

CHANGE NOTE

Please list the changes you have made to your paper as a result of reviewer comments and feedback. In some circumstances we may return this change note to reviewers.

Reviewer Number 1

Changes Made as a Consequence of Comments and Suggestions

1. First paragraph - change 'effected population' to 'affected population'
2. First paragraph – change 'approach to tacking' to 'approach to tackling'
3. Third paragraph – change 'European Union is' to 'European Union (EU) is'
4. Fourth paragraph – change 'human depravation' to 'human deprivation'
5. Sixth paragraph – change '1.8A\$ to 4.0A\$' to 'Aus\$1.8 to Aus\$4.0'
6. Sixth paragraph – change 'on Funafuti' to 'on the island of Funafuti'
7. Ninth paragraph – change '520 ha' to '520 hectares' and '42 ha' to '42 hectares'
8. Twelfth paragraph – change 'UNDP-GEF' to 'the United Nations Development Programme – Global Environment Facility (UNDP-GEF)'
9. Thirteenth paragraph – change 'Rosillo-Calle et al.' to 'Rosillo-Calle *et al.*'
10. Sixteenth paragraph – change 'This has had the effect of sea water contamination of fresh water lenses and wells and salination of soil' to 'As a result fresh water lenses and wells have been contaminated by sea water and there has been salination of soil'
11. Seventeenth paragraph – change 'the UNFCCC's' to 'United Nations' Framework Convention of Climate Change'
12. Seventeenth paragraph – change 'Woods, et al.' to 'Woods, *et al.*'
13. Seventeenth paragraph – change 'approach tends conflict' to 'approach tends to conflict'
14. Bottom of paragraph 17 and para 18 change 'et al' to '*et al*' times three
15. Para 19 change 'multi & bi-lateral' to 'multi and bi-lateral'
16. Para 19 change 'UNFCC's' to 'UNFCCC's'
17. Para 21 change 'Government of Tuvalu has' to 'Government of Tuvalu (GoT) has'
18. Para 22 change 'topics" at within' to 'topics" within'

Suggestions Rejected, With Reasons for Rejection

- 1.
- 2.

Reviewer Number 2

Changes Made as a Consequence of Comments and Suggestions

1. Abstract – change ‘are also assessed’ to ‘are assessed’
2. 1st para change ‘tacking’ to ‘tackling’
3. 2nd para ‘change fit system’ to ‘fit for system’
4. 6th para – change ‘ocean, agriculture’ to ‘ocean. Agriculture’
5. 11th para change ‘UNDP-GEF’ to the United Nations Development programme – Global Environment Facility’
6. 14th change ‘hurricanes’ to ‘cyclones’
7. 19th para change ‘Tuvalu’s MP’ to Tuvalu’s Members of Parliament’
8. 20th para change ‘to instigate funding requests and outline development’ to ‘to coordinate funding requests’
9. 21st para change ‘at within’ to ‘within’

Suggestions Rejected, With Reasons for Rejection

1. 6th para comment says ‘it is hard to believe they grow no crops for subsistence..’. This is not claimed. We say ‘Agriculture is far from being self-sufficient’ which therefore means that there is some element of subsistence but not enough for self-sufficiency.
2. 6th para comment ‘Don’t start a sentence with a number’. This could become ‘Approximately 53%’ - but the meaning is clear as it stands.
3. The reviewer makes a suggestion for adding a comparative aspect to the paper by drawing on examples from other countries. While we accept that this would be a valuable addition to the discussion on this topic this would be beyond the intended scope of this particular paper. It is a very worthwhile point to make though and something we would hope to develop in a future piece.

An Analysis of the Effectiveness of Funding for Climate Change Adaptation Using Tuvalu as a Case Study

Key words: adaptation, aid, climate change, development, funding, project implementation, Tuvalu, vulnerability.

Introduction

The low-lying atoll states of the Pacific region are particularly vulnerable to sea-level rise and related aspects of climate change, such as extended periods of drought or extreme tidal surges. They have come to represent the ‘front-line’ or the ‘canary in the coalmine’ in raising awareness regarding the potential negative consequences of climate change and impacts on environmental security. In the more negative projections it is predicted that some of these island states could become uninhabitable within a generation (MacLellan, 2009). Various responses have been put forward to tackle this problem. These include discussion of mass migration of the affected population, with

Australia and New Zealand governments already looking into policy options for accepting entire displaced populations (Shen and Gemenne, 2011). This represents the most dramatic, and fatalistic, approach to tackling the encroachment of the ocean. It is the option of last resort. There is resistance to implementing this policy, both from the host governments who have domestic considerations to take into account with regard to the highly politicised issue of immigration, to the islanders themselves who in many instances do not wish to leave their homeland. The term 'eco-refugee' is being increasingly used with regard to people displaced, or at risk of being displaced, by climate change. This is seen as having negative connotations with islanders not wanting to be described as refugees (Pacific Beat, 2011). Therefore the dominant policy strategy, both within the island states and among the international aid donor community, is to continue to focus on adaptation and mitigation strategies. This paper looks at the extent to which such strategies are succeeding and, where they are not, what impediments the donors and islanders face in ensuring that overseas aid is accessed and used effectively.

1.1 Aid effectiveness

Aid effectiveness has become a high-profile issue, both within the aid community and also as part of the broader political debate in many donor countries. One of the leading critics of current overseas aid strategies is Dambisa Moyo (Moyo, 2009). She has argued that overseas aid packages are often not only failing to meet their desired outcomes, they can be actively damaging and undermine the strategies and policies they are supposed to be promoting. This may be due to misappropriation of funds, which is difficult to monitor without a thoroughly transparent and accountable system of aid governance. Our case study shows that in some cases it is the *system* of aid governance and accountability that leads to aid being spent on projects that are relatively easy to manage, fit for system and sector targets and goals, rather than making a concrete difference to those in greatest need. Projects may be inappropriate for local needs and the ability to implement them. Or there may be particular difficulties that certain governments and civil society groups face in terms of accessing funds. The latter point is fundamental given the reliance on overseas aid that many developing economies now face. Without such funding little development is likely to take place. However, the dynamics of the relationship between the donor and receiving states is such that even when funding is secured it tends to be for projects that have been designed and prioritized by actors external to the host community. Significant proportions of these funds can also return to the donors' economy via the payment of external consultants or forms of tied aid, which has to be used to purchase some form of goods and services provided by the 'donor'. Therefore the politics of aid are far more complicated than simply assessing who are 'deserving' and managing resulting projects.

2. Accessing aid and donor partnerships

The low-lying Pacific island states exemplify some of the complexities and difficulties of accessing overseas aid and, if successful in this, monitoring and assessing its effectiveness. The European Union (EU) is a significant donor to the region, as illustrated by the 11.4 million Euro EU-funded, and South Pacific Community implemented, project 'Increasing Climate Resilience of Pacific Small Islands States through the Global Climate Change Alliance' (SPC, 2011). There are several notable aspects regarding this project. First, the number of island states that are included in this coordinated project. This is representative of a strategy to counter the diseconomies of scale that can occur when dealing with each state on an individual basis. There is clearly an attempt being made here to share expertise and other resources across the region. In some respects this is commendable, but it should

also be acknowledged that each of the states involved has their own set of issues and circumstances and it will not necessarily be possible to take a 'one size fits all' approach. The level of input to, or 'ownership' of the project at the local level is almost invariably crucial in determining the likelihood of achieving such projects' aims and objectives. How problem issues are identified and potential solutions put forward may be something that is driven by external actors. However, without local 'buy in' it will be difficult to both implement and, importantly, maintain positive change.

The London-based Overseas Development Institute has produced a report entitled 'Mapping progress: evidence for a new development outlook' (ODI, 2011). The emphasis of this report is a more positive tone than that often associated with the development debate. For the general public development issues are usually only highlighted in the mainstream media when there is a famine or some form of natural disaster such as a devastating tsunami. Mass displacement of people, for whatever reason, provides images for print and broadcast media, which illustrate human deprivation and can be used to support appeals for increased humanitarian assistance. Such cases are clearly important but actually only make up a relatively small proportion of overseas aid. The bulk of funding is in the longer-term development projects such as education and broader capacity building. This is less dramatically newsworthy work, but fundamental to promoting long-lasting development. The ODI report focuses on eight sectors: agriculture; economic conditions; education; environmental conditions; governance; health; social protection and water and sanitation. The examples used to illustrate this report, albeit very selectively chosen, demonstrate so-called 'drivers of progress'. These are identified in terms of 'catalytic leadership'; 'policies that work'; 'institutional foundations' and 'international partners'.

The concept of an international partnership may suggest a relationship of equals. As suggested above though there is a massive imbalance of power and ability between those supplying and those receiving international aid. There are no legal or contractual obligations to supply such aid, although many donor states often make public commitments to increase aid budgets or contribute towards specific disaster relief operations. Institutional foundations generally refer to the governmental level and effective departments to ensure the delivery and managing of aid programmes. That said, civil society groups should also be acknowledged as having a role as they are often the conduits for the on-site delivery of publicly funded programmes. The focus on policies that work may appear to be self-evident but it is telling that this is couched in such terms, with the apparent conclusion to be drawn that many such policies are seen as not working. Finally the focus on leadership once again raises the question of who is determining strategic priorities and also ensuring that resources are made available and that these policies are followed through to a successful conclusion.

With the above criteria for assessing how aid programmes are managed, and the factors that can lead to their relative success or failure, in mind we now turn to look at a specific example in more detail.

3. Tuvalu case study

Tuvalu is a Small Island Developing State with LDC (less developed country) status. The country's main food resource is the ocean. Agriculture is far from being self-sufficient and consists primarily of coconut and banana trees – there are no forestry products. Pig keeping is also very much a part of Tuvaluan culture and a food source for many households. Mode and average income per day ranges from Aus\$1.8 to Aus\$4.0A (1.08 – 2.4Euro). 53% of the population lives on the outer islands [Table

1], and 76% of these households are in the bottom fifth of the income scale [ADB, 2006]. The other quarter of the poorest households are on the island of Funafuti and are often worse off in the more monetary-based economy, with no access to land on which to produce food or collect fuelwood, cooking using plastic bottles as fuel is not uncommon. No land means less access to water, electricity, sanitation and waste disposal services, and insecure tenure - they are more exposed to poor living standards and the conventional correlates of poverty. Throughout Tuvalu there is a pervasive poverty of opportunity - an unacceptable quality of life with insufficient access to education, health care, basic energy services, and economic opportunities [Chung, 2006].

In 2007, imports totalled Aus\$18,386,120 while exports totalled Aus\$109,413 – imports were around 170 times higher than exports [Government of Tuvalu 2008]. The Government of Tuvalu has made huge efforts to find non-export related financial resources. Additional sources of revenue for the country are:

- Duties for boats of other nations fishing in the Tuvaluan territorial area (Exclusive Economic Zone – EEZ);
- Employment of seafarers, trained at the Tuvalu Maritime Training Institute, by overseas shipping companies;
- Licensing the “.tv” internet domain name;
- Interest from the National Trust Fund.

To complete the national budget, the government of Tuvalu has no choice but to raise funds from international aid (bilateral and multilateral). International donors have provided for Tuvalu's major country investments such as the hotel, the hospital, the government building and in 2006, the new diesel electricity generation plant. Income from aid is highly unpredictable and any disruption could cause great damage to crucial imports which are vital for daily life such as food and oil.

Geographical conditions: Tuvalu, located approximately 1000km north of Fiji, is geographically isolated. Its total land mass consists of just 26 km², spread over 900,000 km² across its exclusive economic zone. It consists of 9 island groups (Funafuti, Vaitupu, Nanumea, Nanumaga, Niutao, Nui, Nukufetau, Nukulaelae, and Niulakita) with Funafuti containing the capital and administration centres, and Vaitupu the main educational and agricultural centres. The 9 island groups are serviced by 2 inter-island boats. There are a large number of relatively small islands with settlements - the largest covering only 520 hectares and the smallest 42 hectares and many smaller uninhabited islets [Table 1]. The nation is regarded as exceptionally vulnerable to rising sea levels and increased storm activity as the maximum height above sea level is a mere 5m. [Hemstock, 2010].

The remoteness of these islands has four major effects: 1) A high level of cost for imported goods due to shipping; 2) A lack of exports; 3) A limited potential for tourism development; 4) Supply disruptions of all imported goods.

Table 1: Land area & total population size, change, distribution and density, by island

Island	Area (km ²)	Total population					Population change (1991–2002)		Population distribution (%)	Density (persons per km ²)	Persons over 60 years (%)	Persons under 14 (%)	Dependency Ratio ^b
		1983	1991	2002	%	r ^a	2002	2002	2002	2002	2002		
Funafuti	2.79	2,718	3,839	4,492	17.0	1.4	47	1,610	6.4	34.8	0.7		
Outer Islands	22.84	5,719	5,204	5,069	-2.6	-0.2	53	222	10.5	37.4	0.9		
Nanumea	3.87	907	824	664	-19.4	-1.6	6.9	172	12.3	38	1.0		
Nanumaga	2.78	762	644	589	-8.5	-0.7	6.2	212	10	38.7	0.9		
Niutao	2.53	917	749	663	-11.5	-1.0	6.9	262	14.6	36.7	1.1		
Nui	2.83	650	606	548	-9.6	-0.8	5.7	194	10.9	34.9	0.8		
Vaitupu	5.6	1,320	1,202	1,591	32.4	2.7	16.6	284	7.3	36	0.8		
Nukufetau	2.99	713	751	586	-22.0	-1.8	6.1	196	11.4	41.3	1.1		
Nukulaelae	1.82	355	353	393	11.3	0.9	4.1	216	13.5	38.2	1.1		
Niulakita	0.42	95	75	35	-53.3	-4.4	0.4	83	0	45.7	0.8		
Tuvalu	25.63	8,437	9,043	9,561	5.7	0.5	100	373	8.6	36.2	0.8		

Notes:

a: Average annual rate of growth (%)

b: Dependency ratio is the ratio of the young (0–14) plus the old (60+), to the population of working age (15–59).

The population of Tuvalu was estimated to be 11,000 in 2007 [Government of Tuvalu 2008].

Source: McLean *et al.*, 1986; Tuvalu Statistics Office, Funafuti, 2002 (Census data); Rosillo-Calle *et al.*, 2003; ADB, 2006; UNDP, 2006.

The impacts of geographical isolation have negative consequences for both the national economy and sustainable development. For example, from analysis of import data from 2002 to 2008 [Government of Tuvalu, 2008] it is apparent that 20% of the total cost of imported goods was for shipping from abroad to Funafuti. Additional costs would then be incurred to ship goods from Funafuti to the outer islands. Since bilateral and multilateral funding organisations want maximum impact for minimum cost, the isolated populations of Tuvalu are at a disadvantage. In fact, many funding streams, such as the United Nations' Development Programme Global Environment Facility (UNDP-GEF) small grants scheme for community projects costing less than US\$50,000, will not pay for the transport for equipment. This leaves outer island communities in Tuvalu unable to access these funds unless the Government of Tuvalu or a partner NGO is prepared to pick up the tab for transporting equipment and materials. Many funders also work to rules of thumb and are governed by a nominal spending limit per beneficiary – obviously, the tiny communities of Nukulaelae and Niulakita are going to be severely disadvantaged by this approach. Additionally, donor agency representatives usually only travel to Funafuti as travel to outer islands is time consuming (at least 2 weeks is required to do a round trip to all outer island communities) and arduous. This tends to bias projects towards Funafuti, provides more opportunities for Funafuti residents and may be responsible for encouraging migration from outer islands to Funafuti.

These geographical conditions have great consequences for the economy. Geographical and physical characteristics (e.g. small catchments, tropical storm intensity, cyclone frequency, low lying atolls, fragile soils, etc.) make these islands highly vulnerable to a range of environmental impacts at rates and intensities above those found elsewhere in the world. These include geographic isolation, ecological uniqueness and fragility, rapid human population growth and associated waste disposal problems, limited land resources, high dependency on marine resources, exposure to damaging natural disasters, low economic diversification, few export products, exposure to external trade and markets and global changes in climate and disruptions in supply of goods including food and fuel; all

of which contribute to increasing environmental and economic vulnerability [Rosillo-Calle *et al.*, 2003; Hemstock, 2010].

Annual rainfall variability (standard deviation from the average) is around 20-28% across all island groups. [Rosillo-Calle *et al.*, 2003]. From 2006 to 2010 there have been unprecedented annual periods of at least 3 months drought in Funafuti where less than 300mm of rain has fallen and Nanumea, the most northerly island suffered 6 months of drought during 2009-10 [Vavae, 2010]. This has adverse impacts on agricultural production and, since there is no potable groundwater due to salt-water infiltration of water tables due to sea level rise, there is a desperate need for rainwater collection and storage.

Climate change has negative impacts on the national economy and sustainable development of Tuvalu. For example, extreme weather events are predicted to increase as a consequence of climate change [Meehl *et al.*, 2000]. The cost of events such as cyclones and droughts in Pacific Island Countries (PICs) exceeded US\$1 billion from 1990 to 2000. It has been estimated that in the capital cities of Fiji, Samoa, Solomon Islands, Tonga, and Vanuatu a 25-year cyclone event would cause damage amounting to around 3% of national GDP, and a 100-year cyclone event, with a 50% chance of occurring within the next ten years, would cause damage costing around 60% of GDP. [UNDP-GEF, 2006]. Extremely high sea temperatures in 1996 caused coral bleaching around the coasts of the Tuvalu group, fish stocks declined and catches of commercially important reef fish were affected adversely.

Monthly maximum and minimum tides have increased considerably from 1993 to 2007 [Vavae, 2010]. Comparing the period from January 1993 to December 1997 with that of January 2003 to December 2007, low tide averages have risen from 0.94m to 1.02m (an increase of 8mm) and high tide averages have risen from 3.02m to 3.11m (an increase of 9mm). As a result fresh water lenses and wells have been contaminated by sea water and there has been salination of the soil. During recent years, eating habits have changed for various reasons, including loss of agricultural land due to climate change related salt-water intrusion, leading to increased food imports rather than local production [Hemstock, 2008]. For example, Taro (staple root crop), has lost its economic importance over recent years due to seawater encroachment and imports of food and beverages now account for around 25% of total imports [Government of Tuvalu, 2008].

3.1 The practicalities of donor partnerships

International aid agendas, such as the United Nations' Framework Convention on Climate Change Cancun Adaptation Framework [UNFCCC, 2011] are set out over the long term, whilst project cycles usually run for less than four years, are focused on short-term outcomes, and have little or no back-up after the project cycle is complete. Some beneficial activities, usually relying on equipment or infrastructure, may often need tweaking just a few months after the implementing agency has left [Woods, *et al.*, 2006], however, within the majority of current funding structures, there is no capacity to do this. There also appears to be a continual drive for "novel" ideas, with funding applications often having a section on the "novelty" of the proposed activity and how this activity can be applied elsewhere. This approach tends to conflict with "community participation" in the decision making/planning process and tends to move project activities away from community suggested interventions towards the donor agencies agenda and a "one size fits all" solution. Communities reliant on subsistence living are well placed to make decisions about what are

“appropriate” interventions in their changing environment – these may be old solutions applied to new problems. Very often in Tuvalu, civil society groups and contractors who carry out the grassroots activities with communities find themselves serving two masters (the beneficiaries and the donors) with contrasting priorities. This has tended to lead to a polarization of those organizations which work directly with communities – larger implementing organizations tend to focus on donor priorities, using the “community participation” approach as a “tick-in-the-box” for donor requirements, whilst smaller, more focused, implementing organizations which work in a local area are inclined to make community requested interventions a priority and tend to be more successful – possibly because they work with the same communities over the longer term, have a more permanent presence and greater local knowledge [Woods *et al.*, 2006]. In addition, smaller local civil society groups tend to focus on outer island communities – not just on Funafuti.

There are many contrasting views on the role of participation in development [Rosillo-Calle *et al.*, 2006; Shutt, 2006; Wrighton, 2010]. However, on the level of practical project/activity implementation and exit, a beneficiary participatory focus also allows both implementers, consultants hired to carry out initial feasibility studies and donors to shift accountability and responsibility for outcomes onto the beneficiary – particularly if projects fail! Accountability via evaluation of project activities is usually completed within the project cycle – a more useful approach may be to finalise the evaluation around 18 months after completion of the project cycle. Consultants hired to carry out initial feasibility studies and strategies for implementation should also be held accountable for project success or failure [Woods *et al.* 2006],

Ultimately, multi and bi-lateral donors are responsible to the taxpayers of various countries, not the aid beneficiaries [Easterly, 2006]. Taxpayer support for aid programmes currently appears to be fed by grand gestures such as UNFCCC’s Clean Development Mechanism and Cancun Adaptation Framework; short project cycles and short-term, easily measurable results. For Tuvalu, the focus on target setting and short-term results has had an adverse effect on “technical assistance” actions that would make a positive difference to how people actually live their lives. For example, high population densities [Table 1] combined with low agricultural production have led to increased food imports and associated waste management problems, particularly for Funafuti [Hemstock & Radanne, 2006]. Increasing levels of waste and sewage and waste leachate contamination have been an ongoing concern and were identified as key environmental issues in the Tuvalu National Adaptation Programme of Action (NAPA) [UNFCCC, 2007]. From 2005-09, three multilateral funding organisations – the Asian Development Bank (ADB) [ADB, 2005], the European Union (EU) (study ongoing) [EuropeAid, 2010] and the Global Environment Facility (GEF) [UNDP, 2006a & 2006b] - have funded “Technical Assistance”¹ in the form of waste management feasibility studies, outline strategies and reports - at a cost of in excess of US\$600,000 - but as yet from these donors, there has been little concrete action regarding practical waste management. In fact EuropeAid 127054, the budget stream responsible for the latest EU funded waste management study, is a specific funding stream for consultants and experts [Europe Aid, 2010]. On average a total of US\$14 million of aid is given to Tuvalu on an annual basis (average 2005-09) from all donors [OECD, 2011]. 8% of this is officially designated “Technical Assistance” [Government of Tuvalu, 2009]. However, analysis of

¹ Technical Assistance is defined for the purposes of this paper as project preparatory technical assistance for the preparation of feasibility studies; advisory technical assistance supporting institutional strengthening; agency fees; sector and policy studies, and non-project-related human resource development; regional technical assistance addressing issues of interest to the region.

actual spending on projects and activities [e.g. NCCAC, 2010; GEF-UNDP, 2006 & 2009] would put the figure spent on “Technical Assistance” as high as 35% of total aid received. For example, GEF “Agency Fees” alone were 9% (US\$306,000) of the total GEF grant of US\$3,300,000 for the Tuvalu-based project “Increasing Resilience of Coastal Areas and Community Settlements to Climate Change” [GEF-UNDP, 2009].

The lack of practical action demonstrated above is symptomatic of multilateral organisations’ short-term, target-oriented approach – feasibility studies are easy to manage and evaluate (the studies are either completed or not) and yield shelves full of reports. Studies appear to have been undertaken by ADB and GEF with no intention of following through on respective study results and have the rider “This report is a working technical document and does not constitute a commitment on the part of any of the partners involved in the development of the initiative” [UNDP, 2006a]. This approach is really of little value to the “beneficiary” country, although it can provide short-term employment for a few locals, the vast majority of the “aid” goes to respective organisations’ “technical experts” and external environmental consultancy companies. In 2008, Tuvalu’s GDP was US\$32 million, 50% of this was in the form of “Development Aid” – approximately US\$4 million was for “Technical Assistance” around US\$3 million of which was in the “Capital” and “Financial” services sectors [Government of Tuvalu 2009; OECD, 2011]. This means that 12% of Tuvalu’s GDP is spent on “technical experts” from consulting companies and multilateral organisations. Tuvalu’s Members of Parliament are aware of this situation as questions were asked in the first quarter Parliamentary session about the high wages and housing allowances paid to experts working on a NAPA project and the formation of the National Climate Change Advisory Council [NCCAC, 2010] leading to some Ministers requesting a pay rise.

Over the years there has been much literature published as to the effectiveness of “Technical Assistance” with various conclusions [Lecomte, 1984; ADB, 2011]. Obviously, if “Technical Assistance” is to be effective in bringing about practical adaptation initiatives that will actually be of use to the rural poor in Tuvalu then studies should not be undertaken if there is no intention of following through on study findings. To avoid duplication there should be an integrated approach from both multilateral and bilateral donor organisation to the issues outlined in Tuvalu’s NAPA [UNFCCC, 2007]. To some extent, the Government of Tuvalu (GoT) has recognised these issues and has instigated a Donor Round Table Meeting to coordinate funding requests.

The duplication of waste management studies by multilateral donors indicates that, possibly due to lack of communication between donor organisations, they were unaware of previous² and contemporary waste management studies. This fragmented approach to adaptation initiatives is clearly detrimental to progress. In addition, it may be that the short-term life span of “ideas and topics” within donor organisations has meant that the EU and ADB funded previous waste management studies in 2000 [EU-EDF, 2000] and 1996 [ADB, 1996] – and as a consequence, they were, in fact, each reinventing the wheel as conclusions for all the above mentioned studies were fairly similar. However, the ADB 1996 study was used as the basis for a successful Government of Tuvalu request for practical assistance to AusAid in 1998 and the very comprehensive ADB 2005 study has been used as the starting point for the latest EU study [EuropeAid, 2010]. The bilateral

² 15 in total from 1998-2005 covering various aspects of waste management in Tuvalu. It should also be stated that the majority of waste management surveys were biased to the situation in Funafuti and paid little attention to waste management in outer islands – where 53% of the national population live [Table 1].

donors AusAid, RoC-Taiwan and JICA (Japan International Cooperation Agency) have all funded practical waste management activities.

Another issue that puts the balance of power in favour of the donor is the torturous application process. Due to lack of local capacity, it is very often the case that the applicant will have to engage a specialist from a multilateral organisation (e.g. GEF Project Development Facility) to complete the grant application, thus diverting funds away from practical action and handing over the power to access these funds to the organisation itself.

The amount of time spent by Government of Tuvalu personnel in dealing with visitors from donor organisations has also been identified as a drain on the Government's resources and capacity. For example, in April 2010, there were 14 visitors from multilateral donor organisations [Wrighton, 2010]. The Government of Tuvalu already has limited capacity, due to its size, personnel capabilities and funding. Wrighton [2010] interviewed Government of Tuvalu officials and found that the majority of them believed that they were taking part in an increasing number of meetings with donor agency representatives. Wrighton [2010] goes on to conclude that "Given the probable squeezing of a large proportion of these meetings into the short time period between the arrival of the Tuesday plane (into Funafuti) and the departure of the Thursday plane it is not difficult to imagine that this level of engagement, all ostensibly for the 'good of Tuvalu', has a significant and negative impact on the amount of time GOT officials have to do their own jobs."

Conclusion

Since up to 50% (in 2008) of Tuvalu's GDP is from aid [OECD, 2011] it provides an interesting case study that illustrates the complexities and duplications of relying on aid from multiple donors. It also demonstrates that Tuvalu's relationship with donors is not a partnership of equals. It is apparent that multilateral donors appear keen to fund adaptation "activities" which fit in with their remit and current interests rather than requested interventions at rates of pay that are inconsistent with national norms. In addition, it is apparent that easy to manage projects such as feasibility studies are favoured over practical actions.

Although the worst case scenarios predict that the low-lying atoll states will inevitably become uninhabitable if current trends in climate change and sea-level rise continue, the Government of Tuvalu and donor community position is to stress mitigation and adaptation measures. Aid funding is available for adaptation projects. From 2005 – 2009 (from the projects surveyed for this study) Pacific Island states 'received' approximately US\$24.6, of which \$US 8.6 was allocated to Tuvalu. Of this \$US8.6, \$US2.6 has been paid in fees to overseas consultants and back to the aid agencies themselves. Therefore around 35% of funding is designated for the support of the administration of the aid sector, as opposed to the delivery of practical projects. If mitigation and adaptation is to be the priority then to be effective a higher proportion of funding needs to translate into projects such as increased food production, flood-secure housing, storage of potable water and practical initiatives for dealing with sewage and solid waste. Until funding is used more effectively to achieve practical results the risks to these island states will remain, and are likely to increase as external risk factors become even more pressing.

References:

ADB, (1996). Urban Planning and Environmental Management Study. A report for the Government of Tuvalu.

ADB (2005). Tuvalu Integrated Solid Waste Plan. Tonkin & Taylor Int Ltd Report prepared for:
Government of Tuvalu. Asian Development Bank.

ABD (2006). HIES – Household Income & Expenditure Survey 2004-05. Department of Statistics, Government of Tuvalu. Asian Development Bank & United Nations Environment Programme Assistance.

ADB (2011). Synthesis of Studies on Effectiveness of TA in Support of Environmental Management. Mohit, K. Independent Evaluation for ADB. Asian Development Bank. 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines. www.adb.org/evaluation

Chung, M. (2006). Asian Development Bank Poverty Assessment: Tuvalu. An ADB report for the Government of Tuvalu.

Easterly, W. (2006). White Man's Burden. Penguin. ISBN 1594200378.

EU-EDF (2000). Solid Waste Characterisation and Management Plan: Tuvalu. Report prepared by Sinclair Knight Merz for SPREP & Government of Tuvalu. Funded by European Development Fund.

EuropeAid (2010). Provision of Technical Assistance to Tuvalu National Authorising Officer regarding the Solid Waste and Sanitation Components. FWC Beneficiaries 2009. Lot 2: Transport and Infrastructures. EuropeAid 127054.

GEF-UNDP (2006). Preparation Document, GEF Project Development Facility. Pacific Islands Adaptation to Climate Change Project (PACC). PROJECT ID: PIMS 2162. GEF Regional Coordination Unit: Samoa.

GEF-UNDP (2009). Increasing Resilience of Coastal Areas and Community Settlements to Climate Change. GEF Project ID 3694. UNDP PMIS ID 4163. Ministry of Natural Resources and Environment, Tuvalu. <http://gefonline.org/>

Government of Tuvalu (2008). Biannual Statistical Report - June 2008. Central Statistics Division, Ministry of Finance & Economic Planning, Vaiaku, Funafuti, TUVALU.

Government of Tuvalu (2009). International Aid for Tuvalu Statistical Summary 2001-2008. Planning and Budget Section, Ministry of Finance, Govt of Tuvalu: Funafuti.

Hemstock, S. L. (2008). The potential role of biomass energy in the sustainable development of small island economies: the case for Tuvalu. Chapter 6 In: Small Economies And Global Economics. Pillarissetti, J. R.; Teo Siew Yean, J.; Lawrey, R.; Siddiqui, S. A.; Ahmad, A. (eds) Nova Science Publishers. 521 pages. ISBN: 1604564776:9781604564778.

Hemstock, S. L. (2010). Tuvalu Toddy Survey. An Alofa Tuvalu Report for the Government of Tuvalu. The French Ministry for Foreign Affairs (Pacific Fund); ADEME – Agence de l'Environnement et de la Maîtrise de l'Energie.

Hemstock, S. L., Radanne, P. (2006). Tuvalu Renewable Energy Study: Current Energy Use and Potential for Renewable Energies. An Alofa Tuvalu Report for the Government of Tuvalu. The French Ministry for Foreign Affairs (Pacific Fund); ADEME – Agence de l'Environnement et de la Maîtrise de l'Energie.

Lecomte, B. J. (1984). Project Aid Limitations and Alternatives. Development Centre Studies. OECD, Paris. ISBN: 926412802-6.

Maclellan, N. (2009). The Future is Here: Climate Change in the Pacific, Auckland, Oxfam New Zealand.

McLean, R. F., Holthus, P. F., Hosking, P. L., Woodroffe, C. D., Kelly, J. (1986). Volumes 1-9. Tuvalu Land Resources Survey. UNDP/FAO Contract: DP/TU/80/001-1/AGOF. University of Auckland, New Zealand.

Meehl, G. A.; Zwiers, F.; Evans, J.; Knutson, T. Mearns, L.; Whetton, P. (2000). Trends in Extreme Weather and Climate Events: Issues Related to Modeling Extremes in Projections of Future Climate Change. Bulletin of the American Meteorological Society. Vol. 81, No. 3

Moyo, D. (2009). *Why aid makes things worse and how there is another way for Africa*, Penguin, London.

NCCAC, (2010). National Climate Change Advisory Council. ToR, Log Frame, Organisational Structure & Annex C. Government of Tuvalu, Ministry of Natural Resources and the Environment.

OECD (2011) international development statistical database (<http://stats.oecd.org/qwids>).

Overseas Development Institute (2011). Mapping progress: evidence for a new development outlook, ODI, London.

Pacific Beat, Radio Australia (13/05/2011). Tuvalu prefers 'climate change re-settlers' instead of climate refugees.

Rosillo-Calle, F., Woods, J. and Hemstock, S. L. (2003). *Consultancy for SOPAC – South Pacific Applied Geoscience Commission on: BIOMASS RESOURCE ASSESSMENT, UTILISATION AND MANAGEMENT FOR SIX PACIFIC ISLAND COUNTRIES: Fiji, Kiribati, Samoa, Tonga, Tuvalu and Vanuatu*. ICEPT/EPMG, Dept of Environmental Science and Technology, Imperial College London.

Rosillo-Calle, F.; De Groot, P.; Hemstock, S. L.; Woods, J. (Eds) (2006). Biomass Assessment Handbook: bioenergy for sustainable development, London: James and James / Earthscan. 244 pages, ISBN: 1844072851.

Secretariat of the Pacific Community (2011). '11.4 M Euro climate resilience project will help nine Pacific island states', <http://www.spc.int/fr/component/content/article/216-about-spc-news/740-114-m-climate-resilience-project-will-help-nine-pacific-small-island-states.html>

Shen, S and Gemenne, F. (2011). 'Contrasted Views on Environmental Change and Migration: the Case of Tuvaluan Migration to New Zealand', *International Migration*, special issue: environmentally induced migration in the context of social vulnerability, Volume 41, pp 224 – 242.

Shutt, C., (2006). Money Matters In Aid Relationships. In R. Eyben (ed.), *Relationships for Aid*. Earthscan: London, pp. 154-170.

UNDP-GEF (2006). Pacific Islands Adaptation to Climate Change Project (PACC) PIMS 2162. Project Development Facility. GEF Regional Coordination Unit: Samoa.

UNDP (2006a). Regional Initiative for Solid Waste Management in the Pacific Region – Definition Study. Agence Française de Développement (AFD), United Nations Environment Programme (UNEP), Secretariat of the Pacific Regional Environment Programme (SPREP).

UNDP (2006b). Economics of liquid waste management in Funafuti, Tuvalu. By Padma Lal, Kalesoma Saloa and Falealili Uili. IWP-Pacific Technical Report (International Waters Project) no. 36. GEF-UNDP, SPREP. ISBN: 978-982-04-0356-7.

UNFCCC (2007). Tuvalu's National Adaptation Programme of Action. Under the auspices of the United Nations Framework Convention on Climate Change. Government of Tuvalu Ministry of Natural Resources, Environment, Agriculture and Lands, Department of Environment.

UNFCCC (2011). The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. Enhanced Action on Adaptation. FCCC/CP/2010/7/Add.1. Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. Report published: 15th March 2011.

Vavae, H. (2010). Personal communication, met office data. Tuvalu Meteorological Service, Director. Tuvalu Meteorological Office, Government of Tuvalu, Funafuti (September 2010).

Woods, J., Hemstock, S. L., Bunyeat, J. (2006). Bio-energy systems at the community level in the South Pacific: impacts & monitoring. Greenhouse Gas Emissions and Abrupt Climate Change: Positive Options and Robust Policy. *Journal of Mitigation and Adaptation Strategies for Global Change*. Article ID AP_11027_2005_9009.

Wrighton, N. (2010). Participation, Power and Practice in Development: A Case Study of Theoretical Doctrines and International Agency Practice in Tuvalu. Master of Development Studies Thesis. School of Geography, Environment and Earth Sciences, Victoria University of Wellington, New Zealand.