) has studied this aspect in detail as far as investment in education in MIRAB economies is concerned and stresses its importance.

It also follows too that many microstates in the Pacific are unable to develop by applying the liberal economic principles of the Washington Consensus. The smallest states (Nauru, Kiribati and Tuvalu for example) are severely restricted in their ability to profitably export goods, although some microstates are able to benefit from trade in services, such as tourism (Fiji) or by acting as a tax haven for banking and finance (Vanuatu).

3. How Widely Applicable is the MIRAB Model to Microstates?

The question has arisen of the extent to which the economies of Pacific island microstates satisfy the MIRAB model. First, it can be said that the model glosses over significant differences in factors sustaining the economies of microstates that have been classified as MIRAB economies. For example, Bertram (2006, p. 7, Figure 1) classifies Samoa and Tonga, Kiribati and Tuvalu as MIRAB economies but in several ways, they are as different as ‘chalk and cheese’. The economies of Samoa and Tonga differ substantially in their size and diversity and their physical geography compared to the much smaller states of Kiribati and Tuvalu. This incidentally raises the question of what criteria should be used to determine what is an island microstate? How small must it be?

Secondly, while remittances are important contributors to the economic functioning of these microstates, those received by Samoa and Tonga are largely a function of permanent overseas migration of family members. Both Tuvalu and Kirabati are much more dependent on remittances from family members able to obtain only short-term employment abroad, for example, the employment of merchant marines from these countries by German shipping lines and those on short-term employment contracts in Australia and New Zealand. Consequently, the sources of remittances of Kiribati and Tuvalu are much more vulnerable to changing economic conditions abroad than are those of Samoa and Tonga. For instance, there is intense competition from other nations, such as Pakistan, to supply crew for merchant ships. Furthermore, both Kiribati and Tuvalu are comparatively more dependent on rents from fishing rights within their Exclusive Economic Zones than are Samoa and Tonga. These rents are obtained from distant water fishing nations.

Thirdly, it has become quite clear that many small island economies cannot be classified as MIRAB economies. For instance, McElroy (2006) highlighted the fact that the economies of several island microstates depend heavily on inbound tourism. The acronym SITEs (Small Island Tourist Economies) was developed to describe these economies. A third category of island microstates has been developed by Baldacchino (2006) for which he coined the acronym, PROFIT. This somewhat abstruse acronym consists of the following components: P (people considerations); R (resource management); O (overseas engagement); IF (finance, insurance and taxation); and T (transportation). Baldacchino highlights the ability of small nations to make strategic political decisions in the global context which enhance their economic welfare, for example, act as tax havens, provide flags of convenience for shipping, obtain rents from their natural resources and benefit from the presence of military installations. In some instances, these attributes are combined with tourism, foreign aid and remittances.

The SITEs and PROFIT models underline the diverse economic nature of small island nations. Bertram (2006) accepts the existence of this diversity and uses it to provide a global taxonomy of island microstates. These states are classified according to the extent to which they satisfy MIRAB, SITE or PROFIT characteristics. Oberst and McElroy (2007, p. 175) also provide a classification of small island nations according to whether they satisfy the MIRAB model or the combined PROFIT-SITE models. However, in neither of these publications are detailed reasons given for including particular island nations in one category rather than another. No quantification is provided. For instance, while Bertram (2006) classifies the Cook Islands as being predominantly a MIRAB economy, Oberst and McElroy (2007) place it in the PROFIT-SITE category. Both Bertram (2006) and Oberst and McElroy (2007) identify Tuvalu and Kiribati as having a MIRAB economy, but this fails to take account of their significant rents obtained from distant water fishing nations for access to fish (mainly tuna) in their very large Exclusive Economic Zones. Furthermore, as mentioned above, they fail to highlight adequately the extent to which these nations depend on overseas remittances based on relatively short-term employment contracts.

Each of these models is intended to identify theoretical (‘ideal’) types but the PROFIT model is rather elastic or ‘hazy’. Oberst and McElroy (2007, p. 165) claim that “the three aspects that distinguish PROFIT from MIRAB models are: the dynamism of the private sector, the active role of domestic policy, and the strategic orientation towards diversification. PROFIT examples would include tax and insurance havens, offshore banking centres and duty-free manufacturing exporters". The way in which the various dimensions of the PROFIT model can be measured are unclear. In fact, many of its dimensions do not seem to be quantifiable. On the other hand, the components of the MIRAB models are possible to measure, even though official statistics on remittances are inadequate because remittances are often made informally or directly by islanders and are, therefore, unrecorded.

4. Security, Sustainability and Vulnerability: Issues Involving Pacific Island Microstates

It is generally accepted that island microstates are economically more vulnerable than larger nations. Reasons for the economic vulnerability of island microstates have been outlined by Briguglio (1995). Factors which contribute to their economic vulnerability include:

- Their lack of economic diversification in exported commodities and their lack of scope for such diversification given their limited resources;
- Many are prone to natural disasters (such as cyclones and tsunamis) and, unlike large nations, they have limited resources to respond to such disasters which often impact on a large proportion of their population; and
- Land-based subsistence crops (which in some Pacific Islands provide a buffer against commercial economic instability) may be destroyed or severely damaged.

The economic vulnerability hypothesis has, however, not been accepted without dissent. According to Bertram (2006, p.2): "In a globalizing world, inhabitants of small island economies have open to them a myriad of evolutionary responses to external forces that potentially enable them to seize niches of opportunity, and thereby insulate themselves from global economic shocks." This is a similar theme to that expressed by Baldacchino (2006). However, I believe it to be too sweeping a view. For example, while Brown, Connell et al. (2013) accept that island microstates in the Pacific are economically vulnerable, they also point out that some, such as Samoa and Tonga, are significantly insulated by their access to and dependence on overseas remittances. Despite this many Pacific island economies do not have access to significant remittances, for example, that of the Solomon Islands. There are also worrying signs that the incidence of poverty is rising in Pacific microstates for example, in Tonga, despite its being able to access a high level of overseas remittances (Jimenez-Soto and Brown, 2012)

Sustainability

The question is often posed of whether the MIRAB model of economic dependence can be sustained. In particular, for how long will those who have migrated from MIRAB economies and their progeny continue to send remittances to their kin in island economies? Some reduction in the willingness to send remittances can be expected with the passage of time. In order to ensure the long-term sustainability of the remittance system, continuous emigration is required. This however, is only possible if countries receiving Pacific Islanders as migrants continue to be willing to receive them. This is by no means assured (see, for example, Friberg et al., 2006).

In a few cases, the sustainability of the economies of some microstates have depended on the mining of non-renewable resources, such as phosphate in the case of Nauru; an unsustainable economic activity. Several states also rely on income from renewable but depletable resources, such as tuna. There is always a risk of these resources being exploited in a sub-optimal way, and even being exhausted, problems not unknown in the Pacific.

A serious problem for Pacific island microstates consisting of low-lying islands (such as coral atolls) is the likelihood of sea level rise as a result of global warming (Tisdell, 2008b). Eventually these nations will become uninhabitable, and their inhabitants will become environmental refugees. For example, Kiribati and Tuvalu are at particular risk of this. In many cases, defensive actions (mitigation) of sea level rise can be expected to be ineffective and uneconomic. No doubt such small microstates will look to other nations, such as Australia, to accept their environmental refugees.

Political vulnerability

Despite the hypothesis of Baldocchino (2006) that island microstates have considerable ability to manipulate larger highlighted nations to their advantage, it seems more likely that larger higher income countries have the upper hand in this regard. For example, both Nauru and Papua New Guinea were probably more willing to accept boat people (refugees) for offshore processing from Australia because of their considerable dependence on Australian foreign aid. Australia also wants to have friendly relations with Indonesia and does not support the Free West Papua Movement, and in turn expects Papua New Guinea to do likewise. In that regard, Australia has leverage via the considerable amount of aid it provides to Papua New Guinea. There are also doubts about whether Timor Leste has received an equitable deal in relation to Australian access to its offshore oil and gas, especially since it has been alleged that Australia spied on East Timor at the time an agreement was being negotiated with East Timor for Australian access to these resources. This matter has been referred by the Government of Timor Leste to the International Court for Justice in the Hague.

An interesting question is why does Australia not make it easier for individuals from Pacific microstates to migrate to Australia permanently. The populations of some of these states (for example, Nauru and Tuvalu) are so small that the migration of their residents to Australia would have a miniscule impact on Australia's total population. It may also be less costly than providing aid (Tisdell, 1990, Ch. 10). Is it because pressures might emerge from larger Pacific Island states for a similar deal? Or is it a matter of strategic military concern? For example, if some microstates were to become depopulated, would they be taken over by potentially hostile foreign nations?

Some Pacific islands provide important strategic military bases, such as Guam for the United States, and may become more important as tensions escalate on territorial claims by Northeast Asian countries to areas in the Pacific Ocean. However, Australia's military bases are on its mainland with its forward bases being in its far north. Nevertheless, one understands the concerns of the United States and Australia about securing defensive outposts in the Pacific. On the other hand one wonders why France maintains a significant military presence in French Polynesia when it no longer has possessions in Asia, such as in Indo-China. Is it merely to provide a politically acceptable form of aid to French Polynesia? Or is it to bolster the appearance of France as a global political power?

5. Brief Notes on the Case of Nauru

To some extent, every Pacific island microstate is unique. This is highlighted by the case of Nauru. It is not an archipelago (unlike most Pacific island microstates) but consists of a small single island formed by a raised coral bed.

In 1888, Nauru became a German Protectorate and in 1906 (as a result of a British initiative) a German and British consortium was formed to mine its phosphate deposits which was in particular demand for fertilizer in Australia.

Although Germany lost its possessions in the Pacific as a result of World War I (Nauru was place in 1919 under the trusteeship of the UK, Australia and New Zealand), phosphate mining on Nauru continued. It was occupied by the Japanese in World War II and reoccupied by Australian troops in 1945. Nauru was again placed under the trusteeship of Australia, New Zealand and the UK in 1947 and administered by Australia. It became a totally independent nation on January 31, 1968. McDaniel and Gowdy (2000) state that between 1909 and 1966, Nauruans received little or no economic benefit from phosphate mining on their island. Furthermore, they point out that “mining under occupation and then trusteeship had left more than a third of the island in a state of complete destruction” (McDaniel and Gowdy, 2000, p. 45). A later source (Anon, 2013, p. 6) claims: “the phosphate reserves on Nauru are almost entirely depleted. Phosphate mining in the central plateau has left a barren terrain of jagged limestone pinnacles up to 15 metres (40 ft) high. Mining has devastated about 80 per cent of Nauru’s land area [and a considerable amount of marine life surrounding the island has been killed by silt and phosphate runoff]”.

As a result of pressure from Nauruans and UN bodies, more generous phosphate royalties were paid to Nauru in the two years preceding its independence (McDaniel and Gowdy, 2000, p. 45), and a portion of these was placed in the Nauru Phosphate Royalties Trust. By the time of its independence, Nauru’s phosphate deposits were virtually exhausted. Returns from investments by the Nauru Phosphate Royalties Trust were intended to provide a continuing source of income for Nauru but due to unwise investments and use of these funds by the government to cover budget deficits, they were almost exhausted by the beginning of this century (Anon, 2013), thereby leaving Nauru a dire economic state because it had few alternative ways to earn income. It therefore, became highly dependent on foreign aid provided mainly by Australia, New Zealand and Taiwan. In addition, Australia agreed in 1993 as a result of an out of court settlement to pay Nauru $107 million (Australian) to rehabilitate the mined areas of the island (McDaniel and Gowdy, 2000, p. 46). However, I could not find evidence of any significant rehabilitation having been done.

Given its difficult economic situation, Nauru has had to consider every possibility for earning income from external sources. In the 1990s, it became a tax haven and a base for money laundering but under pressure from the inter-governmental Financial Action Talk Force on Money Laundering, it changed its policy in 2003. It has also welcomed the opportunity to house those seeking asylum in Australia and arriving ‘irregularly’ by boat in return for extra Australian aid. This is a part of Australia’s Pacific Solution to stem the arrival of boat people arriving via Indonesia. The Nauruan detention centre operated from 2001- 2007 then close but was reopened again in August 2012. Presumably, this centre will not provide Nauru with a secure long-term source of income.

Nauru has some other sources of income such as royalties from fishing rights, but these are quite limited. Furthermore, by world standards, its net migration rate is low. The Central Intelligence Agency (CIA) (2013, p. 3) reports that the estimated net migration rate of Nauru in 2013 was 14.63 migrants per 1,000 of its population which suggests that (unlike Samoa, Tonga and several other microstates in the Pacific) it cannot rely on international remittances for its economic sustainability. The CIA (2013, p.8) also reports that Nauru has no defence forces and that Australia is responsible for its defence.

While there is some evidence that Nauru has used its jurisdictional power for manipulative purposes (for example, in changing its recognition of the People’s Republic of China and Taiwan), its global manipulative power appears to be quite limited and in acting as a haven for money laundering, it did not escape international attention. Thus, it does not comply with Baldacchino’s PROFIT model to any significant extent. In addition, it is not a magnet for tourism and therefore, does not fit the SITE model either. Nor does it appear to comply with the MIRAB model. Bertram (2006, p 7) does not include it in his taxonomy of microstates based on this model but Oberst and McElroy (2007, p. 175) classify it as being a MIRAB economy. Despite this, it is an economy much more dependent on foreign aid than overseas remittances which is not clear from classifying it as a MIRAB economy. In fact, like most Pacific island microstates, Nauru has special characteristics which can only be appreciated by considering its historical background and its special circumstances. It is only by taking into account these aspects that one can understand the challenging economic situation it now faces.

6. Concluding Comments

It is doubtful if any of the simple models for describing the economies of island microstates (the MIRAB, SITE and PROFIT models) adequately explain the economic situations that Pacific island microstates now face because they do not take enough account of historical and cultural factors as well as matters of location. These models do not seem to explain (for example) why the economies of Singapore, Hong Kong, Malta, Nauru, Tuvalu, Kiribati and the Federated States of Micronesia are so different. The historical association of the Pacific island microstates with Australia, France, New Zealand and the USA are of considerable importance for their economic functioning but the way in which these relationships have come about requires delving into the historical background of their development which is underlined by the case of Nauru. Today, China has also taken a greater interest in many of these Pacific microstates as part of its growing global influence. This could become a concern for those nations (such as Australia, New Zealand and USA) that have had the greatest external influence on these microstates in recent decades.

The possibility that the populations of some of these microstates (for example, Nauru and the Solomon Islands) could sink into abject poverty is another concern, and the problem of how several of these microstates will cope with predicted sea-level rises is unresolved. Apart from this, serious health problems exist in several Pacific states close to Australia. For example, the incidence of malaria is high in the Solomon Islands and in Papua New Guinea and tuberculosis (including a strain resistant to antibiotics) is relatively common in Papua New Guinea. These problems are occurring virtually on Australia's doorstep. However, it seems likely that Australia will do even less in the future to help address these issues because with the election of Tony Abbot as Prime Minister in the latter part of 2013, the Australian government is in the process of substantially reducing the amount of its foreign aid. The United Nations is also reducing aid to the Federated States of Micronesia and the Marshall Islands (Friberg et al., 2006) but they may be able to sustain their economies as a result of remittances. However, not all Pacific island states are able to do this, because of island obstacles to the migration of their citizens. Furthermore, the US may add obstacles to migration from Micronesia and the Marshall Islands as indicated by Friberg et al. (2006, pp. 130-131). This would undoubtedly result in great economic and environmental hardship for these nations.

7. References

Anon (2013), '*Nauru*', Wikipedia. Available at http://en.wikipedia.org/wiki/Nauru. [Accessed 21 December 2013].

Baldacchino, G.T. (2006), 'Managing the hinterland beyond: two ideal-type strategies of economic development for small island territories', *Asia Pacific Viewpoint*, **47** (1)**,** 45-60.

Bertram, I.G. (1986), 'Sustainable development in Pacific micro-economies', *World Development,* **14** (7)**,** 497-519.

Bertram, I.G. (2006), 'Introduction: the MIRAB economy in the twenty-first century', *Asia Pacific Viewpoint,* **47** (1)**,** 1-13.

Bertram, I.G. and R.F. Watters (1985), 'The MIRAB economy in South Pacific microstates', *Pacific Viewpoint,* **26** (2)**,** 497-519.

Bertram, I.G. and R.F. Watters (1986), 'The MIRAB process: some earlier analysis in context', *Pacific Viewpoint,* **27** (1)**,** 47-59.

Briguglio, L. (1995), 'Small island developing states and their economic vulnerabilities', *World Development,* **23** (9)**,** 1615-1632.

Brown, R., J. Connell and E.V. Jimenez-Soto (2013), 'Migrants' remittances, poverty and social protection in the South Pacific: Fiji and Tonga', *Population, Space and Place* [Online] Wiley 21 January 2013. DOI: 10.1002/psp.1765. [Accessed 21 December 2013].

Brown, R., G. Leeves and P. Prayaga (2013), 'Sharing norm preserves and community remittances: evidence from natural disaster in the Pacific Islands', *The Journal of Development Studies* [Online] Taylor and Francis 7 December 2013. Available: http://dx.doi.org/10.1080/00220388.2013.858127 [Accessed 21 December 2013].

Central Intelligence Agency (2013), *'The World Factbook - Nauru',* Available at https://www.cia.gov/library/publications/the-world-factbook/geos/nr.html. [Accessed 21 December 2013].

Friberg, E., K. Schaeffer and L. Holen (2006), 'US economic assistance to two microeconomic nations: aid impact, dependency and migration', *Asia Pacific Viewpoint,* **47** (1)**,** 123-133.

Jimenez-Soto, E.V. and R.P.C. Brown (2012), 'Assessing the poverty impacts of migrants' remittances using prosperity score matching: the case of Tonga', *The Economic Record,* **88,** 425-439.

McDaniel, C.M. and J.M. Gowdy (2000), *Paradise for Sale: A Parable of Nature*, Berkeley, Los Angeles and London: University of California Press.

McElroy, J.L. (2006), 'Small island economies accross the life cycle', *Asia Pacific Viewpoint,* **47** (1)**,** 61-77.

Oberst, A. and J.L. McElroy (2007), 'Contrasting socio-economic and demographic profiles of two, small island, economic species: MIRAB versus PROFIT/SITE', *Island Studies*

Journal, **2** (2)**,** 163-176.

Poirine, B. (1997), 'A theory of remittances as an implicit family loan arrangement', *World Development,* **25,** 589-611.

Ratha, D. and A. Silwal (2012), 'Remittances flows in 2011 - an update', *Migration and Development Brief,* **18** 23 April.

Tisdell, C.A. (1990), *Natural Resources, Growth and Development,* New York, Westport CT and London: Praeger.

Tisdell, C.A. (1996), 'Small island economies in a world of economic change', in R. Gabbay, R. Ghosh and M.A.B. Siddique (eds.), *Economies of Small Island Nations,* New Delhi: New Age International, pp. 1-17.

Tisdell, C.A. (2000a). The development of Kirabati: an analysis of trends, issues and policies, *Social Economics, Policy and Development,* Working Paper No. 7. Brisbane: School of Economics, The University of Queensland.

Tisdell, C.A. (2000b). The development of Tuvalu: an analysis of trends, issues and policies, *Social Economics, Policy and Development,* Working Paper No 10. Brisbane: School of Economics, The University of Queensland.

Tisdell, C.A. (2002), 'Globalisation, development and poverty in the Pacific Islands: the situation of the least developed nations', *International Journal of Social Economics,* **29,** 902-922.

Tisdell, C.A. (2007), 'Globalization and the economic future of small isolated nations, particularly in the Pacific', in B.L. Prasad and K.C. Roy (eds.), *Development Problems and Prospects in Pacific Island States,* New York: Nova Science Publishers, pp. 4-21

Tisdell, C.A. (2008a), 'Economic prospects for small island economies particularly in the South Pacific, in a globalising world', in J.M. Pillarisetti, R. Lawrey, J. Yean, S. Siddiqui and A. Ahmed (eds.), *Small Economies and Global Economics,* New York: Nova Science Publishers, pp. 21-34.

Tisdell, C.A. (2008b), 'Global warming and the future of Pacific Island countries', *International Journal of Social Economics,* **35** (12)**,** 889-903.

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