C·A·S·L·E

Commonwealth Association of Surveying and Land Economy

UTS

UTS: Asia-Pacific Centre for Complex Real Property Rights

PLPR

International Academic Association on Planning, Law, and Property Rights

Pacific Regional Symposium

Land and Property Rights in the South Pacific

A joint CASLE / UTS: APCCRPR / IAAPLPR event hosted by the Solomon Islands Ministry of Lands, Housing and Surveys.

Honiara 5-7 August 2014

Hosted by the Solomon Islands Ministry of Lands, Housing and Surveys

Asia-Pacific Centre for Complex Real Property Rights

About the Symposium

Background

This Symposium is a joint initiative of the Commonwealth Association of Surveying and Land Economy (CASLE), the University of Technology, Sydney: Asia-Pacific Centre for Complex Real Property Rights (UTS: APCCRPR) and the International Academic Association for Planning Law and Property Rights (IAAPLPR). It is being hosted by the Solomon Islands Ministry of Lands, Housing and Surveys. It has been made possible through a small grant from the Commonwealth Foundation and the support of the Ministry of Lands, Housing and Surveys.

This is the second regional Land and Property Rights symposium co-facilitated by the UTS: APCCRPR and the IAAPLPR.

Format

The symposium will take on a workshop format. It will draw on the expertise of four thought leaders in the field, who will briefly introduce five inter-related themes that will then be discussed and debated by the participants – Professor Spike Boydell (lead facilitator, Land Resource Compensation & Property Trusts/Leases), Mike McDermott (co-facilitator, Land Policy, Climate Change & HBA Reflection), Professor John Sheehan (Climate Change, Carbon and Emerging Property Rights), & Ulai Baya (Land Resource Compensation & Property Trusts/Leases). The Permanent Secretary for the Ministry of Lands, Housing and Surveys, Stanley Waleanisia, will be Master of Ceremonies.

There will be no conference papers. Rather each issue will be introduced for 20-30 minutes and then workshopped for 90-120 minutes with the full engagement of the participants. The intention is to facilitate a participatory process that is relevant to professionals and customary landowners dealing with land and property rights in the South Pacific Islands.

Given the roundtable workshop format, the Symposium will be limited to 30 participants.

The symposium will be video recorded to allow access to land professionals elsewhere in the region to support their continuing professional development. The video will also be used my Mike McDermott as data for his doctoral research on The Landscape of Real Property Rights at the UTS: APCCRPR (Mike will elaborate on the Human Research Ethics approval process and give all symposium delegates the opportunity to not participate in his research if requested).

Venue

Heritage Park Hotel, Mendana Avenue, Honiara, Solomon Islands.

Pacific Regional Symposium on Land and Property Rights in the South Pacific
Honiara, 5-7 August 2014

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UTS Asia-Pacific Centre for Complex Real Property Rights

Final Program

Tuesday 5th August

MC: Stanley Waleanisia, Permanent Secretary, Ministry of Lands, Housing & Survey

- 8:30am Welcome Address – Hon. Manasseh Maelanga MP, Minister of Home Affairs & Deputy Prime Minister, Government of the Solomon Islands.
- A word from CASLE, the UTS: APCCRPR and the IAAPLPR
- Introductions and format of the Symposium (Spike Boydell)
- 10:00-10:30am Morning Coffee
- 10:30am Self-determination and Cultural Identity: the 'plurality of registers' (introduced by Spike Boydell & Ulai Baya) and the HBA approach to exploring the Landscape of Real Property Rights & Land Policy (introduced by Mike McDermott)
- 12:00-1:00pm Lunch
- 1:00pm Climate change and land issues in the Pacific region (introduced by John Sheehan & Mike McDermott)
- 2:30-3:00pm Afternoon Tea
- 3:00-4:30pm More discussion on climate change then workshop/HBA reflection (led by Mike McDermott)

Wednesday 6th August

MC: Nelson Naoapu, Under Secretary (Technical), Ministry of Lands, Housing & Survey

- 8:30am Land Resource Compensation – getting the best deal for customary landowners (introduced by Ulai Baya & Spike Boydell)
- 10:00-10:30am Morning Coffee
- 10:30am More discussion on land resource compensation then workshop/ HBA reflection (led by Mike McDermott)
- 12:00-1:00pm Lunch
- 1:00pm Land Compensation Case Study (Tina Hydro team)/discussion/ workshop/HBA reflection (led by Mike McDermott)
- 2:30-3:00pm Afternoon Tea
- 3:00-4:30pm Land Policy intervention Case Study (Vanuatu Land Program team)/discussion/workshop/HBA reflection (led by Mike McDermott)

Thursday 7th August

MC: Gregory Rofeta, Under Secretary (Admin), Ministry of Lands, Housing & Survey

- 8:30am Using Property Trusts and Leases to support customary landowners (introduced by Ulai Baya & Spike Boydell)
- 10:00-10:30am Morning Coffee
- 10:30am More discussion on Property Trusts/Leases then workshop/HBA reflection (led by Mike McDermott)
- 12:00-1:00pm Lunch
- 1:00pm Carbon Property Rights – opportunities and challenges for the Pacific (introduced by John Sheehan)
- 2:30-3:00pm Afternoon Tea
- 3:00pm Closing discussion on emerging property rights then workshop/HBA reflection (led by Mike McDermott)
- 3:45pm Summary of outcomes & Learning's (Buddley Ronnie, Regional VP CASLE)
- 4:00-4:30pm Symposium Closing – Stanley Waleanisia, Permanent Secretary for Ministry of Lands, Housing & Survey, Government of the Solomon Islands

Note: Each day will commence at 8:30am prompt in the conference venue (Heritage Park Hotel, Mendana Avenue, Honiara).

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Registration &Contacts

Registration

There is no registration fee associated with participation in the Symposium.

Registration is limited to 30 participants to facilitate an effective workshop process.

All prospective participants are required to complete the attached registration form. The organisers will confirm participation registration.

Funding support

No financial support is available to assist participation. All registered participants will be responsible for their own travel and accommodation expenses. A range of hotels are available in Honiara (please Google "honiara hotels solomon islands").

Health issues

Honiara, and the wider Solomon Islands, experienced major flooding in early April 2014, with tragic loss of life and associated infrastructure damage. Ongoing disruptions in water and power supply is likely. As a result of this humanitarian disaster, the symposium has been rescheduled from May to August.

Links

CASLE: http://www.casle.org

UTS: APCCRPR: https://www.uts.edu.au/about/faculty-design-architecture-and-building/asia-pacific-centre-complex-real-property-right-14

IAAPLPR: http://www.plpr-association.org

Contact for registration and further information

Symposium convenor:
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Director UTS: Asia-Pacific Centre for Complex Real Property Rights
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Local emergency contact:
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Permanent Secretary, Ministry of Lands, Housing and Surveys
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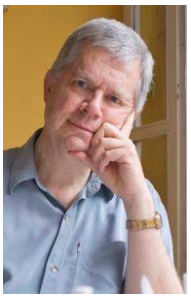
Hosted by the Solomon Islands Ministry of Lands, Housing and Surveys

UTS Asia-Pacific Centre for Complex Real Property Rights

About your facilitators:



Spike Boydell PhD FRICS FAPI FIVEM is Professor of the Built Environment and Director of the UTS: Asia-Pacific Centre for Complex Real Property Rights. Spike is a Property Rights expert, and a specialist in Leaseholds, Valuation, Resource Compensation, Sustainability and Pacific Land Tenure.
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Mike McDermott MA FRSA FAPI CPV is a Director of Global Property Advisory and the Regional Vice-President of CASLE. A licensed Valuer, Mike has worked on Land Policy projects internationally, and is currently pursuing doctoral research on complex real property rights with the UTS: APCCRPR, of which he is a founding member.
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John Sheehan LFAPI FRICS FPIA MRTPI is an Adjunct Professor and Deputy-Director of the UTS: Asia-Pacific Centre for Complex Real Property Rights. John is a planner, urbanist, environmental lawyer and Native Title expert, specialising in compensation, advocacy and government liaison. He is Pacific Liaison Rep for IAAPLPR.
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Ulai Baya LLM LLB BA (LMD) is an Honorary Associate of the UTS: Asia-Pacific Centre for Complex Real Property Rights. Ulai is a lawyer with expertise in land management, land tenure, customary rights and resource development. In 2013 he co-founded Customary Land Solutions to support customary landowners in achieving equitable land deals.
E: ulai.baya@uts.edu.au

Stanley Waleanisia BA (LMD) MPropertySt is the Permanent Secretary for Land, Housing, and Surveys, Government f the Solomon Islands, and through his Ministry is hosting the CASLE/UTS: APCCRPR/IAAPLPR Pacific Regional Symposium on Land and Property Rights in the South Pacific.
E: pslands@pmc.gov.sb

The HBA approach to exploring the Landscape of Real Property Rights & Land Policy

Resources (for use in workshop/focus group sessions):

- Participant Information Sheet
- Participant Consent Form
- McDermott (2014) HBA Complexity Ontology to frame processes for addressing *Wicked Problems* and *Social Messes*, Integral Mentors, http://integralwithoutborders.org/sites/default/files/resources/WOT-01.addressing%20Wicked%20Problems%5BHD%5D.pdf
- McDermott (2014) Addressing Wicked Problems (part 2)

APCCRPR
Asia-Pacific Centre for Complex Real Property Rights

UNIVERSITY OF TECHNOLOGY SYDNEY

INFORMATION SHEET

Introducing the HBA approach to Exploring the Landscapes of Real Property Rights and Land Policies
(UTS APPROVAL NUMBER 2014000103)

WHO IS DOING THE RESEARCH?

My name is Mike McDermott and I am a doctoral candidate at UTS. My supervisors are Professor Spike Boydell and Dr Jason Prior.

WHAT IS THIS RESEARCH ABOUT?

This research is to find out about how best to formulate and implement land policies by means of recognising their complexity by using a more integrated approach to understand the implications of land policy changes.

IF I SAY YES, WHAT WILL IT INVOLVE?

I will ask you to participate in a session in the symposium to be held in Honiara on 5-7 August, 2014. I want to hear what you have to say about a new approach to the task above.

ARE THERE ANY RISKS/INCONVENIENCES?

Land is a sensitive issue everywhere, and in looking at land issues more holistically it is almost inevitable that some sensitive issues will be raised. I hope that the new approach I am piloting at this symposium will prove its worth in casting light on them.

WHY HAVE I BEEN ASKED?

You are able to give me the information I need to find out about because of your expertise in a variety of land tenure and property rights matters

DO I HAVE TO SAY YES?

You don't have to say yes.

WHAT WILL HAPPEN IF I SAY NO?

Nothing. I will thank you for your time so far and won't contact you about this research again.

IF I SAY YES, CAN I CHANGE MY MIND LATER?

You can change your mind at any time and you don't have to say why. I will thank you for your time so far and won't contact you about this research again.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact us via email: spike.boydell@uts.edu.au

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on +61 2 9514 9772 or email research.ethics@uts.edu.au, and quote UTS HREC Approval Number 2014000103.

APCCRPR
Asia-Pacific Centre for Complex Real Property Rights

UNIVERSITY OF TECHNOLOGY SYDNEY

CONSENT FORM

I _____ (participant's name) agree to participate in the research project Introducing the HBA approach to Exploring the Landscapes of Real Property Rights and Land Policies (include the UTS HREC approval reference number when obtained) being conducted by Michael McDermott, doctoral candidate with UTS: Asia-Pacific Centre for Complex Real Property Rights, Faculty of Design, Architecture and Building, University of Technology.

I understand that the purpose of this study is to better understand the social, environmental and economic effects of different forms of land tenure in a particular society. It is to form part of a symposium on Land and Property rights in the South Pacific Islands, which is being hosted by the Solomon Islands Ministry of lands, Housing and Surveys. The symposium is to address climate change impacts, land resource compensation, disaster risk management, land tenure and administration, this part of the symposium is about how best to connect theory to observed reality.

I understand that I have been asked to participate in this research because of my expertise in real property rights and that my participation in this research will involve a three-hour symposium session in Honiara, which has been allocated to enable the doctoral scholar to introduce his HBA model to the participants and workshop the ideas. The discussion will be recorded for future analysis.

I am aware that I can contact Michael McDermott or his supervisor(s), Professor Spike Boydell and Dr Jason Prior, if I have any concerns about the research. I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Michael McDermott has answered all my questions fully and clearly.

I agree that the research data gathered from this project may be published in a form that does not identify me in any way, including in a thesis, book, conference paper or journal.

_____ ____/____/____

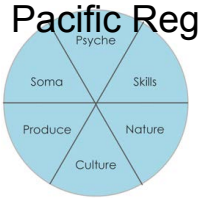
Signature (participant)

_____ ____/____/____

Signature (researcher or delegate)

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: +61 2 9514 9772 or email Research.Ethics@uts.edu.au) and quote the UTS HREC reference number 2014000103. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.



HBA Complexity Ontology to frame processes for addressing *Wicked Problems* and *Social Messes*.

Worlds of Theoria series - paper [01]

Mike McDermott - international land policy facilitator and consultant and member of IWB

An Introduction

Wicked problems are those containing levels of complexity for which exclusively linear, mechanistic, reductionist processes are misapplications that may be not only incompetent, but make the situation worse (32 & 19). This paper describes a process which in my experience allows the complexities of wicked problems to be better appreciated and understood, and thereby opens the way for more skilful means to be employed to address them. In particular, this requires a much stronger emphasis upon axiological complexities – the interplay of values – than previous ontologies, which were imbalanced on epistemological complexity, resulting in a lack of a values/reason evolutionary dynamic (1, 25).

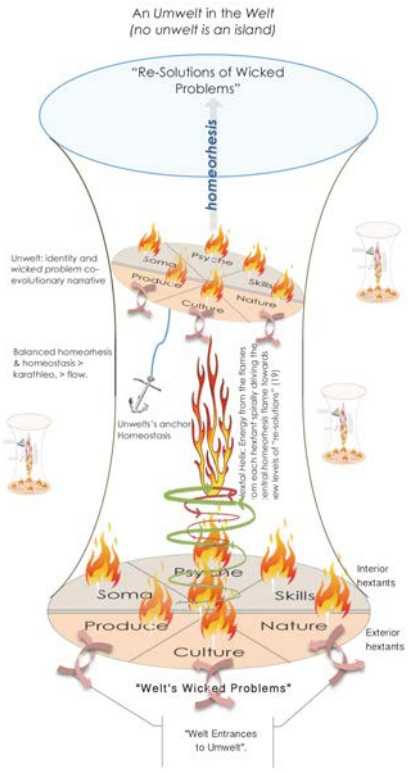
The presentation assumes a Wilber-based integral understanding from the reader, but through years of practice I have developed from AQAL to "AHAL" - all hextants, all levels, and further still to ADALAS - all domains, dimensions and degrees, all levels and lines, and all scales and systems – weighted as may be required in the particular dynamic.

The dynamic/process nature of the model is emphasised by the flames at the bottom of the HBA "chimney" emitting heat rising in a hextal helix, which is to spiral around a central developmental line expressing homeorhesis towards the optimal antifragility (36) of the responses to the wicked problems. It's a bumpy ride because flames rise, fall and interrelate, and it's slowed by an anchor because all the flames have to be resolved into the umwelt's Goldilocks Zone for the identity/wicked problem narrative to rise towards the best resolution possible for the umwelt concerned. And it's not just a Tree of Knowledge (26, 34); it's an umwelt of knowing and valuing (1, 5, 25).

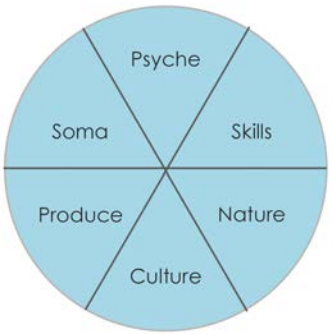
Once the glossary familiarises the reader with the terminology, I hope this will be a useful and intelligible ontology for approaching the reader's own wicked policy etc. problems. For example, the umwelt can be scaled fractally according to the identity component: bodyself, social identity, national identity, cultural identity and so forth.

I am trying to be complementary to those authors cited, the umwelt chimney enfolding the coevolutions happening via the tackling of wicked problems. However in addition to the hextal framing another essential distinction I am making here is between the produce, culture and nature hextants inside the umwelt chimney - that is, that part of the welt identified (made intra-umwelt, whether positive or negative) by the umwelt ("a person's identity is inseparable from the way in which the world appears to that person" (26, 33, 34), and the much vaster one outside full of unknown unknowns (35 & 36) to that umwelt. So I see Ken Wilber's AQAL as being intra-umwelt too, also requiring that distinction with the more general welt.

So our problem-tackler absorbs the wicked environment's produce/culture/nature in bite-sized chunks (8) and addresses it via its soma, psyche and skills until able to cope with it sufficiently. From involving intrinsic valuations rather than exclusively extrinsic and systemic valuations, it becomes a process of psychic digestion towards increased competencies in manifesting wisdom and compassion. In other words, it's a participatory approach facilitating, and facilitated by, Torbert's Action Inquiry (38).



An Umwelt



HBA = HIDEGRE BIES ADALAS

HIDEGRE Framing and Principles

H ***Hextants*:** The division of an *umwelt's* functional circle highlighting six domains that must be engaged to address *wicked problems* (Refs: 11, 17 p. 68, 19, 22, & 40).

I **Identity:** the identity of the *umwelt* engaging the *wicked problem.* (Refs: 10, 27, 33, 37 & 41).

D **The inter & intra-hextal developments** of the *umwelt* to respond to the *wicked problem*, and its developments (Refs: 32 & 39)

E **Emergence:** the identity's responses to the *wicked problems* through levels of emergence, every new emergent being a new ball game (Refs: 4, 31, & 42).

G **Goldilocks:** development may only occur within a limited zone of challenge intensity; required to pace the responses. (Refs: 6 p.50, 7, & 8**).**

RE **Related Evolution:** All evolution is co-evolution, (20, p. 237) and requires engagements all *hextants* and in conformity to the above principles to occur.

BIES Navigation

B **Butterfly Effects and Black Swans.** A reminder of the essential unpredictability and non-linearity of both *umwelts* and *wicked problems*, and to consider the need to engage strategies that are *antifragile* in the face of them (16, 35, & 36).

I, E, and S These signify three forms of valuation to be considered in the *umwelt's* resolution of its *wicked problem*: the **intrinsic value**, the **extrinsic value**, and the **systemic value** of matters of concern (14, 15, 18, 20, 21, 27, 28, 29, 30, & 40).

ADALAS Territory(Refs: 2, 3, 9, 12, 13, & 40)

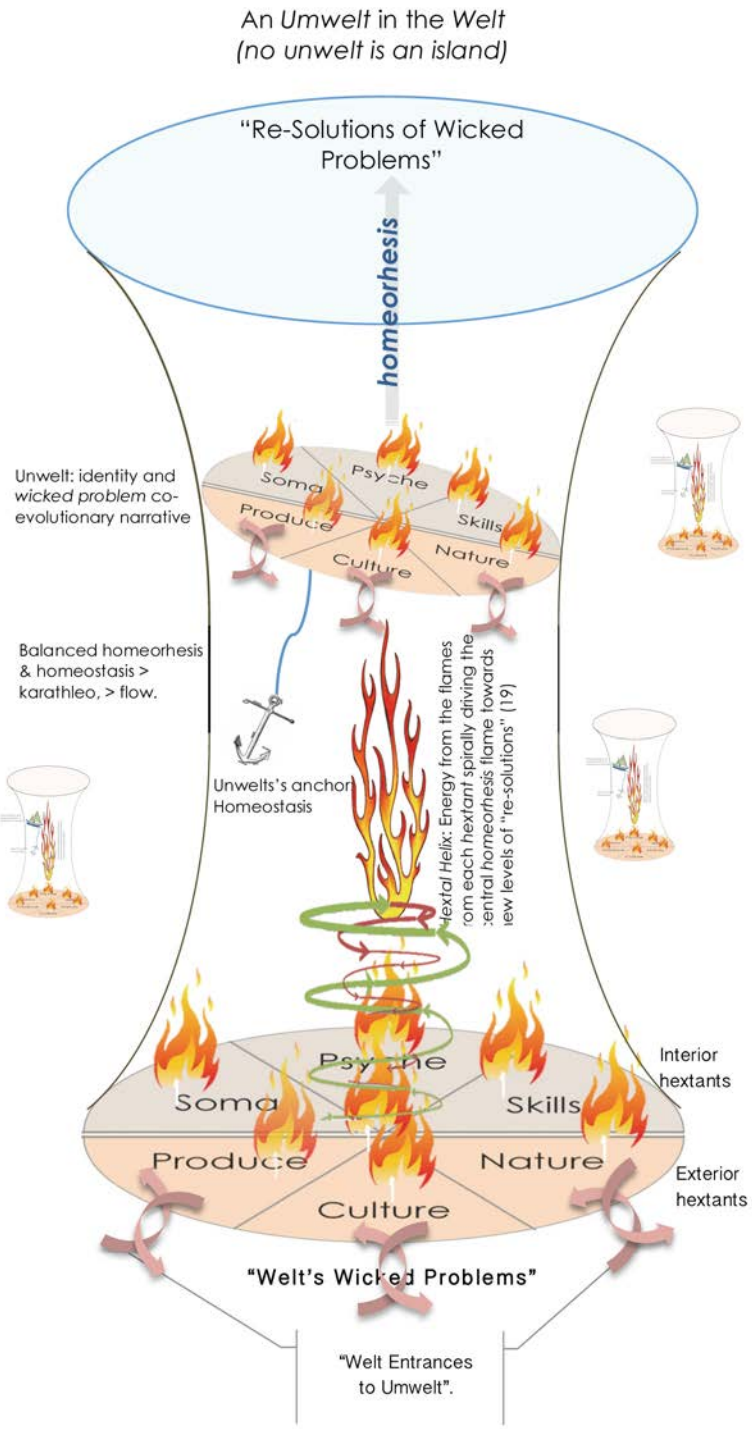
AD **All domains, dimensions and degrees** of the *umwelt* and its *wicked problem* (For example, drilling from heuristic to *ansatz to* science).

AL **All levels of complexity and lines of development** of the *umwelt* and its *wicked problem.*

AS **All scales and systems** of the *umwelt* and its *wicked problem.*

Glossary:

Antifragility	Becoming stronger as a result of addressing a challenge (http://en.wikipedia.org/wiki/Antifragile)
Ansatz	An expert first approximation
Hextal Helix	Just as DNA requires a double helix, development requires a hextal (6-strand) intertwining and inter-relating helix)
Hextant	One sixth of a circle (Kocayusufoglu, I. 2005 "Geometric Approach to Iso-Taxicab Inner-Product" *International Journal of Pure and Applied Mathematics* Volume 25 No. 2 , pp 155-161)
Homeorhesis	A dynamic system's return to a trajectory (http://en.wikipedia.org/wiki/Homeorhesis)
Homeostasis	A system's return to a particular state (http://en.wikipedia.org/wiki/Homeorhesis)
Karathleo	Neologism from Gk karis (graceful) and athleo (striving for mastery)
Psyche	The mind, will, and emotions
Re-Solutions	Recommended activities with wicked problems
Social messes	A suite of *wicked problems* (q.v.) (http://en.wikipedia.org/wiki/Wicked_problem)
Soma	The physical body
Umwelt	All the semiotic processes of an organism into a whole (http://en.wikipedia.org/wiki/Umwelt)
Welt	German for the world.
Wicked Problems	Difficult or impossible complexly interrelated problems (http://en.wikipedia.org/wiki/Wicked_problem)



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ADDRESSING WICKED PROBLEMS (WPs) PART TWO

1. ENGAGE HIDEGRE BIES ADALAS (HBA) ONTOLOGY TO FIND DEPTH AND SPAN OF WPs

2. IDENTIFY THE SIMPLE, COMPLICATED AND COMPLEX PROBLEMS WITHIN THE WPs

Simple	Complicated	Complex
Example: Following a Recipe	*Example: Sending a Rocket to the Moon*	*Example: Raising a Child*
The recipe is essential	Formulae are critical and necessary	Formulae have a limited application
Recipes are tested to assure easy replication	Sending one rocket increases assurance that the next will be OK	Raising one child provides experience but no assurance of success with the next
No particular expertise is required. But cooking expertise increases success rate	High levels of expertise in a variety of fields are necessary for success	Expertise can contribute but is neither necessary nor sufficient to assure success
Recipes produce standardized products	Rockets are similar in critical ways	Every child is unique and must be understood as an individual
The best recipes give good results every time	There is a high degree of certainty of outcome	Uncertainty of outcome remains
Optimistic approach to problem possible	Optimistic approach to problem possible	Optimistic approach to problem possible

Table 1:Examples of Simple, Complicated & Complex (Glouberman & Zimmerman, 2002, p. 2):

3. ADDRESS SIMPLE AND COMPLICATED PROBLEMS APPROPRIATELY AND MONITOR AND EVALUATE THEIR EFFECTS UPON WPs WITH HBA

Allen (2013) adds the following different leadership tasks for different systems:

Complicated systems	Complex adaptive systems
Role defining – setting job and task descriptions	Relationship building – working with patterns of interaction
Decision making – find the 'best' choice	Sense making – collective interpretation
Tight structuring – use chain of command and prioritise or limit simple actions	Loose coupling – support communities of practice and add more degrees of freedom
Knowing – decide and tell others what to do	Learning – act/learn/plan at the same time
Staying the course – align and maintain focus	Notice emergent directions – building on what works

Table 2: Different Leadership Tasks for Different Systems (Allen 2013, (from Anderson & McDaniel 2000; Snowden & Moone 2007).

4. ENGAGE ANSATZES TO ADDRESS COMPLEX PROBLEMS, MONITORING AND EVALUATING WITH HBA.

Extrinsic Value (artefacts)			Intrinsic Value – (Holons)
		Wicked Problems > Holistic Answers Social Messes > Social Benefits	
	 (can contribute to both problems and answers)		
	Complicated	Complexity	
		 (New simplicities emerge at each new level of complexity)	
	Simple	Simplexity	

Table 3: Relationships between the Terms described in Table 1, plus Simplexity.

Climate change and land issues in the Pacific region

Resources:

- Climate Change and Land Issues in the Pacific Region – prompts & discussion points
- Romm, J. (2014) Faux Pause 3: More Evidence Global Surface Temperatures Poised to Rise Rapidly, Climate Progress (posted 22 July 2014), http://shredoftruth.com/home/faux-pause-3-more-evidence-global-surface-temperatures-poised-to-rise-rapidly.pdf
- Solomon Islands National Climate Change Policy 2012-2017, Ministry of Environment, Climate Change, Disaster Management and Meterorology (MECDM), Government of Solomon Islands, https://www.sprep.org/attachments/Climate_Change/SI_Climate_Change_Policy.pdf
- The Lelepa Declaration 2014: The declaration of the 3rd meeting of the Melanesian Indigenous Land Defence Alliance (MILDA)March 2014, http://mildamelanesia.org/sites/default/files/Lelepa%20Declaration.pdf
- Land and Titles (Amendment) Act 2014, No. 11 of 2014, Government of Solomon Island, http://www.parliament.gov.sb/files/legislation/9th%20Parliament/Acts/2014/Lands%20and%20Titles%20(Amendment)%20Act%202014.pdf
- Mines and Minerals (Amendment) Act 2014, No.6 of 2016, Government of Solomon Islands, http://www.parliament.gov.sb/files/legislation/9th%20Parliament/Acts/2014/Mines%20and%20Minerals%20(Amendment)%20Act%202014.pdf

Prompts for: Climate Change and Land Issues in the Pacific Region.

Prepared by Mike McDermott

Please see the attached "Faux Pause 3" regarding the current state of climate change.[1]

In 2012, the Pacific Islands Regional Climate Assessment (PIRCA) report was completed, and an Executive Summary is available online.[2] Its findings include:

1. Sea level rises are under way, the highest of these in the Pacific being in the western Pacific
2. Western Pacific islands are getting slightly more rainfall, and eastern Pacific islands are getting much less. Consequently, freshwater supplies will decrease.
3. Rising sea levels, and harsher storms, will increase coastal erosion and flooding and damage infrastructure
4. Higher sea temperatures will increase coral bleaching and habitat loss
5. "Ocean acidification and changing ocean chemistry" (including toxic pollution) will have negative consequences that cannot yet be predicted
6. Fish will increase in some areas and decrease in others, but overall there will be a decline
7. Changes in rainfall and temperatures will increase fires and particularly endanger higher altitude ecosystems as they have nowhere else to go, which together with non-native species invasions will result in species extinctions
8. The effects of climate change **"will make it difficult for Pacific Island communities to sustain their connection with a defined place and their unique set of customs, beliefs, and languages"**
9. There will be immigration from low islands to high islands and continental sites.

The Executive Summary's response to these challenges is a call for more research;[3] what is ours?

In the Solomon Islands:

National Adaptation Plan for Action (NAPA)[4], and the SI Climate Change Policy 2012-2017.[5]

What are the links between land issues and climate change not only in the Pacific, but all over the world? The above are about Pacific Island states adapting, but can they also teach?

For example:

Land Tenure and Property Rights:

How much is climate change from communitising the costs and privatising the profits?

Customary vs Formal tenure: the Lelepa Declaration of 10-14 March, 2014[6] (q.v.)

The Solomon Islands Lands and Titles Amendment Act 2014.

Mining in the Pacific:

The Solomon Islands Mines and Minerals Amendment Act 2014.

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[1] http://shredoftruth.com/home/faux-pause-3-more-evidence-global-surface-temperatures-poised-to-rise-rapidly.pdf
[2] http://www.cakex.org/sites/default/files/documents/Exec-Summary-PIRCA-FINAL2.pdf. Full Report at http://www.cakex.org/sites/default/files/documents/NCA-PIRCA-FINAL-int-print-1.13-web.form_.pdf
[3] But note PIFACC 2006-2015 at www.sprep.org/climate_change/pycc/documents/PIFACC.pdf
[4] https://unfccc.int/files/adaptation/napas/application/pdf/solomon_islands.pdf
[5] https://www.sprep.org/attachments/Climate_Change/SI_Climate_Change_Policy.pdf and http://www.pacificclimatechangescience.org/wp-content/uploads/2013/06/13_PCCSP_Solomon_Islands_8pp.pdf
[6] http://pang.org.fj/wp-content/uploads/2014/06/Lelepa-Declaration-March14.pdf

CLIMATEPROGRESS

Faux Pause 3: More Evidence Global Surface Temperatures Poised To Rise Rapidly

BY **JOE ROMM** POSTED ON JULY 22, 2014 AT 5:07 PM

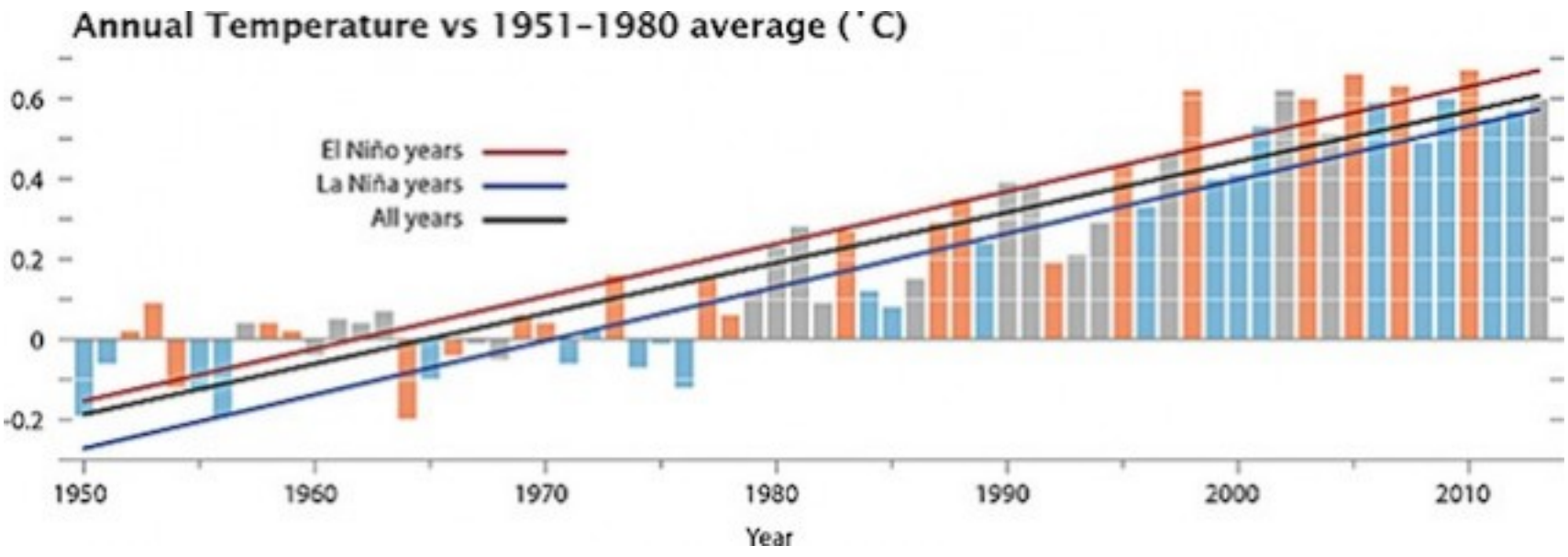


Chart of global temperature since 1950 showing the phase of the El Niño-La Niña cycle. Via NASA.

A new study finds that when climate models factor in the temporary warming and cooling impact of El Niño and La Niña, they accurately predict recent global warming. And that is consistent with recent studies that led one climatologist to say, "Global temperatures look set to rise rapidly."

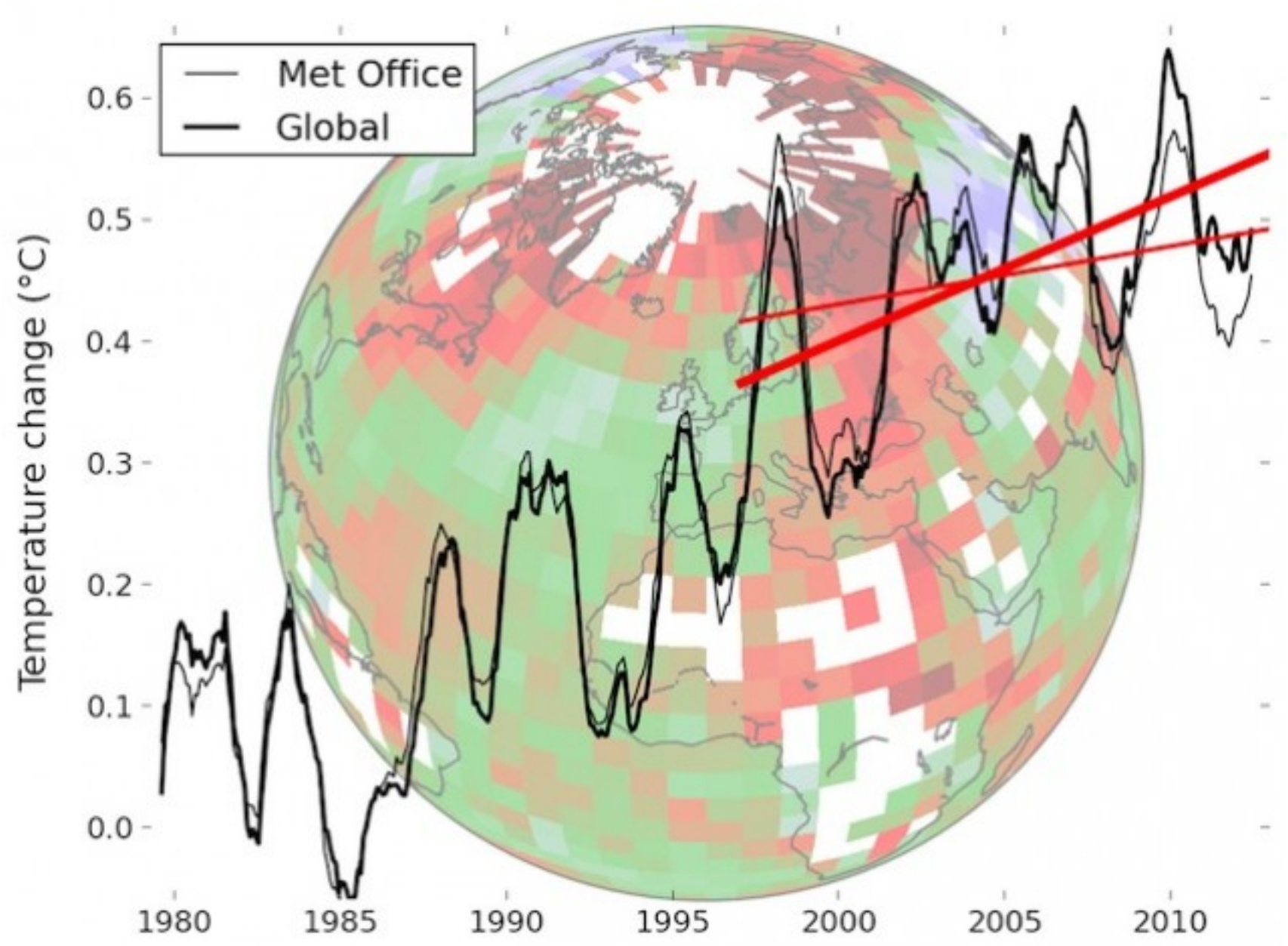
GLOBAL WARMING CONTINUES TO ACCELERATE

A study last year found that global warming has accelerated in the past 15 years, especially in the ocean. As scientists had predicted, 90 percent of that warming ended up in the oceans. And we reported that Greenland's ice melt increased five-fold since the mid-1990s. Another study that month found "sea level rising 60% faster than projected."

And yet *much of the media believes climate change isn't what gets measured and reported by scientists, but is somehow a dialectic or a debate between scientists and deniers*. So while 2010 was the hottest year on record and the 2000s the hottest decade on record, even prestigious media outlets like the New York Times keep pushing the meme that global warming has paused or inexplicably slowed down a great deal.

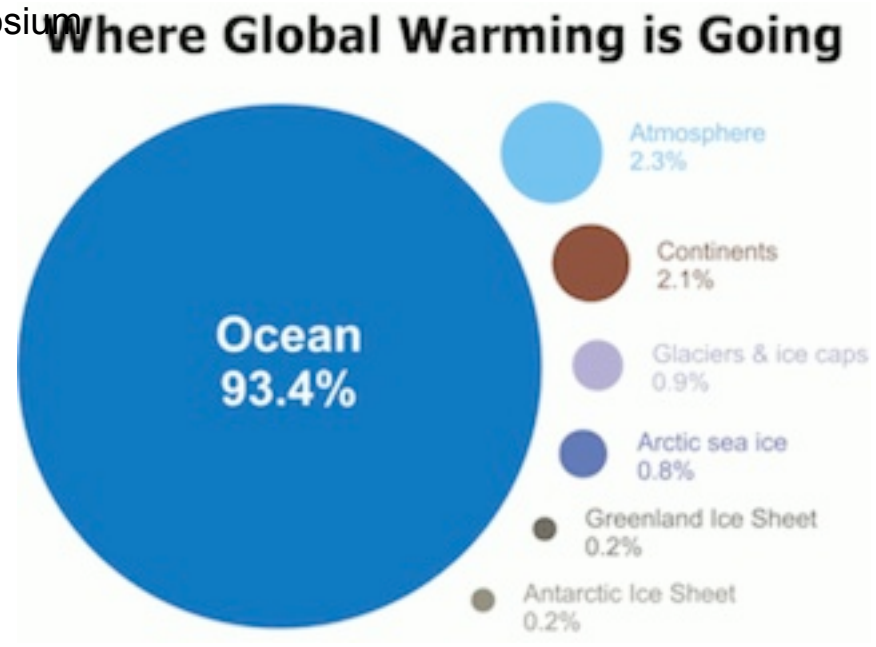
Back in December, researchers Cowtan and Way showed that much of the supposed slow down was due to missing data. As RealClimate explained in its post "Global Warming Since

A new study by British and Canadian researchers shows that the global temperature rise of the past 15 years has been greatly underestimated. The reason is the data gaps in the weather station network, especially in the Arctic. If you fill these data gaps using satellite measurements, the warming trend is more than doubled in the widely used HadCRUT4 data, and the much-discussed "warming pause" has virtually disappeared.



The corrected data (bold lines) are shown compared to the uncorrected ones (thin lines). Via Real Climate.

"There are no permanent weather stations in the Arctic Ocean, the place on Earth that has been warming fastest," as *New Scientist* explained five years ago. "The UK's Hadley Centre record simply excludes this area, whereas the NASA version assumes its surface temperature is the same as that of the nearest land-based stations." As I've discussed many times, that's why we know with high certainty that the planet has actually warmed up *more* in the past decade than reported by the global temperature records, especially the Hadley Center's.



So there's no "pause" in global warming, even for surface air temperatures. At that point, the remaining question was, why have surface temperatures slowed their growth, when ocean temperatures and glaciers and Arctic sea ice — which is where 95% of global warming ends up — have seen accelerated warming?

In February, new research offered an answer to that question. It found that the slowdown in the rate of surface warming is because trade winds have sped up in an unprecedented fashion, mixing more heat deeper into the oceans, while bringing cooler water up to the surface. Since more than 90 percent of human-induced planetary warming goes into the oceans, while only 2 percent goes into the atmosphere, small changes in ocean uptake can have huge impact on surface temperatures.

Lead author Prof. Matthew England explained in a news release:

> "Scientists have long suspected that extra ocean heat uptake has slowed the rise of global average temperatures, but the mechanism behind the hiatus remained unclear.... But the heat uptake is by no means permanent: when the trade wind strength returns to normal –- as it inevitably will –- our research suggests heat will quickly accumulate in the atmosphere. So **global temperatures look set to rise rapidly** out of the hiatus, returning to the levels projected within as little as a decade."

What that study found is that temperatures are likely to jump in the coming years since "the net effect of these anomalous winds is a cooling in the 2012 global average surface air temperature of 0.1–0.2°C."

NEW STUDY VINDICATES CLIMATE MODELS

And that brings us to the new study published in Nature Climate Change, "Well-estimated

global surface warming in climate projections selected for ENSO phase." The El Niño-Southern oscillation (ENSO) is the cyclical warming and cooling of the central and eastern tropical Pacific, whose best known manifestations are El Niño and La Niña.

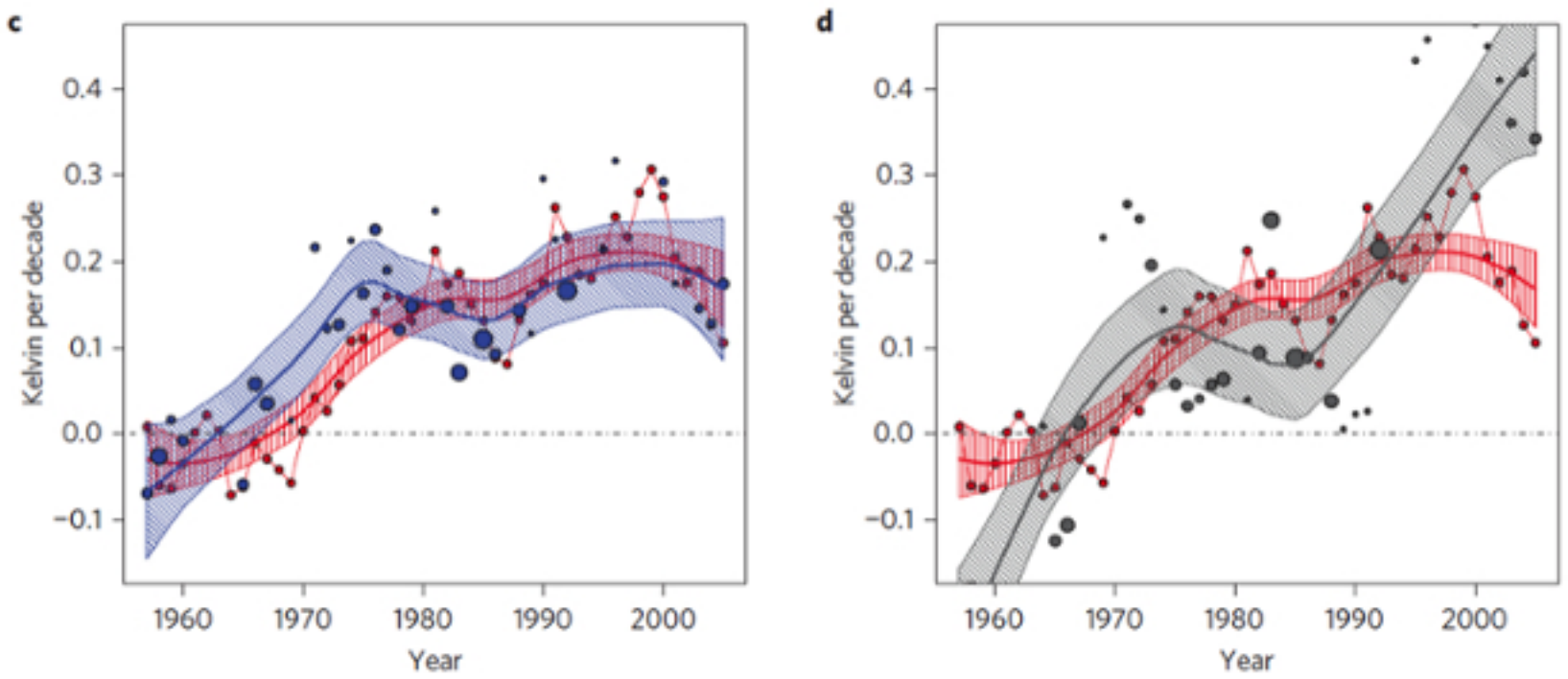
As the NASA chart at the top shows, over the short term ENSO can have a significant impact on global temperatures — and so it can impact the ability of even the latest climate models (so-called CMIP5 models) to accurately project temperatures over a period of 15 years or less.

In their abstract, the authors explain "Some studies and the IPCC Fifth Assessment Report suggest that the recent 15-year period (1998–2012) provides evidence that models are overestimating current temperature evolution." But the authors note, "Such comparisons are not evidence against model trends because they represent only one realization where the decadal natural variability component of the model climate is generally not in phase with observations."

The authors employed a clever way to figure out if the models were accurate or not. They took a great many simulations from 18 CMIP5 models. Then, as the UK Guardian explained, "looked at each 15-year period since the 1950s, and compared how accurately each model simulation had represented El Niño and La Niña conditions during those 15 years" – using the temperature trend in the Niño3.4 region, the key ENSO indicator.

In their study, the authors "present a more appropriate test of models where only those models with natural variability" that is "largely in phase with [ENSO] observations are selected from multi-model ensembles for comparison with observations. *These tests show that climate models have provided good estimates of 15-year trends, including for recent periods and for Pacific spatial trend patterns*."

As the Guardian explains, "The study authors compared the simulations that were correctly synchronized with the ocean cycles (blue data in the left frame below) and the most out-of-sync (grey data in the right frame) to the observed global surface temperature changes (red) for each 15-year period" (using the corrected global temperature data from



Red: 15-year observed trends for each period. Blue: 15-year average trends from CMIP5 runs where the model Niño3.4 trend is close to observations. Grey: average 15-year trends for only the models with the worst correspondence to the Niño3.4 trend. The sizes of the dots are proportional to the number of models selected. From Nature Climate Change

Thus, the recent faux pause in the rise of surface air temperatures turns out to be nothing more than a modest slowdown driven by the short-term ENSO trend, which has favored the cooler La Niñas in the last few years (as the NASA figure at the top shows). As the Guardian points out, this conclusion "is supported by many recent studies finding that unprecedentedly strong Pacific trade winds have been churning the ocean and funneling more heat to the deeper layers, leaving less to warm the surface. All signs point to this being a temporary change, and once the oceans begin to switch back to more frequent El Niño conditions, we expect to see less efficient ocean heat absorption leading to accelerated warming of global surface temperatures."

Finally, since the new study reconfirms that the latest climate models are indeed accurate (once ENSO is taken into account), that means if we continue on our path of general inaction on climate change, we face "9°F Warming For U.S., Faster Sea Rise, More Extreme Weather, Permafrost Collapse." The time to act is now.

SOLOMON ISLANDS

NATIONAL CLIMATE CHANGE POLICY

2012 - 2017

Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM)

Honiara, 5-7 August 2014

Prepared by **Frank Wickham**, and co-edited by **John Clarke**, **Douglas Yee** and **Richard Pauku**

For the Solomon Islands Government through the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM).

Final report, June 2012

Photos by; **Climate Change Division, Richard Pauku** and **John Waki**

Cover Design: **Richard Pauku**

FOREWORD

The authoritative Fourth Assessment Report of the Intergovernmental Panel on Climate Change is very clear in its message to the global community that Least Developed Countries such as Solomon Islands will be the most vulnerable to the predicted impacts of climate change. Climate change will bring about big challenges, new opportunities and predicted to have significant effects on Solomon Islands' sustainable development aspirations and goals. This requires an immediate response measure.

This National Climate Change Policy is our country's response to the challenges and opportunities that climate change presents to us. It's development through consultations and use of our own government officers with the help of experts and resource people demonstrates to the world that the government and people of Solomon Islands intends to be pro-active, strategic and take ownership of planning and implementing adaptation, risk reduction and mitigation response measures.

This policy will enable better coordination of climate change work in the country and provides opportunities for cooperation and collaboration between the government and people of Solomon Islands as well as with our valued development partners, international and regional institutions, intergovernmental organizations and experts.

The National Coalition for Reform and Advancement (NCRA) Government has set clear goals to be achieved during its term in office and includes, amongst others, the development of a National Climate Change and Disaster Risk Reduction Policy. As Minister of Environment, Climate Change, Disaster Management and Meteorology, I am pleased that we have achieved this. Furthermore, we have facilitated the amalgamation of the Climate Change Division and the National Disaster Management Office under one Ministry and the integration of climate change and disaster risk reduction in this policy framework. I am confident that much more can be achieved when we mainstream climate change into all our development sectors. Climate change will burden government's capacity and with our capacity limitations, we look to our development partners for guidance and support.

In line with the overarching framework of our National Development Strategy, let us now move on and implement this National Climate Change Policy directives and strategies, and lay the foundation that will enable our future generations to effectively adapt to and mitigate the effects of climate change.

Tenkyu tumas and God Bless our Solomon Islands.

_____

Honourable John Moffat Fugui

Minister for Environment, Climate Change, Disaster Management and Meteorology

ACKNOWLEDGEMENT

It has been a challenging experience to formulate a policy that is cross-cutting in nature and complementary to many of our national development policies. Having represented Solomon Islands in a range of high level international and regional climate change negotiations and engaged in a wide range of issues relating to climate change and disaster risk reduction, I am pleased that we now have a national Climate Change Policy to guide our work to address this important sustainable development issue.

The development of this national Climate Change Policy has been possible with the funding support of the Global Environment Facility through the Pacific Adaptation to Climate Change (PACC) Project implemented through the United Nations Development Program (UNDP), and executed by the Secretariat of the Pacific Regional Environment Programme (SPREP). Additional support was also provided by the UNDP, the Adaptation Fund (AF), the World Bank and ADB. We say tenkyu tumas to our development partners and look forward to on-going support to address climate change.

The constructive guidance and mentoring of the former Permanent Secretary of MECDM, Mr. Rence Sore, in ensuring the drafting of this policy is implemented without delay, and that the policy is purposeful, focused, relevant, and addressing the needs of Solomon Islands, is hereby acknowledged. The contributions of Permanent Secretaries of other line ministries is also acknowledged.

We take this opportunity to acknowledge our Solomon Islands Ambassador to the United Nations, His Excellency Colin Beck, for championing the cause of climate change adaptation, disaster risk reduction and mitigation for Solomon Islands and other Least Developed Countries and Small Islands States. Ambassador Beck's untiring efforts on the global stage is an inspiration to many here at home.

Sincere appreciation and acknowledgement goes to the senior officers and staff of our Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM), who worked very hard to facilitate and contribute to the development of this document. We acknowledge our officers across our Ministries who provided valuable time and input into the draft, to our local resource people, our provincial government representatives, civil society representatives and individuals from various walks of life who contributed in various ways. Congratulations one and all for a job well done.

We also remember and honor our dear colleague, the late Simon Fu'o, who had just joined our Ministry for a career in addressing climate change, and whose untimely passing has robbed the nation of a future leader.

May Almighty God guide us all as we implement this policy and its strategies.

Tenkyu tumas long iufala evriwan

ACRONYMS

ADB	Asian Development Bank
AR4	Fourth Assessment Report
EIA	Environment Impact Assessment
ENSO	El Nino Southern Oscillation
GEF	Global Environment Facility
GDP	Gross Domestic Product
GHG	Green House Gas
GCM	Global Circulation Models
IEA	International Energy Agency
INC	Initial National Communication
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Products Use
ITCZ	Intertropical Convergence Zone
KP	Kyoto Protocol
MAL	Ministry of Agriculture and Livestock
MDGs	Millennium Development Goals
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
NGOs	Non Government Organizations
NCCC	National Climate Change Council
NAPA	National Adaptation Program of Action
NCSA	National Capacity Self Assessment
NDMO	National Disaster Management Office
PACC	Pacific Adaptation to Climate Change Project
POPs	Persistent Organic Pollutants
PIFACC	Pacific Islands Framework for Action on Climate Change
SIG	Solomon Islands Government
SPREP	Secretariat of the Pacific Regional Environment Programme
SPCZ	South Pacific Convergence Zone
SOPAC	South Pacific Applied Geosciences Commission
TNA	Technology Needs Assessment
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
V&A	Vulnerability and Adaptation Assessment
WPM	Western Pacific Monsoon

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 CLIMATE CHANGE AND GLOBAL ENVIRONMENTAL CHANGE

Climate change and its accompanying impacts is one of the most challenging and complex environmental problems now confronting the global environment and humanity. Scientific evidence and the work of the global scientific authority on climate change, the Intergovernmental Panel on Climate Change (IPCC, 2007), has shown that concentrations of Green House Gases (GHG) in the earth's atmosphere have increased significantly since the industrial revolution. Moreover, there is a growing scientific consensus that the window for limiting temperature rise to 2˚C is past, and that the slow international response to limiting emissions, combined with the growing catalogue of feedback mechanisms will now inevitably lead to a mean global temperature rise of 3˚C, or more, by century's end. There is overwhelming evidence to show that this is caused by human activities such as burning of fossil fuels, removal of carbon from forests and soils and increasing emissions from waste and industrial processes. As a result of this the earth's atmosphere is getting hotter, weather patterns are changing and sea level is rising due to warming and expansion of the oceans as well as the melting of glaciers and ice in the colder regions of the world. GHG emission levels are strongly linked to economic development energy demand which is showing no signs of slowing down. The International Energy Agency (IEA), energy Technology Perspectives 2008 report has estimated that global energy demand will double from present levels by around 2030 (IEA, 2008).

The Fourth Assessment Report (AR4) of the IPCC in 2007, states that GHG concentration in the atmosphere would need to stay below the level of 450 parts per million (ppm) in order to prevent average global temperature from rising by more than 2˚C above pre-industrial levels. This is widely considered the maximum temperature increase to avoid irreversible damage to global climate and ecosystems (IPCC, 2007). A more recent and gravely disturbing finding is that the latest scientific knowledge on climate change is showing a rising trend in GHG emissions that will give rise to impacts that are worse than the IPCC worst case scenario and is posing serious risk of severe disruption of the climate system as well as posing a real threat to sustainable development and endangering efforts to achieve the Millennium Development Goals (MDGs).

1.2 GLOBAL AND PACIFIC REGION CLIMATE CHANGE PROJECTIONS

The IPCC AR4 has re-affirmed its earlier conclusions that all countries and regions of the world will be affected in various ways by climate change. The report also indicates that the impacts will vary between and within regions of the world but will hit hardest on the poorest regions and the poorest people who have the least resources for facing the changes brought about by climate related extreme events. The AR4 on Impacts, Adaptation and Vulnerability chapter on small islands confirms the following future impacts (IPCC, 2007);

- Small islands will be very vulnerable to sea level rise and extreme events;
- Sea level will increase rates of inundation, storm surges, erosion and other coastal; hazards and will threaten infrastructure, settlement, coastal food stock and facilities supporting livelihoods;
- Water resources are likely to be seriously affected;
- Coral reefs, fisheries and marine-based resources will be heavily impacted;
- Species is starting to be lost or replaced due to warming in higher altitudes;
- Subsistence and commercial agriculture will be adversely affected;
- Effects on tourism are likely to be direct and indirect and largely negative; and
- There is growing concern that human health will be impacted, mostly in adverse ways.

The location and diverse geography of islands in the Pacific means that each island or island group will experience variations in weather events and overall climate change.

2.0 NATIONAL CONTEXT

2.1 SUMMARY NATIONAL CONTEXT

Government System:	Westminster System of Government with the Prime Minister as Head of the Executive
Levels of government:	Two levels of government: National and 9 Provincial Governments
Parliament:	50 member Parliament with a term of 4 years
Land area	28,000 sq km of land; 4,023 km of coastline
Exclusive economic zone (EEZ):	1.34 million sq km
Population:	515,870 (in 2009) with approximately 85% in rural areas
Population growth rate:	National growth rate is at 2.3% with rural to urban migration estimated at 4% per annum
Human Development Index:	Ranked 142 from 187 countries (UNDP, 2011)
Main sources of national income during 2007-2011:	Logging, Fisheries, Agriculture, Aid
GDP per capita:	Second lowest average per capita income in the Pacific region (ADB, 2010)
GDP growth rate:	5% (in 2010) and was projected to be 5% also in 2011
Inflation:	19.4% in 2008 and has declined to 2.9% in 2011

2.2 CLIMATE DRIVERS AND TRENDS

2.2.1 EL NINO SOUTHERN OSCILLATION

One of the drivers of inter-annual climate variability affecting Solomon Islands is the El Nino-Southern Oscillation (ENSO) events which are known to have distinct oceanographic, temperature, rainfall and cyclonic conditions (Figure 2.2.1). There are usually two phases: El Nino and La Nina. During an El Nino ocean surface waters are warmer than normal and the equatorial divergence is located well to the east of the Pacific. A La Nina event is when the temperatures are cooler and equatorial divergence occurs across much of the region. Cyclones and high rainfall events are associated with the La Nina periods. The future of ENSO events is still not clear but it is expected that it will continue to be an important driver of Solomon Islands climate into the future.

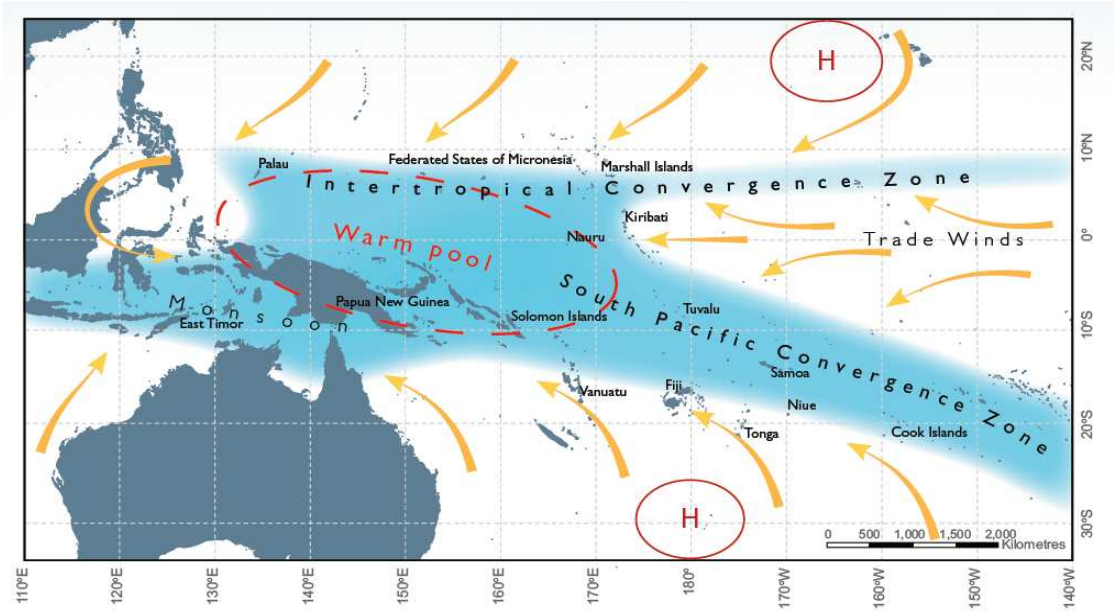


Figure 2.2.1: The average positions of the major climate features in November to April. *Source: PCCSP Project 2011.*

2.2.2 CONVERGENCE ZONES AND MONSOON

Solomon Islands is also affected by the seasonal movement of the South Pacific Convergence Zone (SPCZ) and the Intertropical Convergence Zone (ITCZ). These are bands of cloud systems that normally brings heavy rainfall over the islands during their occurrences. These cloud bands are closely associated with rising warm air over waters where winds converge.

The Western Pacific Monsoon (WPM) also has some influence on the climate and rainfall of Solomon. This however, is driven by the large differences in ocean and land temperatures and during its occurrence, a very dry condition could turn very wet.

2.2.3 TEMPERATURE

Records of temperature across the country over the past decades show an increasing trend (Figure 2.2.3). This is in line with the global and regional projections and corroborated by the experiences provided by women and farmers consulted in various parts of the country.

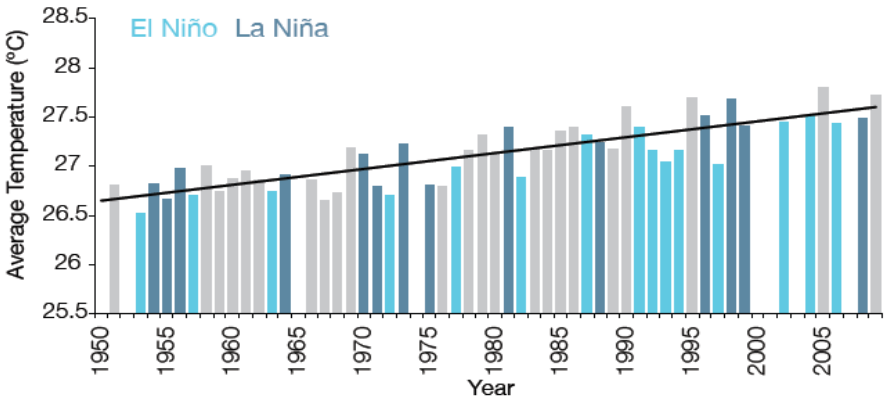


Figure 2.23: Annual average temperature for Honiara. Light blue bars indicate El Nino years. Dark blue bars indicate La Nina years and the grey bars indicate neutral years. *Source: PCCSP Project.*

2.2.4 RAINFALL

Data analysed to date shows no clear indication on what the tendency of the annual rainfall for the whole country will be like, as there are large gaps in certain data sets rendering it difficult to construct a rational relationship reasonable for all stations. Records from weather stations around the country reveal that some areas showed a decline in their annual rainfall (Auki), while others (Munda and Lata, in Santa Cruz) displayed an increase in rainfall trend (Figure 2.2.4.

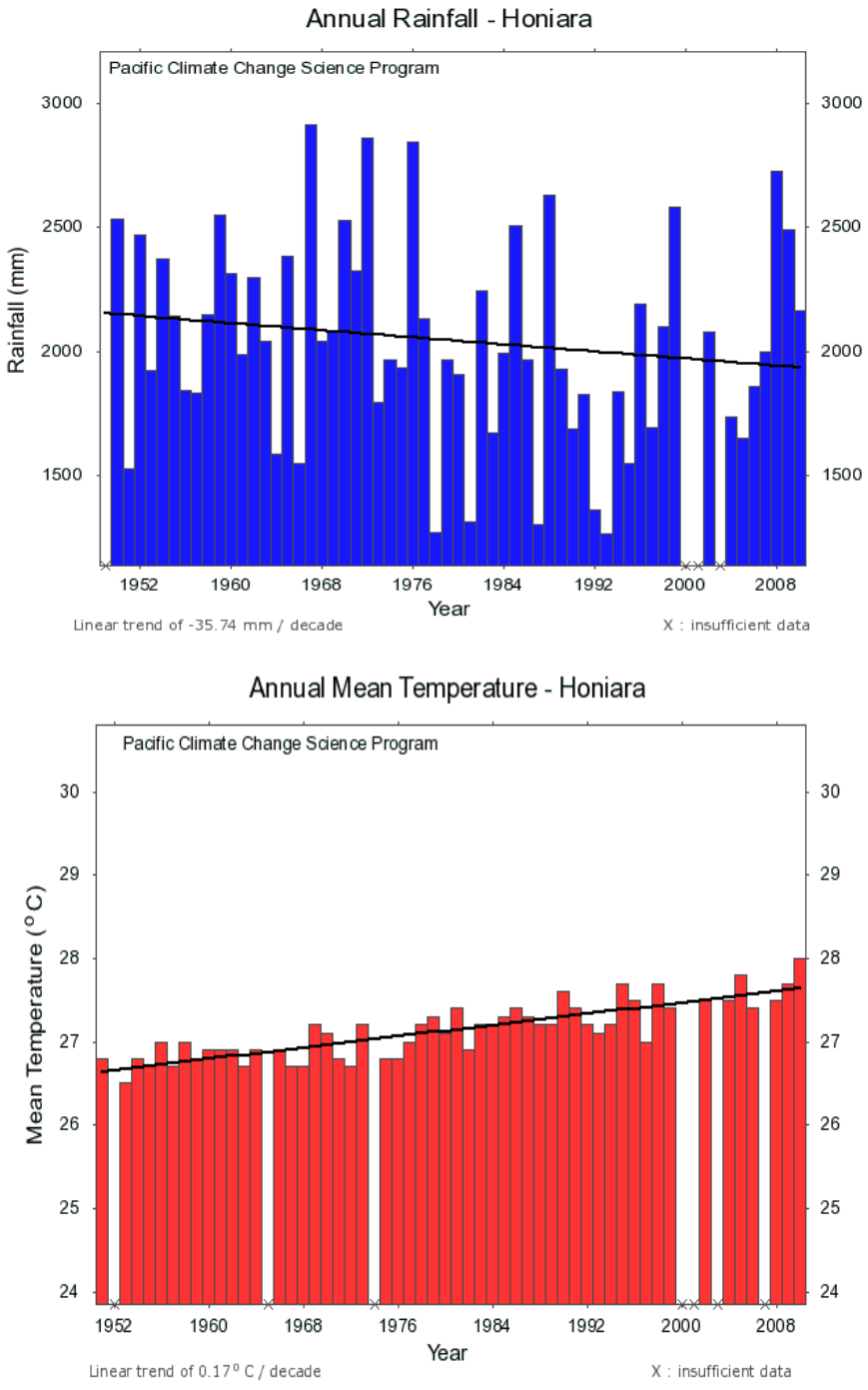


Figure 2.2.4: Annual rainfall (above) and mean temperature (below) for Honiara. *Source: Solomon Islands Meteorological Services.*

2.2.5 CYCLONES

The recent review of international literature by the World Fish report (Brokovich *et al.*, 2012) on trends of cyclones in the Pacific has the following summary:

- The dissipation force of a cyclone is correlated to sea surface temperature.
- Number of high intensity cyclones (categories 4 and 5) in the north-western Pacific has gone up in the last 30 years.
- A recent study has shown that for the South Pacific region, there is no significant trend in cyclone frequency nor intensity.
- Records of cyclones compiled by the NDMO indicate a gradual shift in the location of cyclones from Northern parts of the country (i.e. North of the capital city of Honiara) towards the South-eastern parts of the country. This is consistent with the modelled and observed southerly drift of sea-surface temperatures in excess of 27˚C. Cyclones in the early 1900's to the 1950's caused destructive winds and damages to sites at Ontong Java atoll, the northernmost part of the country.

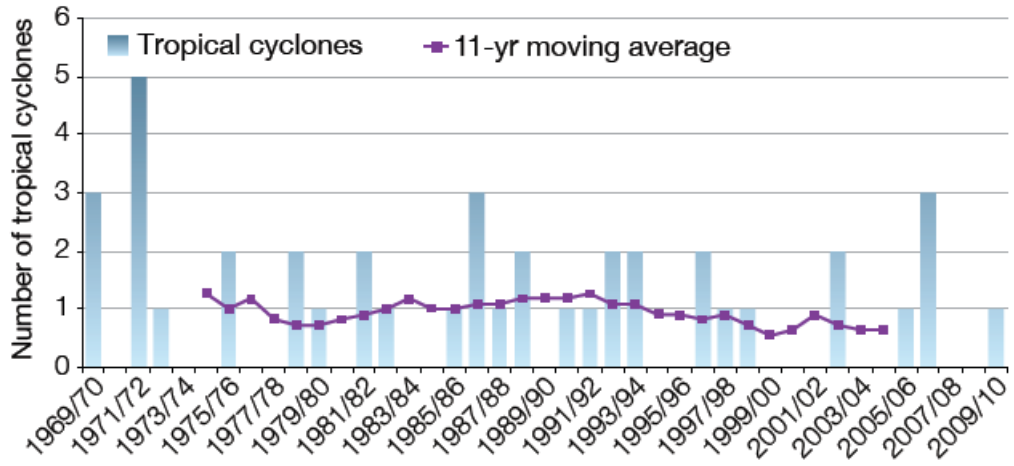


Figure 2.2.5: Number of Tropical Cyclones passing within 400km of Honiara. 11-year moving average in purple. *Source: PCCSP Project.*

2.2.6 DROUGHT

Solomon Islands is vulnerable to droughts and many parts of the country have been affected many times over the past years. Droughts are usually associated with the El Nino phenomenon. The 1997/98 El Nino caused severe drought in many parts of the country.

2.2.7 SEA LEVEL RISE

Honiara tide gauge (1994 – 2009) shows an increase of ≈7.7 mm/yr while Satellite data shows an increase of 8mm/yr since 1993. The global average rise is 2.8-3.6mm/yr. From records obtained so far the rate in sea level rise for Honiara is higher than the global average.

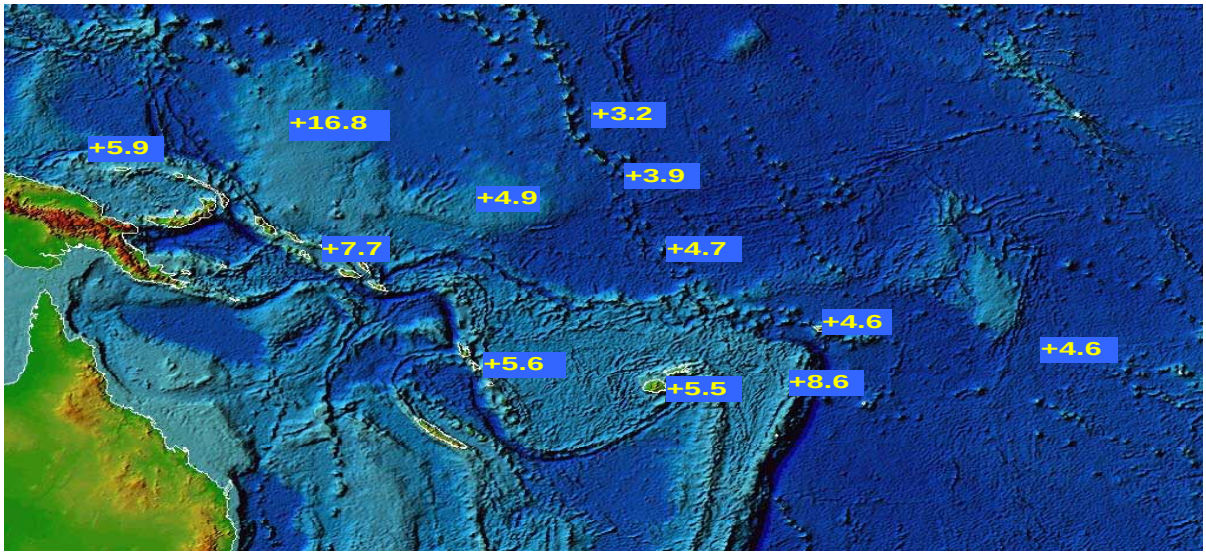


Figure 2.2.7 Map of region showing net relative sea level trends (in mm/year) after subtracting the effects of the vertical movement of the platform and the inverse barometer pressure effect. Utilizing all the data collected since the start of the project up to the end of December 2009.

2.3 FUTURE CLIMATE OF SOLOMON ISLANDS

A recent report by the Pacific Climate Change Science Programme (PCCSP) funded by the Australian Government has analysed up to 24 different global models of future climate based on three IPCC scenarios: Low (B1), Medium (A1B) and High (A2). The scenarios are linked to trends in global green house gas emissions and potential global mitigation actions.

2.3.1 SEA LEVEL

SCENARIO	2030 (cm)	2055 (cm)	2090 (cm)
B1: Low emissions	4 - 14	10 - 26	17 - 45
A1B: Medium emissions	5 - 14	8 - 30	19 - 58
A2: High emissions	4 - 15	8 - 30	20 - 60

Source: PCCSP Project

The IPCC has developed a range of global emissions scenarios ranging from low to high emissions. Estimates of sea level changes have been produced by the PCCSP using data from the IPCC fourth assessment report. The projections for the Solomon Islands are summarised in the Table on the side.

For Solomon Islands sea level is projected to increase and likely to have higher rates than projected. Combined with storm surges and extreme events this is likely to cause increasing coastal erosion and coastal flooding.

SCENARIO	2030 (°C)	2055 (°C)	2090 (°C)
B1: Low emissions	0.2 - 1.0	0.7 - 1.5	0.9 - 2.1
A1B: Medium emissions	0.4 - 1.2	0.9 - 1.9	1.5 - 3.1
A2: High emissions	0.4 - 1.0	1.0 - 1.8	2.1 - 3.3

Source: PCCSP Project

The projections show that annual average air temperature and sea surface temperature will continue to increase over time. There will be a rise in number of hot days and warm nights and decline in cooler weather.

Under a low-emission scenario air temperatures in Solomon Islands will increase by a range of 0.2-1.0˚C by year 2030. (See Table on side)

2.3.2 RAINFALL

There are some uncertainties/inconsistencies between the rainfall models currently being generated. A trend is starting to emerge but more observation data are required. Generally there is expected to be an increase in annual rainfall during both the wet and dry seasons due to expected intensification of the south pacific convergence zone (SPCZ) and the western monsoon

Extreme rainfall days are likely to be more frequent and more intense, while drought is expected to become progressively less frequent over the course of the 21st century. There are also uncertainties in the projection of El Nino Southern Oscillation, however in the absence of data to the contrary, it is assumed that ENSO will continue to exert an influence over weather patterns in much the same way as in the past.

Source: Solomon Islands Meteorological Services

2.3.3 TROPICAL CYCLONES

Source: NDMO

There is a projected decrease in the number of tropical cyclones by the end of the 21st century

It is likely that of the cyclones that do occur, more will be intense or severe (category 4 & 5) with a projected 2 to 11% increase in maximum wind speed.

Preliminary analysis also suggests there may be an increase in rainfall intensity within 100km of cyclone centre, although much more work is needed to confirm this.

Source: *PCCSP Project*

2.3.4 SUMMARY OF THE PREDICTED FUTURE CLIMATE OF SOLOMON ISLANDS

- Temperatures will continue to increase and reach a range of 0.4-1.0˚C in 2030.
- An increase in the number of hot days and warm nights and less cooler weather.
- Average annual and seasonal rainfall projected to increase however there is uncertainty in the projections.
- Extreme rainfall periods will occur more often and be more intense.
- There will be less frequent but more intense cyclones including increase in average maximum wind speed and a possible increase in rainfall intensity.
- Sea level will continue to rise and increase impact of storm surges and coastal inundation
- Ocean acidification will continue to increase and affect health of reefs.

Source: SPCCSP Project.

2.4 VULNERABLE, DISASTER RISK CONTEXT AND RESPONSE MEASURES

The first formal description of Solomon Islands vulnerability to climate change was presented in the country's Initial National Communication (INC) to the UNFCCC in 2004. The report recognized the limited understanding on the vulnerability of the country to climate change and sea level rise and the need to put in place 'suitable plans, policies and measures'. Priority vulnerable areas identified included; 1) Subsistence and commercial agriculture, 2) Human health, 4) Coastal environments and systems, 4) Water resources, 5) Marine resources

In 2008 Solomon Islands developed a National Adaptation Program of Action (NAPA) with funding assistance from the GEF and UNDP. The NAPA presents Solomon Islands immediate and urgent adaptation needs based on rapid V&A assessment in selected parts of the country. The NAPA describes and prioritizes the country's vulnerable sectors together with project profiles. The main vulnerable sectors include: 1) Agriculture and food security, 2) Water supply and sanitation, 3) Human health, 4) Human settlements, 5) Fisheries and marine resources, 6) Coastal Protection, 7) Infrastructure, 8) Waste management, and; 9) Tourism.

Building on the NAPA, the Solomon Islands Second National Communication (SNC) to the UNFCCC has summarised a range of vulnerable locations in the country based on their level of exposure, sensitivity and limited coping capacity of people. On-going scientific and socio-economic assessments are needed to identify and determine the level of vulnerability of communities, infrastructure and geographic areas in the country to guide future adaptation actions.

Disaster risk assessments have also been undertaken at the macro and community level scales in the country and provide very useful information on historic disaster events that can guide adaptation and disaster risk reduction measures. These include studies undertaken for Solomon Islands by the Pacific Catastrophe Risk Assessment and Financing Initiative and past disaster management reports and disaster risk assessments by the NDMO.

3.0 POLICY RATIONALE

In its efforts to pursue social and economic development objectives the people and government of Solomon Islands have been relying heavily on the nation's natural resources base and the support from development partners. Additionally, and despite its limited capacity, the government has taken significant steps in the past ten years to begin implementing climate change adaptation and mitigation actions including the development of the National Adaptation Program of Action, National Disaster Management Strategy, Renewable Energy Framework and establishing a government agency to oversee climate change. Civil society organizations are building capacity to support communities adapt to climate change and the private sector has made steady progress with renewable energy technologies.

The government recognizes that climate change is a sustainable development issue that brings challenges as well as opportunities. Achieving the optimum level of economic growth to support the rapidly growing population will require a scaling up of economic activities and utilization of natural capital that will also give rise to increasing environmental impacts and emissions of green house gases in the future. Climate change will also threaten the successful implementation and achievement of Solomon Islands National Development Strategy into the future and place added burden on government resources.

The global community recognizes that an important solution to climate change is the protection and sustainable management of forests. In Solomon Islands annual timber extraction rates are currently significantly higher than established sustainable levels and it is predicted that merchantable forest areas will be depleted within the next five years. Unsustainable management of forests increases the vulnerability of people, biodiversity and the economy and contributes to global warming. The country's low human development and low per capita income highlights the country's high level of social vulnerability which will be exacerbated by climate change.

Building on the progress to date and recognizing the need to enhance adaptive capacity while pursuing a low carbon development pathway, this policy provides a national strategic framework for the country to address the challenges and benefit from the opportunities that climate change brings. The policy links government, civil society and development partners in a strategic and coordinated approach to addressing climate change. It seeks to find a balance between socio-economic development and sustainable utilization of natural resources as a climate change adaptation and mitigation measure. The policy is framed to take advantage of the dual benefits of adaptation through mitigation and to position the country to benefit from the growing range of global innovative financing opportunities such as the Adaptation Fund, the Green Climate Fund, the Clean Development Mechanism (CDM), and Reducing Emissions from Deforestation and Forest Degradation (REDD+). Further information on these financing opportunities is provided in the Annex 1.

4.0 POLICY CONTEXT AND LINKAGES

The Solomon Islands National Climate Change Policy is guided by and linked to a framework of national, regional and international policies and strategies. It aligns with the NDS, complements with other national policies and strategies and is an expression of the country's commitment to international and regional multi-lateral environment agreements (MEA) to which the country is formally committed to.

On the international front Solomon Islands is a Party to the **United Nations Framework Convention on Climate Change (UNFCCC)** and its **Kyoto Protocol** which together make up the core of the international policy response to climate change. Solomon Islands is also a signatory to the **Hyogo Framework on Disaster Risk Management** and has been involved in the European Union- Global Climate Change Alliance programmes . The country continues to benefit from funding by the Global Environment Facility (GEF) which is the financing mechanism for the UNFCCC made available through Implementing Agencies such as the UNDP, UNEP, FAO and World Bank.

Within the Pacific regional level, Solomon Islands is a signatory to the [1]**Pacific Plan, Pacific Islands Framework for Action on Climate Change (PIFACC)** and the **Regional Framework on Disaster Risk Reduction and Disaster Management** that have established climate change and disaster risk management related objectives and actions. Partnerships continue to be developed with a number of international and regional inter-governmental organizations, some of which have specific mandates to assist their member countries address climate change, disaster risk management and related development issues.

At the national level the government's overarching development planning framework is the **Solomon Islands National Development Strategy: 2011-2020 (NDS).** The NDS includes a range of Focus Areas and Objectives, Policies and Strategies that together can contribute to enhance adaptation, disaster risk management and mitigation capacity in Solomon Islands.
A summary of the NDS Focus Areas and Objectives is presented in **Annex 7.**

Amongst the Strategy's various themes and objectives, Theme 7 is targeted at 'Creating and Maintaining the Enabling Environment'. Under this theme are two objectives including;

Objective 7: Effectively Respond to Climate Change and Manage the Environment and Risks of Natural Disasters.

Objective 8: Improve Governance and Order at National, Provincial and Community Levels and Strengthen Links at all levels.

[1] A plan document endorsed by Leaders of the Pacific Islands Countries at a Forum meeting in October 2005. The Goal of the Pacific Plan is to enhance and stimulate economic growth, sustainable development, good governance and security for Pacific countries through regionalism.

Under each of the above objectives are a range of policies and strategies which are also reflected in this climate change policy.

Solomon Islands has an armoury of national legislations and regulations together with a range of policies to support development planning and implementation. Many of the legislations and regulations still need to be effectively enforced through strengthened capacity of the government.

5.0 POLICY VISION, MISSION STATEMENT AND OBJECTIVE

5.1 VISION

A resilient, secure and sustainable Solomon Islands responding to climate change.

5.2 MISSION STATEMENT

To enhance adaptation, disaster risk reduction and mitigation capacity throughout the Solomon Islands that contributes to increased resilience and achievement of sustainable development goals.

5.3 OBJECTIVE

The objective of this Climate Change policy is to provide a guiding framework to;

i) Integrate climate considerations and support the implementation and achievement of Solomon Islands National Development Strategy and other regional and international policies and frameworks

ii) To guide the government and its partners efforts in ensuring that;

- The people, natural environment and economy of the country are resilient and able to adapt to the predicted impacts of climate change;

- The country benefits from clean and renewable energy, energy efficiency and mitigation technologies that improves people's livelihoods and the national economy, is environmentally sustainable and contributes to global efforts to reduce GHG emissions and global warming.

6.0 BROAD POLICY COMMITMENTS

The government of Solomon Islands:

i) Recognizes the authoritative scientific assessments of the Intergovernmental Panel on Climate Change (IPCC) in relation to the causes and predicted effects of climate change, and its guidance on adaptation and mitigation measures to be taken by countries, regions and the global community.

ii) Shall address and mainstream climate change as an integral part of its national sustainable development strategy and programs.

iii) Recognizes the key significance and applicability of local evidence based scientific monitoring. Accordingly the government will carry out its own instrumental and climate vulnerability and adaptation assessments, risk assessments and weather recordings and recognizes already that the people, natural environment and economy of Solomon Islands are very vulnerable to climate variability and the predicted impacts of climate change.

iv) Shall develop the capacity of its people, institutions and communities to reduce climate change disaster risks and adapt to the effects of climate change and shall implement measures to contribute to global efforts in mitigating the causes of climate change.

v) Maintains its commitments as a Party to the UNFCCC, the successor instrument to the Kyoto Protocol, the Hyogo Framework on Risk Management, the PIFACC and other international and regional sustainable development and environmental agreements and targets.

vi) Shall forge and maintain partnerships and seek the support of its development partners through programs, projects, budget support mechanisms and innovative financing mechanisms for the implementation of this national Climate Change Policy.

7.0 POLICY GUIDING PRINCIPLES

The Solomon Islands National Climate Change Policy shall be guided by the following principles:

1.1 Alignment with and guidance from the Solomon Islands national constitution.
This policy framework and its implementation modalities shall be guided by the constitution of the independent state of Solomon Islands.

1.2 Stakeholder participation and collaboration
Solomon Islanders across all levels cannot be spectators in the on-going efforts to address climate change. National, provincial and community mitigation, adaptation and disaster risk reduction programs and activities shall promote and ensure the active participation of all.

1.3 Holistic and multi-disciplinary approach
Climate change impacts will be multi-dimensional therefore the planning and implementation of this policy shall be holistic and multi-disciplinary with special recognition to the important role of science and traditional knowledge.

1.4 Precautionary principle and no regrets approach
Given the limited certainty surrounding the predicted extent and dimensions of climate change impacts at the national, provincial and community levels for Solomon Islands, the precautionary principle and no regrets approach will be used in planning and implementing this policy.

1.5 Respect for culture and rights of indigenous people
Climate change will impact on natural resource utilization and people's livelihoods. The culture and rights of indigenous communities shall be respected throughout the planning and implementation of climate change mitigation, adaptation and disaster risk reduction programs and activities.

1.6 Gender equity and involvement of youth, children and people with special needs.
Climate change impacts will affect everyone in Solomon Islands and the future generations. The implementation of this policy shall ensure gender equity, and the involvement of men, women, youth, children and people with special needs.

1.7 Mainstreaming and integration
Climate change will impact all sectors and levels of society, governance frameworks, the natural environment and non-living resources. It is everyone's business and shall be addressed in an integrated and holistic manner.

1.8 Integration of climate change adaptation and disaster risk reduction
Climate change adaptation and disaster risk reduction are closely inter-related and shall be aligned.

1.9 Science and evidence based adaptation, disaster risk reduction and mitigation

Climate change policy and adaptation, disaster risk reduction and mitigation measurers will be based upon, as far as practicable, both international climate change research and evidence based local scientific measurements and observations.

8.0 POLICY OUTCOMES, DIRECTIVES AND STRATEGIES

8.1 ENABLING ENVIRONMENT AND INSTITUTIONAL ARRANGEMENTS

Climate change will affect all development sectors of the country. This requires an effective institutional arrangement and enabling environment in place to address it as an integrated and cross-cutting development issue. The enabling environment includes having in place policies, strategies and networking, while an institutional arrangement includes having a dedicated government lead agency and coordination mechanism to guide and coordinate strategies and actions to address climate change at the national as well as provincial and community levels.

8.1.1 POLICY DIRECTIVE AND STRATEGIES

1) Solomon shall have in place an effective enabling environment and institutional arrangement to plan, implement and coordinate an integrated and multi-stakeholder participatory approach to addressing climate change. To ensure this is achieved, the Government shall:

a) Strengthen capacity of the Climate Change Division as the government lead agency overseeing climate change to lead, guide and coordinate national programs and actions addressing climate change, and coordinate preparations and participation in international climate change negotiations.

b) Draft and enact national climate change legislation to give legal mandate to the government lead agency responsible for climate change and its associated coordinating and implementation bodies and that shall also include provisions for mandatory assessments and reporting for purposes of planning, implementing and evaluating climate change adaptation and mitigation actions.

c) Establish a National Climate Change Council to oversee the implementation, coordination, monitoring and evaluation of national climate change policies and strategies.

d) Establish a Climate Change Working Group (CCWG) to provide inter-agency and inter-stakeholder coordination for the implementation of the policy. The Membership, scope and role of the CCWG is presented in **Annex 5.**

e) Strengthen capacity of the government lead agency overseeing climate change to be the Secretariat of the National Climate Change Council.

f) Enhance the role and capacity of the Environment and Conservation Standing Committee of Parliament to include oversight over Climate Change.

g) Develop national and provincial level climate change policies and strategies that is in line with the NDS and other national sector policies and National Disaster Management Framework.

h) Establish national Thematic Working Groups (TWG) to provide technical and strategic support and advice to the lead agency and National Climate Change Council on climate change issues. The working groups shall oversee the following climate change thematic areas;

- Vulnerability, disaster risk reduction and adaptation;
- Mitigation & Green house gas inventory;
- Research, Systematic Observation and Technology Transfer; and
- Education, awareness and capacity building.

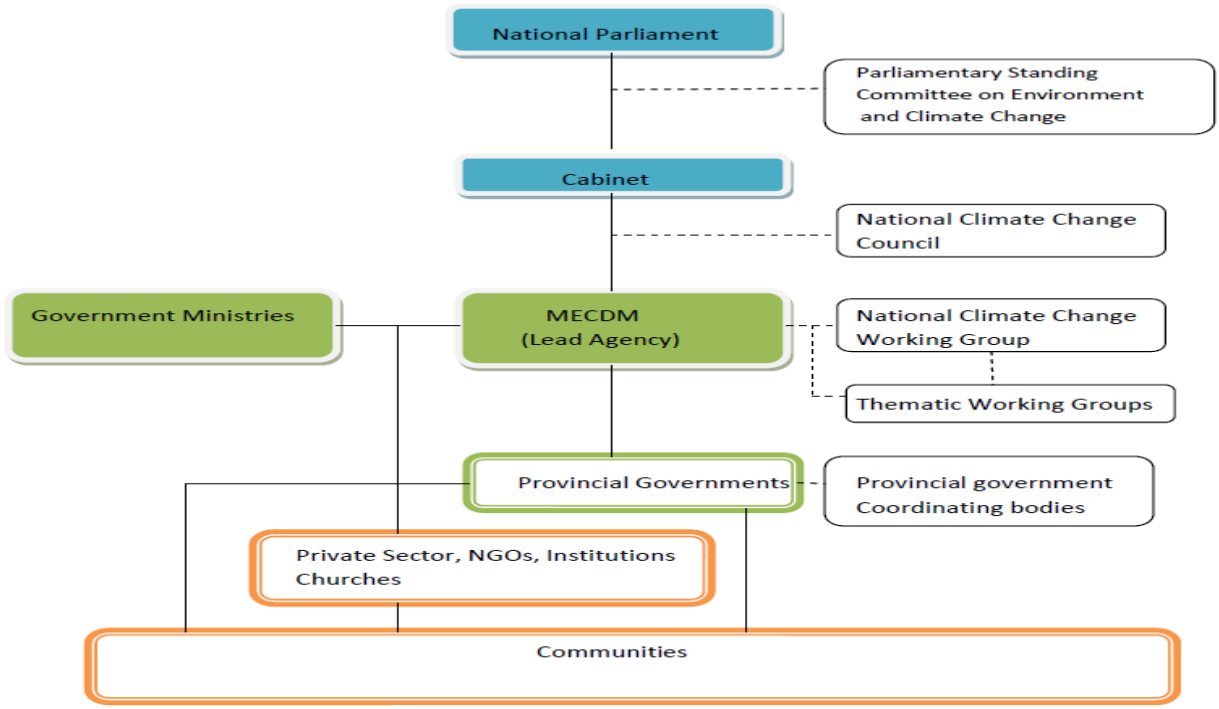
The membership, broad scope and role of the Thematic Working Groups and linkage to the lead agency and National Climate Change Council is presented in **Annex 6** to this Policy document.

i) Establish formal climate change coordination arrangements within Provincial Governments using existing or new coordinating bodies.

j) Designate officials as Climate Change Focal Points within national and provincial government Ministries and Departments as well as national institutions and civil society organizations

k) Establish community-based or village-based climate change coordination arrangements using existing or new coordinating bodies.

Figure 8.1.1A Institutional Arrangement for implementation of the Climate Change Policy=



8.2 MAINSTREAMING OF CLIMATE CHANGE

'Mainstreaming' is a process rather than a goal and consists in bringing what can be seen as marginal into the core business and main decision-making process of an organization or institution. Mainstreaming can take place at various levels including laws, strategies, policies and operations. The cross-cutting nature of climate change threats and impacts requires that it be integrated into all development sectors and organizations.

8.2.1 POLICY DIRECTIVE AND STRATEGIES

2) Climate change shall be mainstreamed into all development sectors and integrated into the work of government agencies, national institutions, civil society and private sector. To achieve this, the government shall:

a) Support organizations and institutions build capacity for mainstreaming climate change.

b) Review and revise existing relevant legislations and regulations to support climate change adaptation and mitigation.

c) Review national and provincial government policies & strategies and integrate climate change considerations.

d) Integrate climate change considerations into the planning and budgeting processes of national and provincial governments.

e) Mainstream climate change considerations in country partnership arrangements with regional agencies, international agencies and donors

f) Ensure that the National Development Strategy and other national sector strategies are fully climate compatible within their stated time frames.

8.3 VULNERABILITY AND ADAPTATION (V&A) AND DISASTER RISK REDUCTION (DRR)

Vulnerability to climate change is a function of a systems' exposure to climate hazards, sensitivity and coping capacity. The IPCC Fourth Assessment Report (2007) predicts that Least Developed Countries such as Solomon Islands will be amongst the most vulnerable to the predicted impacts of climate change. Observations by the Solomon Islands Meteorological Services (SIMS) indicate that sea level is rising at 7mm per year or about twice the global mean value, temperature is increasing at an average rate of 0.14˚C per decade and more intense rainfall and extreme events are already being experienced as predicted by regional and international scientific bodies through various climate models.

Communities are already experiencing the effects of climate variability and the onset of climate change. The scattered archipelago of Solomon Islands places islands and their inhabitants at varying degrees of exposure to extreme events and their sensitivity and coping capacity are relative to the level of natural resource endowments, socio-economic situation, extent of reliance on biodiversity and other factors. Human activities can also exacerbate their vulnerability to climate change. It has also been recognized that good mitigation actions can contribute to enhancing adaptation.

Solomon Islands has developed a National Adaptation Programme of Action (NAPA) to address its urgent adaptation needs following a rapid vulnerability assessment of its development sectors. The NAPA has established a baseline of vulnerability situations and priority vulnerable sectors that will need to be reviewed from time to time as vulnerability assessments become better informed through the use of scientific and socio-economic tools and when data is more readily available.

Disaster Risk Reduction (DRR) strategies and actions contribute to reducing vulnerability. A nation, community or system is likely to be less vulnerable and more adaptive if it reduces its risks to disasters such as extreme events. On the other hand, the greater the risk from disasters the greater the vulnerability. The close relationship between the DRR and CCA agendas requires good coordination and integration to minimize duplication and maximize synergies.

Solomon Islanders have coped with climate variability and extreme events since time immemorial. Traditional knowledge developed and refined over the years has been a feature of Solomon Islanders resilience and coping capacity but is now eroding due to increasing reliance on modern technology and practices. Reviving and promoting traditional coping strategies and technologies is an essential part of adaptation.

8.3.1 POLICY DIRECTIVE AND STRATEGIES

3) The Government of Solomon Islands considers it vital and urgent to develop the capacity of the country to assess risks and vulnerabilities associated with climate variability and change and to reduce climate change risks and adapt to the predicted impacts of climate change. This includes short term disaster risk reduction measures for climate variability and episodic extreme events, and long term adaptation to climate change including, *inter-alia*, enhancing ecosystem and social resilience, climate proofing infrastructure and relocating communities as a last resort. To minimize vulnerability and risks and enhance adaptation capacity the government shall:

a) Address the NAPA priority sectors and implement the range of projects and actions as Solomon Islands urgent adaptation needs. In order of priority, these include;

i) "increase the resilience of food production and enhance food security to the impacts of climate change and sea-level rise."
ii) increase the resilience of water resources management to impacts of climate change and sea-level rise
iii) improve the capacity for managing impacts of climate change and sea-level rise on human settlements
iv) increase the capacity of health professionals to address adverse impacts of climate on human health
v) promote climate change education, awareness and information dissemination
vi) facilitate adequate adaptation to climate change and sea-level rise in low lying and artificially built-up islands in Malaita and Temotu provinces.
vii) better manage impacts of climate change on waste management
viii) increase the resilience and enhance adaptive capacity of coastal communities, socio-economic activities and infrastructure

ix) improve the understanding of the effects of climate change and climate variability including El Nino-Southern Oscillation on the inshore and tuna fishery resources
x) climate proofing of key infrastructure to risks including sea-level rise.
xi) integrate climate change adaptation strategies and measures into tourism planning and development.

b) Review and revise the NAPA and MECDM Strategic Plan and develop a National Adaptation Plan (NAP) to address climate change over the short, medium and long term. The NAP shall address long term adaptation to climate change and short term disaster risk reduction in relation to climate variability.

c) Develop a Joint National Action Plan (JNAP) for Climate Change Adaptation and Disaster Risk Reduction (DRR) and other hazards, ensuring an integrated and coordinated manner at national, provincial and community levels.

d) Strengthen the capacity and partnerships of national and provincial government agencies, national institutions, NGOs, churches and all Solomon Island communities to undertake vulnerability and adaptation (V&A) and disaster risk reduction (DRR) assessments for different sectors and geographic areas.

e) Expand the national census portfolio and integrate questions to obtain data on extreme events, vulnerability and adaptation. Collaborate with and utilise data from other relevant sources to address features of risk.

f) Provide support to ministries, provincial governments and civil society organizations, including faith-based and private sector organisations, to review and revise their corporate plans, sector programs and strategies to include measures to assess vulnerability of sectors and identify and implement adaptation and disaster risk reduction strategies and actions

g) Develop a coordinated and geo-referenced national information system covering livelihood assets – natural, human, financial, social and physical capital – that can be used to identify sensitivities to climate change, adaptive capacity, and key strategies covering vulnerable groups, natural resources and environmental management and disaster risk reduction and management.

h) Build capacity, plan and implement ecosystem-based vulnerability assessments and adaptation programs and actions including, inter-alia, implementation of the protected areas legislation and regulations, low-impact logging strategies, marine ecosystem management.

i) Undertake risk reduction and vulnerability assessments of urban settlements in Honiara, other urban centres, and sites of national economic priority. Plan and implement adaptation actions.

j) Undertake risk reduction and vulnerability assessments of rural communities and implement adaptation actions targeting prioritized vulnerable communities.

k) Strengthen capacity to integrate climate change considerations into Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA) and revise the Environment Act to integrate climate change.

l) Undertake gender analysis and integrate gender considerations as part of vulnerability and disaster risk assessments as well as adaptation actions. Inclusive participation of women and youth should be actively encouraged at all levels in order to build the capacity of vulnerable groups.

m) Develop a relocation guideline and assessment tools, build capacity and implement relocation of communities as an adaptation action where and when necessary.

n) Strengthen capacity of Solomon Islands Meteorological Services and National Disaster Management Office to provide appropriate field instrumentation and early warning systems with special focus on regions in the country more vulnerable to extreme events.

o) Promote and implement community based programs and actions within a cooperative framework to strengthen social capital, skills and resilience as an adaptation strategy.

8.4 MITIGATION

High levels of GHG emitted into the atmosphere mainly by developed countries and some large developing countries is the main cause of global warming and climate change. During international negotiations over the past years Solomon Islands has joined other LDCs, SIDS and the AOSIS to urge developed (Annex 1) countries to commit to establishing GHG emission targets, limit CO2 concentrations in the atmosphere to 350ppm from the current 380ppm and to limit atmospheric temperature rise to 1.5 degrees. The Solomon Islands National Communications to the UNFCCC has established that the energy, forestry (logging) and waste management sectors produce the most GHG emissions in the country. According to many scientists it is possible to decrease the level to 350ppm. This can be achieved by not using coal as fuel, protect and plant more areas of forests, shift to a low emission agriculture practice, improve waste management to reduce emissions and increase significantly the use of renewable energy.

8.4.1 POLICY DIRECTIVE AND STRATEGIES

4) Solomon Islands government will continue to exhort Annex-1 countries to reduce their GHG emissions. On its part the government is committed to carrying out its own inventory of emissions and pursue nationally appropriate mitigation actions (NAMAs) to reduce its own GHG emissions through use of renewable energy and other mitigation technologies that brings benefits to the country's economy, environment and improves the livelihoods of its people. To achieve this the government shall:

a) Build capacity of Government, private sector and other relevant institutions to undertake regular inventory of GHG emissions and sinks (removals), monitor emissions and removals, establish the national carbon balance and prioritize emission reduction strategies and actions.

b) Develop a Nationally Appropriate Mitigation Actions (NAMAs) strategy at National, Provincial and Honiara City Council and other urban areas that can contribute to the achievement of a Low Carbon Development. The NAMA will include clear measurable targets and include the following sectors and themes:

i) Renewable energy and energy efficiency
ii) Reducing emissions from the forest sector through sustainable forest management, CDM projects, REDD+ projects and voluntary carbon trading mechanisms.
ii) Low emission agriculture including promotion of organic and low tillage agriculture
iii) Reducing emissions from the waste sector

c) Strengthen capacity of Government, private sector and other relevant institutions for the implementation of the national Renewable Energy Policy Framework, and develop and implement renewable energy strategies for Honiara city and Provinces, with measurable targets.

d) Strengthen capacity of the Climate Change lead agency as the Designated National Authority for the Clean Development Mechanism (CDM) and regulatory body for carbon trade, to raise awareness about CDM and its benefits to the country and build capacity of national stakeholders to design and implement CDM projects.

e) Establish and strengthen governance and capacity for carbon trade through CDM, REDD+ and Voluntary Carbon Trading including establishment of carbon trading legislation.

f) Ensure resource owners maximize benefits from carbon trading arrangements by immediately raising awareness on carbon trade in the forest sector and establish procedures for assessing investors and carbon trading arrangements between investors and communities as an interim measure, prior to the enactment of carbon trading legislation and regulatory framework.

g) Strengthen capacity of Ministry of Forest and Research to support forest resource owners implement sustainable forest management and forest carbon assessments for effective monitoring, reporting and verification under carbon trading regimes.

Strengthen capacity of Ministry of Mines, Energy and Rural Eclectrification and Ministry of Agriculture and Livestock Development to support resource owners implement carbon assessments and carbon trading through agriculture mitigation and renewable energy programs.

h) Integrate gender analysis and gender considerations in planning and implementation of mitigation actions.

8.5 RESEARCH AND SYSTEMATIC OBSERVATION

Systematic observation refers to having a systematic approach to measuring and analysing changes in weather, climate, water cycles, biological systems and ocean systems. The Solomon Islands Government needs to strengthen the capacity of national agencies and partners to systematically observe changes in weather, hydrological and ocean systems over time and to use information and technology provided by developed countries to plan risk reduction and adaptation actions.

Science and social science can provide tools for understanding climate change and how it can affect natural systems and ultimately societies and economies. The Intergovernmental Panel on Climate Change is clear and united in its determination that the change in the earth's atmosphere due to increasing emissions of green house gases caused by human activities is causing global warming and disruptions to the earth's natural systems. This is affecting ecosystems, biodiversity and human life. Science and traditional knowledge have an important role in raising society's understanding of climate change.

Worldwide systematic observation of the climate system is a key prerequisite for advancing scientific knowledge on climate change. The UNFCCC calls on Parties to promote and cooperate in systematic observation of the climate system, including through support to existing international programmes and networks. The Solomon Islands Government has been cooperating in the Global Climate Observing System (GCOS), programs of the World Meteorological Organization (WMO) and other agencies' participating in WMO's climate agenda.

8.5.1 POLICY DIRECTIVE AND STRATEGIES

5) The government shall work together with national stakeholders and development partners to ensure that there is a better understanding of climate change at all levels and sections of society for the effective planning and implementation of appropriate climate change adaptation and mitigation actions. To ensure this is achieved the government shall:-

a) Strengthen the capacity of national meteorological, hydrological, oceanographic services and their inter-relationships. Strengthen national institutions to undertake climate change research and systematic observation and provide up to date information to the public.

b) Strengthen capacity of government, NGOs and institutions to undertake research into climate change issues including monitoring and continued assessments for floods, droughts and other extreme weather events.

c) Review national research legislation, regulations and administrative mechanisms governing the undertaking of research thereby ensuring research on climate change meets established selection criteria, and is relevant to the Solomon Islands.

d) Promote and support the documentation and use of indigenous knowledge and scientific investigations and encourage their application in enhancing the resilience of people and ecosystems to climate variability and climate change.

e) Encourage and create an enabling environment for the private sector to participate in advancing climate change information gathering, distribution and application in the Solomon Islands including the hosting of forums and technical workshops.

f) Empower rural communities, schools and rural-based institutions through participatory training to acquire skills to conduct simple and appropriate methods of collecting and managing localised climate data and information.

g) Strengthen capacity of government agencies (e.g. MAL, SICHE), NGOs, and private sector (e.g. food industry) to undertake research, with appropriate infrastructure, into approaches that underpin key climate change issues that adversely impact on food security and ecosystem services .

h) Establish infrastructure to support climate change research including; Rainfall run-off relationship, Physiographic and intensity trends, Carbon assessments Flood risk trends, Soil analysis, Coastal erosion and sea level rise, Upward migration of bio-zones and ecological refugia, Preservation of genetic diversity, Coral bleaching and aquatic ecosystem stability

i) Develop spatial information systems for vegetation mapping at the national level

8.6 TECHNOLOGY TRANSFER

In the context of climate change, "technology transfer" refers to how technologies that reduce green house gas emissions and aid climate change adaptation efforts are developed and shared across and within borders. Least developed countries such as the Solomon Islands will need more than finance to address climate change. The country will need new technology for mitigation (emission reductions) such as wind power, and new technologies for adaptation, such as flood control techniques and drought resistant varieties of food crops. Because technology transfer will facilitate global emissions reductions and adaptation it is considered key to reaching a global agreement.

8.6.1 POLICY DIRECTIVE AND STRATEGIES

6) The government recognizes the importance of technology transfer to enhance the country's capacity to carry out adaptation and mitigation actions. Technology transferred for use in Solomon Islands should be proven and adaptable, environmentally friendly, appropriate to user, culturally friendly, and can be managed on a sustainable basis. To this end the government shall ensure that Solomon Islands is effectively making use of and benefiting from technology transfer by:

a) Assess, evaluate and/or review appropriate technology needs and identify strategies to promote and use available technologies to support adaptation, disaster risk reduction and mitigation

b) Support capacity development of appropriate agencies, institutions and the private sector by establishing a mechanism to assess the quality of introduced technology to ensure they do not impact negatively in the short and long term on the environment, people and economy.

c) Supporting the capacity of national institutions and the private sector to undertake research in technology development

d) Establish and provide economic incentives to the private sector to promote use of technologies that address climate change.

8.7 EDUCATION, AWARENESS AND CAPACITY BUILDING

Education, awareness and capacity building are essential components of minimizing risks and vulnerabilities and adapting to climate change. Capacity building actions can take place at the systemic (enabling environment), institutional and individual levels and should have the ownership of target beneficiaries to ensure effective implementation of adaptation and mitigation actions.

8.7.1 POLICY DIRECTIVE AND STRATEGIES

7) The government shall work together with stakeholders and development partners to strengthen the capacity of national, provincial and community organizations and human resources for the effective planning and implementation of appropriate climate change adaptation, disaster risk reduction and mitigation actions. Accordingly, the government shall:

a) Support agencies and partners to develop and implement climate change communication strategies to ensure that clear messages about climate change are produced and disseminated.

b) Integrate climate change into the national primary, secondary and tertiary as well as non-formal curricula.

c) Assess capacity needs from time to time and identify and prioritize human resources development needs and train specialized experts through targeted scholarships and training activities.

d) Design and deliver training packages aimed at raising people's understanding of climate change and enhance knowledge and skills to plan and implement adaptation, disaster risk reduction and mitigation actions.

e) Strengthen data and information management systems and protocols to enable effective dissemination and sharing of information.

8.8 FINANCE AND RESOURCE MOBILIZATION

It has been predicted that LDC's such as Solomon Islands will be amongst the most vulnerable countries to the impacts of climate change and that the costs of addressing climate change may be as high as 5% of GDP (Stern Report date?). Efforts to begin addressing climate change is already impacting on the limited capacity of the Solomon Islands government and partners, placing extra load on limited human resources and creating additional cost burdens. The government will not be able to deploy more resources to provinces and rural locations given the very limited growth, if any, in allocation to government ministries and subventions to the provincial governments.

Solomon Islands has joined other LDC and developing countries in calling for more financial support from developed countries for adaptation programs and projects. As the financing mechanism of the UNFCCC, the Global Environment Facility (GEF) has been providing a range of grant funding modalities to Solomon Islands over the past years, while to date a number of donors and regional organizations including the UNDP, ADB, EU, AusAID, SPREP and SPC have also begun supporting climate change projects in the country through various sectors.

8.8.1 POLICY DIRECTIVE AND STRATEGIES

8) The government will ensure that technical assistance and financial resources to support climate change programs and projects in the country is mobilized, managed and accounted for in an efficient, participatory, and transparent manner. To achieve this, the government shall:-

a) Make provision in its national and provincial development and recurrent budget to implement corporate plans, programs and projects that address climate change.

b) Strengthen coordination with donor partners to effectively mobilize financial resources to support implementation of the NDS, this climate change policy and other related national and provincial level through the MDPAC Donors Aid Coordination mechanisms.

c) Strengthen coordination and consultation between government Ministries and Provincial governments to ensure that climate change funding via the government or NGOs support the implementation of this policy and includes provincial government, Honiara City Council and community representatives in the project cycle stages, and also ensuring that the requirements of the MDPAC are met.

d) Strengthen capacity within MECDM, with the support of MDPAC, to coordinate and monitor performance of climate change programmes and projects and their effectiveness in supporting the implementation and achievement of national and provincial adaptation, disaster risk reduction and mitigation strategies.

e) Build capacity and develop a long term programmatic approach for implementing adaptation, disaster risk reduction and mitigation strategies.

f) Provide training and build capacity in climate change funding and project cycle managementto all stakeholders , in line with government and donor requirements.

g) Establish transparent process for financial and technical assistance resources allocation and utilization

8.9 PARTNERSHIP AND COOPERATION

Partnership and cooperation is essential for addressing the cross-cutting and cross-border impacts of climate change. The UNFCCC, Hyogo Framework for Action on Disaster Risk Management and other international and regional agreements place emphasis on cooperation and have developed a range of tools for sharing technology, experiences and lessons learnt. Partnerships and cooperation can be in various forms including through; regional projects, joint research activities, capacity building programs, joint observation programs etc.

8.9.1 POLICY DIRECTIVE AND STRATEGIES

9) The government shall develop and maintain strong partnerships and work cooperatively with its national partners, stakeholders, regional and international organizations and institutions and development partners to address climate change. This will be achieved by:-

a) Strengthening capacity and actively participating in international and regional negotiations.

b) Building and maintaining partnerships between national and provincial organizations and establish network of climate change learning communities.

c) Building and maintaining partnerships with regional and international inter-governmental, scientific and research organizations.

d) Disseminating information on partnership opportunities to the public.

e) Promote and implement partnership arrangements between Melanesian countries under the Melanesian Spearhead Group (MSG) arrangement in the planning and implementation of sustainable forest management, forest protected areas and watersheds and REDD+ as an adaptation and mitigation strategy.

f) Promote and implement partnership arrangements with Pacific Island Forum Member Countries to address climate change within the framework of the Pacific Plan, Pacific Islands Framework for Action on Climate Change, Pacific Disaster Risk Management and other regional sector based strategies and Action Plans.

g) Convening a National Climate Change Roundtable every three years to bring partners together to monitor progress in addressing climate change and disaster risk reduction. The Climate Change Roundtable will coincide with the three year cycle of the State of Environment Reporting process.

8.10 MONITORING AND EVALUATION

It is essential that the implementation of the climate change policy is monitored and evaluated to gauge progress as well as to make necessary adjustments in line with national needs, and global climate change and disaster risk management agendas that Solomon Islands will be committed to. Monitoring shall take place at various levels and across all development sectors.

Monitoring of this Climate Change Policy will be done annually at various levels:

i) Political level by the Parliamentary Standing Committee
ii) Policy level by the National Climate Change Council and Provincial Climate Change Coordination bodies.
iii) Programme and project level by the national lead agency for climate change and the Climate Change Working Group.

8.10.1 POLICY DIRECTIVE AND STRATEGIES

10) The government shall establish a mechanism to monitor the implementation of this climate change policy. To ensure this is achieved, the government shall:-

a) Require all Government agencies, NGOs, churches, institutions and private sector organizations and communities implementing climate change related programs and projects are required to register with the national lead agency for climate change and provide annual reports for purposes of monitoring.

b) Strengthen the capacity of the lead agency for climate change to undertake the following monitoring and evaluation activities:

- Establish a database of all actors involved in climate change programs and projects and disseminate information on climate change programs and projects;
- Produce and disseminate an annual report on progress in addressing climate change;
- Communicate regularly with partners to obtain information on progress of implementation of the climate change policy and strategies; and
- Develop the National Communications to the UNFCCC.

c) Support national and provincial government agencies, and civil society actors, strengthen capacity for monitoring the implementation of this policy through existing mechanisms such as sectoral committees, and national councils.

d) Evaluate the implementation of this policy after every five years to gauge the effectiveness and efficiency of implementation of strategies against the policy goal, objectives, directives and strategies.

e) Building on the reporting process of projects, assessments and surveys develop, and build capacity for a community feedback mechanism where experiences and lessons learnt at the community level feeds back into the policy implementation process.

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10.0 ANNEXES

ANNEX 1: GLOSSARY OF TERMS

Abatement: Refers to reducing the degree or intensity of greenhouse-gas emissions.

Adaptation: Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Adaptation Fund: The Adaptation Fund was established to finance concrete adaptation projects and programmes in developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change. The Adaptation Fund is financed from the share of proceeds on the clean development mechanism project activities and other sources of funding.

Afforestation: Planting of new forests on lands that historically have not contained forests.

Anthropogenic greenhouse emissions: Greenhouse-gas emissions resulting from human activities.

Biomass fuels or biofuels: A fuel produced from dry organic matter or combustible oils produced by plants. These fuels are considered renewable as long as the vegetation producing them is maintained or replanted, such as firewood, alcohol fermented from sugar, and combustible oils extracted from soy beans. Their use in place of fossil fuels cuts greenhouse gas emissions because the plants that are the fuel sources capture carbon dioxide from the atmosphere.

Capacity building: In the context of climate change, the process of developing the technical skills and institutional capability in developing countries and economies in transition to enable them to address effectively the causes and results of climate change.

Carbon market: A popular (but misleading) term for a trading system through which countries may buy or sell units of greenhouse-gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among member states of the European Union. The term comes from the fact that carbon dioxide is the predominant greenhouse gas, and other gases are measured in units called "carbon-dioxide equivalents."

Carbon sequestration: The process of removing carbon from the atmosphere and depositing it in a reservoir.

Clean Development Mechanism (CDM): A mechanism under the Kyoto Protocol through which developed countries may finance greenhouse-gas emission reduction or removal projects in developing countries, and receive credits for doing so which they may apply towards meeting mandatory limits on their own emissions.

Deforestation: Conversion of forest to non-forest.

Designated National Authority (DNA): An office, ministry, or other official entity appointed by a Party to the Kyoto Protocol to review and give national approval to projects proposed under the Clean Development Mechanism.

Emissions trading: One of the three Kyoto mechanisms, by which an Annex I Party may transfer Kyoto Protocol units to, or acquire units from, another Annex I Party. An Annex I Party must meet specific eligibility requirements to participate in emissions trading.

Green Climate Fund: Parties to the UN Convention on Climate Change, at its sixteenth Conference of the Parties (COP16), in decision 1/CP.16 established a Green Climate Fund (GCF) as an operating entity of the financial mechanism of the Convention under Article 11. The GCF will support projects, programmes, policies and other activities in developing country Parties. The Fund will be governed by the GCF Board.

Greenhouse gases (GHGs): The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO2), methane (CH4) and nitrous oxide (N20). Less prevalent --but very powerful -- greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Intergovernmental Panel on Climate Change (IPCC): Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys world-wide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the Convention's subsidiary bodies. The IPCC is independent of the Convention.

Kyoto Protocol: An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of greenhouse-gas emissions by industrialized countries.

Land use, land-use change, and forestry (LULUCF): A greenhouse gas inventory sector that covers emissions and removals of greenhouse gases resulting from direct human-induced land use, land-use change and forestry activities.

Mitigation: In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.

National adaptation programmes of action (NAPAs): Documents prepared by least developed countries (LDCs) identifying urgent and immediate needs for adapting to climate change.

National communication: A document submitted in accordance with the Convention (and the Protocol) by which a Party informs other Parties of activities undertaken to address climate change. Most developed countries have now submitted their fifth national communications;

most developing countries have completed their first national communication and are in the process of preparing their second.

"No-regrets options:" Technology for reducing greenhouse-gas emissions whose other benefits (in terms of efficiency or reduced energy costs) are so extensive that the investment is worth it for those reasons alone. For example, combined-cycle gas turbines -- in which the heat from the burning fuel drives steam turbines while the thermal expansion of the exhaust gases drives gas turbines -- may boost the efficiency of electricity generating plants by 70 per cent.

Pacific Plan: The Pacific Plan was endorsed by Leaders at the Pacific Islands Forum meeting in October 2005. It is a 'living' document ensuring flexibility so that the Vision of the Leaders and the goal of regional integration extend far into the future. This revised version of the Pacific Plan follows decisions taken by Leaders at the Forum meeting in October 2007 where they welcomed the considerable progress made in implementing the Pacific Plan, noted the key challenges that need to be overcome in order for the Plan to continue to be effectively implemented, and agreed on a number of key commitments in order to move the Plan forward. The Goal of the Pacific Plan is to enhance and stimulate economic growth, sustainable development, good governance and security for Pacific countries through regionalism.

REDD: Reducing Emissions from Deforestation and Forest Degradation. The IPCC (2007) estimated emissions from deforestation in the 1990s to be at 5.8 GtCO2/year. It also noted that reducing and/or preventing deforestation and preventing the release of carbon emissions into the atmosphere is the mitigation option with the largest and most immediate carbon stock impact in the short term per hectare and per year globally.

Reforestation: Replanting of forests on lands that have previously contained forests but that have been converted to some other use.

Research and systematic observation: An obligation of Parties to the Climate Change Convention; they are called upon to promote and cooperate in research and systematic observation of the climate system, and called upon to aid developing countries to do so.

Sink: Any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere. Forests and other vegetation are considered sinks because they remove carbon dioxide through photosynthesis.

Technology transfer: A broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders

Vulnerability: The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.

Glossary obtained from the UNFCCC
http://unfccc.int/essential_background/glossary/items/3666.php

ANNEX 2: OVERVIEW OF SOLOMON ISLANDS NATIONAL CONTEXT

2.1 Geography and environment

Solomon Islands is located in the Pacific east of Papua New Guinea and comprises a scattered archipelago of 994 islands combining mountainous islands, as well as low lying coral atolls within a tuna-rich and potentially mineral-rich maritime Economic Exclusive Zone (EEZ) of 1.34 million square kilometres. The land area of 28,000 square kilometres with 4,023 kilometres of coastline is the second largest in the Pacific after Papua New Guinea. The highest point in the country, Mt Makarakomburu is 2447m above sea level and is the highest peak in the insular Pacific. The six main islands of Choiseul, New Georgia, Santa Isabel, Malaita, Guadacanal and Makira are characterized by a rugged and mountainous landscape of volcanic origin. Between and beyond the bigger islands are hundreds of smaller volcanic islands and low lying coral atolls. All the mountainous islands of volcanic origin are forested with an abundance of rivers and streams and many of the coastal areas are surrounded by fringing reefs and lagoons. The is located within the earthquake belt or 'Ring of Fire' and is extremely vulnerable to the effects and impacts of earthquakes and tsunamis.

The country's biodiversity is of global significance with its reefs containing one if the highest diversities of coral and fish found anywhere in the world placing the country in the coral triangle of the worlds most important marine biodiversity area. The country's terrestrial biodiversity has been described as "globally outstanding" with its forests containing 4500 species of plants and recognized as one of the world's great centres of plant diversity. In marine biodiversity a rapid marine assessment carried out by TNC in 2004 has recorded the second highest diversity if coral species in the world after Raja Ampat in Indonesia. Solomon Islands also boasts the biggest saltwater lagoon in the world (Marovo lagoon), the biggest raised coral island and fresh water lake in the insular Pacific (Rennell island) and the biggest uninhabited island in the Pacific (Tetepare island).

2.2 Government and Governance

Solomon Islands attained political independence from Great Britain in 1978, and has a parliamentary democracy with a fifty member legislature elected every four years and an Executive led by the Prime Minister. The Governor General represents the Queen of England as the Head of State. The country has yet to achieve a level of political maturity with formation of stable governments and there continues to be a high turnover of governments.

The government is two-tiered comprising the national and nine provincial governments including the Honiara City Council that oversees the national capital. The reach of government services beyond the city has been relatively weak and in some places non-existent due to its limited capacity and inefficiencies. This, together with the call for greater political and economic autonomy, has given rise to a push by provincial government leaders for greater decentralization and has led to recent moves by the national government to begin developing a new Federal Constitution. If finally approved by the national parliament the new Federal Constitution will significantly alter the method and cost of governing and service delivery in the country; hopefully for the better.

Governance at various levels and in various sectors has been described in a number of national reports as being poor with corruption becoming a growing problem. During 2011 Solomon Islands ranked 120 out of 182 globally (22 out of 35 in the Pacific) in terms of perceptions of corruption, weak transparency and poor accountability.

A report by the International Waters Project on the state of integrated coastal zone governance in Solomon Islands by Professor Marcus Lane of the University of Adelaide (2005), highlighted the very weak state of governance of natural resource management in the country. Much of the descriptions still hold today and include, *inter-alia*; an institutional disconnect between the regulatory ambitions of national government and customary sovereignty of landowners, the limited 'reach' of national government in rural areas, the culturally and geographically diverse character of the region, difficulties in making government accessible and accountable to its citizens, the absence of effective regional (provincial) and central government's limited ability to *regulate* the natural resource decisions of customary landowners. Furthermore, the capacity of the village population to make coherent and considered decisions about the natural resources that they control is limited due to their inability to access advice (legal, financial, ecological) when making natural resource decisions coupled with the limited flow of information and other assistance from government to community. If not addressed effectively the state of poor governance of coastal zones in the country will seriously impede climate change adaptation and mitigation efforts.

2.3 Socio-economic context and projections

The national population of 515,870 (Census, 2009) has an annual growth rate of 2.3% and growth rate in rural to urban migration is estimated at 4%. About 30% of the total population are below the age of fourteen. Solomon Islanders make up a diverse population of Melanesians (90%), Polynesians (5%) and Micronesians (5%). Ninety five different languages are spoken and about 80% of the population live in rural areas with around 75% of the total population living within 500 meters of mean sea level.

The country's Human Development Index (HDI), at 0.51, is one of the lowest in the Pacific and ranking 142 out of 177 countries. On the achievement of Millennium Development Goals (MDGs), a range of social indicators show that the country is likely to meet Goal 2 (Achieve universal primary education) and Goal 5 (Improve maternal health). Females still have less access than males to secondary and tertiary education while women have poor access to health and family planning services in the rural areas. Levels of violence against women is one of the highest in the world with two out of every three women interviewed in a national survey recorded as having experienced various forms of violence inflicted by their male relatives and/or partners.

A more recent ADB report on the economy of Solomon Islands (ADB, 2010) attributes much of the improvements in the HDI to the significant overseas financial and technical assistance, with aid levels increasing from 22% of GDP in 1990 to 66% of GDP in 2005. An analysis of household income and expenditure data collected in 2005/06 shows that situations of hardship and poverty is rising with 11% of the population experiencing difficulties in acquiring basic needs. By 2008 GDP per capita was the second lowest in the Pacific as USD 1,180 (ADB Outlook, 2010).

According to a recent report by the Asian Development Bank on the economy of the Solomon Islands (ADB, 2010), the well being of the bulk of the country's population hardly improved since the country attained political independence in 1978. Real per capita income has declined as a result of historic population growth. Solomon Islands now has the second lowest average per capita income in the Pacific region (ADB, 2010).

Much of the root causes of the economic decline can be attributed to poor management and governance of natural resources, weak political leadership and an ill-equipped public service. This deteriorating situation worsened during the period of 1998-2002 ethnic unrest when militants from two warring factions controlled most of the capital city of Honiara and the island of Guadacanal. About 20,000 people were displaced and up to 200 killed (UNDP 2004). The break down in law and order had a devastating effect on the economy resulting in GDP contracting by 45%. On the request of the national government a Pacific Regional Assistance Mission (RAMSI) was initiated, and led by the Australia to address law and order, facilitate reconciliation and strengthen the machinery of the government.

A recent Discussion Note by the World Bank (Solomon Islands Growth Prospects, October 2010), recommends that it will be difficult for Solomon Islands to make the transition from an agriculture based economy to an industrial and services based economy as history has shown with most countries. According to the World Bank, this transition will be difficult to achieve due to the geographic scatter of islands and the weak governance and regulatory mechanisms currently in practice. It is predicted that future economic growth of Solomon Islands will be derived from four main areas including;

- Improved productivity of the smallholder agriculture sector where more than 80% of the population can participate in.
- Well managed and regulated natural resource industries that have positive and sustained multiplier effects
- An internationally mobile workforce
- Strengthening international partnerships to mobilize aid and enhance public administration, political accountability and stimulate private sector growth

2.4 Energy demand and national GHG emissions

Only about 20% of the Solomon Islands population has access to electricity. Almost all electricity generation is confined to Honiara and the provincial centres which are basically based on imported diesel fuel and supplied and regulated by Solomon Islands only power utility the Solomon Islands Electricity Authority (SIEA). Outside of the urban centres only about 5% of the rural population has access to electricity through a small number of off-grid and individual household systems. In addition, in the rural areas where almost 85% of Solomon Islands population is, the use of biomass (fuel wood) for cooking and other activities is common.

Preliminary findings on the GHG inventory assessments undertaken in the SNC during 2011 shows that emissions from managed forests and the energy sector together make up more than 95% of the key source categories of emissions in the Solomon Islands in 2007, and totalling 5,526 Gg CO_2 eq. Next in the rankings are emissions from solid waste disposal sites and waste water and these are expected to increase in the coming years. Emissions from cropping land are

yet to be assessed and it is anticipated that this sub-category will also be a significant contributor to the rising emissions in Solomon Islands.

Solomon Islands has significant potential to increase utilization of renewable energy and reduce GHG emissions. The recent draft SNC to the UNFCCC has identified a range of renewable energy opportunities and estimated the amount of electricity generation and potential carbon dioxide levels to be reduced of renewable energy is to decrease the country's reliance on fossil fuels.

Table 2.4A Potential energy sources, amounts of electricity generated and carbon dioxide off-sets

Renewable Energy	**Electricity generation (MW)**	**CO2 off-sets in tonnes of CO2 equivalent**
Hydro	49	343
Solar	4	32
Biomass gasification	4	32
Biofuel	1	8
Wind	7	48
Total	**65**	**463**

A Pacific Regional Energy Assessment in 2004 reported that; ''in principle, the Solomon Islands could reduce CO_2 equivalent GHG emissions by 122 Gg per year within a decade and about 85% of current emissions or 39% of projected emissions by 2011/12. About 91% of GHG reductions are from renewable energy and 9% from energy efficiency measures. This indicative estimate is based on proven technologies and known resources but does not consider economic, financial, political, social, technical, environmental or other practical constraints". Potential for geothermal energy exists in parts of the country but the sources are located far from demand centres.

Minimizing the loss of carbon and carbon dioxide due to land use change and forestry activities is an urgent and crucial sustainable development and climate change issue for Solomon Islands. Annual volumes of logs removed from the forests for export continues to be well above the annual allowable sustainable cut of 300,00 cubic meters and is the biggest threat to the decline in terrestrial biodiversity and ecosystem services. Land clearing for subsistence agriculture is the main form of deforestation and its extent is yet to be adequately quantified. Subsistence agriculture is the foundation of food security in the Solomon Islands, however, the rapidly growing population will require more intensive sustainable farming practices to be adopted.

There is potential to minimize emissions from the waste sector, with methane capture and use, however, this may be a long way off to being realized given the poor state of waste management in the capital city and provincial townships.

ANNEX 3: SOLOMON ISLANDS PROGRESS IN ADDRESSING CLIMATE CHANGE – CHRONOLOGY OF EVENTS

1994	Ratification of the United Nations Framework Convention on Climate Change (UNFCCC). Climate change is overseen by the Solomon Islands Meteorological Services.
1998	Signing of the Kyoto Protocol.
2000	Participation in the first major regional climate change project in the Pacific, the Pacific Islands Climate Change Adaptation Project (PICCAP), executed by SPREP.
2004	Submission of the Initial National Communication to the UNFCCC.
2005	Endorsement of the Pacific Islands Framework for Action on Climate Change: 2006 – 2015 (PIFACC).
2006	Endorsement of the Pacific Islands Framework for Action on Disaster Risk Reduction and Disaster Risk Management (2005-2015).
2007	Participation in the GEF-funded National Capacity Self Assessment project enabling the assessment of national capacity to address climate change.
2008	Establishment of the Ministry of Environment, Climate Change and Meteorology (MECM) and creation of the Climate Change Division.
	Development of the National Adaptation Program of Action (NAPA).
2009	Development of the National Disaster Risk Management Plan incorporating disaster risk reduction and including climate change.
2010	Transfer of the National Disaster Management Office from the Ministry of Home Affairs to the MECM, resulting in the name change of the Ministry to become the Ministry of Environment, Climate Change, Disaster Management and Meteorology.
2011	Cabinet endorsement of the Designated National Authority for the Clean Development Mechanism under the Kyoto Protocol.
	Funding secured from the Kyoto Protocol's Global Adaptation Fund to enhance capacity to address climate change impacts on agriculture and food security.
	Completion of the draft Second National Communication to the UNFCCC.
2012 -	Completion of the draft Solomon Islands National Climate Change Policy.

ANNEX 4: TERMS OF REFERENCE – NATIONAL CLIMATE CHANGE COUNCIL

Solomon Islands Climate Change Council

Terms of Reference

Background

Climate change is one of the most serious threats to sustainable development in Solomon Islands. It is only an environmental problem, but is also likely to have adverse consequences for the country's food security, economic activity, human health, natural resources and physical infrastructure. Different levels of government, businesses, communities and individuals will need to work together to develop a response if Solomon islands is to minimize the causes and impacts of climate change on the people, economy and environment of Solomon Islands.

Given the cross-cutting nature of climate change and the limited resources available to address the incremental costs of climate change action in Solomon Islands, it is important that there is good communication and coordination of climate change policy, strategy, programs and activities.

Role and functions:

The National Climate Change Council (NCCC) will be responsible for overseeing implementation of the climate change policy, strategies and projects. The Council shall:

- Monitor and evaluate implementation of the climate change policy.
- Review and assess the information and data for the development of national climate change policies and strategies.
- Monitor, review and provide advice on revisions and updates to national adaptation strategies.
- Coordinate Solomon Islands contribution to international climate change negotiations ensuring consistency, relevance and real benefits to Solomon Islands.
- Assist the government lead agency for climate change in international climate change negotiations.
- Promote and support integration of climate change adaptation and disaster risk reduction measures pertaining to climate related hazards and risks and contribute to the Hazards and Risk Reduction Committees of the National Disaster Council within the National Disaster Risk Management Plan coordination framework.
- Provide advice and support the national climate change lead agency with coordination and planning for resource mobilization to support implementation of climate change mitigation and adaptation programs in Solomon Islands.
- Review and endorse project proposals intended to mobilize funds to implement the national climate change policy and strategies.
- Review and endorse research work in the area of climate change to be carried out in Solomon Islands.

- Facilitate and participate in the convening of Solomon Islands Government and donor roundtables intended to support climate change related work in Solomon Islands.
- Oversee development of national climate change and carbon trading legislation.
- Promote sharing of information on current programs, policies and research related to climate change in Solomon Islands.
- Promote and advise on mainstreaming of climate change issues into national policies and programs.
- Ensure that in-country climate change programs and actions are consistent with national development strategies.
- Receive and advise on reports from the Climate Change Thematic Working Groups and from projects.
- Receive and advise on annual climate change progress reports prior to dissemination.
- Report progress to Cabinet through the national lead agency for climate change.

Membership

- Permanent Secretaries of all Government Ministries
- Representative from the Office of the Prime Minister
- Attorney Generals Chambers
- Central Bank
- SICHE
- Representative from Private Sector
- Representative from NGOs
- Representative from SICA
- Representative from Community based organizations

Chairman

- Permanent Secretary of the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM).

Secretariat

- To be provided by MECDM

Meeting frequency and quorum

- The National Climate Change Council shall meet at least twice a year, or as and when the need arises.
- A quorum is formed when at least 50% of all members are present.

ANNEX 5: NATIONAL CLIMATE CHANGE WORKING GROUP: MEMBERSHIP, SCOPE AND ROLE.

National Climate Change Working Group	
Membership	MECDM, MDPAC, MFT, Central Bank, Private Sector, NGOs, CBOs, SPC, FFA, Development Partners and others as invited.
Scope and role	Provide advice and coordination support to the lead agency and National Climate Change Council in; • Policy dialogue including implementation and emerging global and regional climate change agendas and strategies. • Assess and provide advice on progress with implementation of the Climate Change Policy. • Promote networking amongst partners and share best practice and lessons learnt in addressing climate change • Platform for updating partners on policy priorities • Climate change strategy development and programmatic approach • Provide guidance and coordination of technical and financial resource mobilization • Monitoring and reviewing implementation of the policy

Chair: The National Climate Change Working Group is co-chaired by the Permanent Secretary of Ministry of Development Planning and Aid Coordination (MDPAC) and the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM)

Meetings The Thematic Working Group will meet quarterly or as and when necessary.

Secretariat The MECDM will provide the secretariat for the Thematic Working Groups

Quorum: A quorum of at least 5 individuals is required

Reporting: Where necessary the Thematic Working Groups shall report to the National Climate Change Country Team.

ANNEX 6: NATIONAL CLIMATE CHANGE THEMATIC WORKING GROUPS: MEMBERSHIP, SCOPE AND ROLE.

Vulnerability, disaster risk reduction and adaptation	
Membership	MECDM, MFR, MAL, MF, MHMS, MWYS, M4 NGO representatives, SICA, 2 Private Sector representatives, SPC, FFA, 4 CBO representatives,
Scope and role	Provide advice and coordination support to the lead agency and National Climate Change Working Group in; • Implementation and review of NAPA • Development, implementation and review of NAP and JNAP • Development and review of V&A and DRR tools and requirements • Make recommendations on resource allocation • Partnership and collaboration opportunities • Integration of V&A, DRR and Mitigation • National communications reporting • Prioritizing vulnerable areas and sectors • Links with Disaster Risk Reduction Committee and Hazards Committee of the National Disaster Management Strategy • Other roles as identified from time to time

Mitigation and GHG Inventory	
Membership	MECDM, MFR, MAL, MF, MWYS, 4 NGO representatives, 6 x Private Sector representatives, SPC, 4 CBO representatives, MCT,
Scope and role	Provide advice and coordination support to the lead agency and National Climate Change Working Group in; • Data, technical and financial requirements for GHG Inventory • GHG Inventory methodology and approach • Capacity building needs for GHG Inventory • Development, implementation and review of Nationally Appropriate Mitigation Actions Strategy (NAMA) • Capacity building needs and resource requirements for implementation of the NAMA Strategy • Governance framework and capacity needs for carbon trade • Monitoring, reporting and verification requirements and priorities for carbon trade. • Other roles as identified from time to time

Research, Systematic Observation and Technology Transfer	
Membership	MECDM, MFR, MAL, NGOs, Private Sector,, SPC, CBOs SICHE, USP,
Scope and role	Provide advice and coordination support to the lead agency and National Climate Change Working Group in; • Climate change research priorities and needs in the various sectors • Capacity building including technology and instrumentation requirements for research and systematic observation • Technology Needs Assessments and stock-take of technology available to address climate change • Assessment of imported technologies • Promotion and use of indigenous technologies in disaster risk reduction and adaptation

Education, awareness and capacity building	
Membership	MECDM, MEHRD, CDC, MHMS, NGOs, SICA, Private Sector, CBOs, SICHE, USP, Media
Scope and role	Provide advice and coordination support to the lead agency and National Climate Change Working Group in; • Development of climate change communication strategy and tools • Planning and implementation of capacity needs assessments • Identification of priority areas for specialized training • Design and implementation of shorts courses • Design and implementation of award training programs and courses • Non-formal education strategies and approaches.

Chair: The inaugural chairperson of each Thematic Working Group is to be recommended by the climate change lead agency. The chairperson can be rotated as the Thematic Working Groups see fit.

Meetings: The Thematic Working Groups will meet at least twice a year or as and when necessary.

Secretariat: The government lead agency for climate change will provide the secretariat for the Thematic Working Groups.

Quorum: A quorum of at least 5 individuals is required.

Reporting: Where necessary the Thematic Working Groups shall report to the National Climate Change Country Team.

ANNEX 7: NATIONAL DEVELOPMENT STRATEGY (NDS) FOCUS AREAS AND OBJECTIVES.

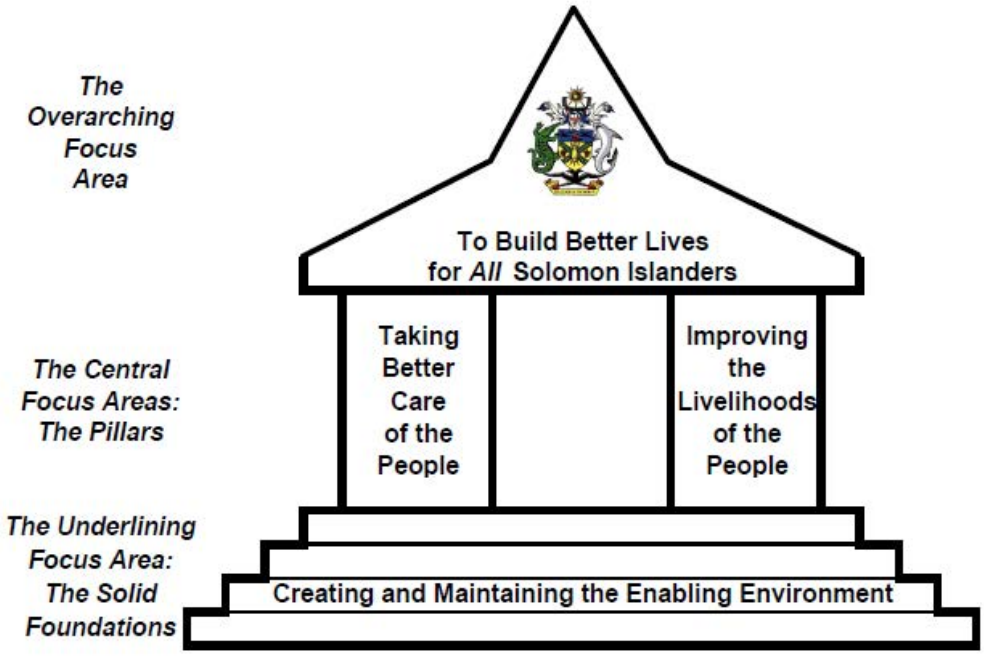

Figure 7A: Structure of the National Development Strategy

Focus Area 1: To build better lives for all Solomon Islanders

Objective 1: Alleviate poverty and improve the lives of Solomon Islanders in a peaceful and stable society

Objective 2: To support the vulnerable

Objective 3: Ensure all Solomon Islanders have access to quality health care and combat malaria, HIV, non communicable and other diseases.

Objective 4: Ensure all Solomon Islanders can access quality education and the nations manpower needs are sustainably met.

Objective 5: Increase economic growth and equitably distribute employment and income benefits.

Objective 6: Develop physical infrastructure and utilities to ensure all Solomon Islanders have access to essential services and markets.

Objective 7: Effectively respond to climate change and manage the environment and risks of natural disasters.

Objective 8: Improve governance and order at national, provincial and community levels and strengthen links at all levels.

MILDA Conference & Preparatory Meeting for Slow Food in Melanesia

Theme: "Inseparable – The Land, Food, and People of Melanesia"

10-14 March, 2014

Natapao Village, Lelepa Island, VANUATU

The Lelepa Declaration 2014

The declaration of the 3rd meeting of the Melanesian Indigenous Land Defence Alliance (MILDA), held at Natapao Village on the island of Lelepa, Vanuatu, 10-11 March 2014

In response to continued and increasing severity of threats to customary land systems posed by the land reform and other foreign development agendas of international financial institutions, aid agencies, governments and elites within our own countries, the third meeting of the Melanesian Indigenous Land Defence Alliance (MILDA) re-affirms its commitment to indigenous control of customary land systems and Melanesian development goals. We are united and organized as a region to defend the continued control of Melanesian communities over their land, sea, water, air and ancestral heritage, recognising that the threats to customary land are directed against the Melanesian Pacific as a region. We re-assert that the customary land systems are the basis of life and community in Melanesia.

MILDA is an alliance of groups and individuals with a shared vision and commitment to working together united by a common cause to protect our indigenous land extending from the surface of the ground to the centre of the earth and underneath the sea, including our ecosystems, biodiversity, intangible cultural heritage, the waters of our rivers, streams and air. Our members comprise church and traditional leaders,

fieldworkers, community members including men, women, youths, children and people with special needs, academics, regional NGOs and international supporters.

Land has and always will be of the highest value to the lives of our peoples, and so it will be for generations to come. In all Melanesian traditions, land is regarded as a non-alienable resource that cannot be parted with. The relationship which we have with our land is special and unique, and cannot be replaced by foreign value systems. The Melanesian definition of land is collective and inclusive. We are custodians of the land since time immemorial.

Land is our mother and the source of life for our people. Land secures life, fosters and strengthens relationships that sustain our society. It embodies the connections to our past, present and future and therefore sustains everything we aspire to. MILDA members, hailing from the Autonomous Region of Bougainville, Fiji, Kanaky, Papua New Guinea, Maluku, Solomon Islands, West Papua, and Vanuatu, reaffirm the sanctity of land.

We declare the following:

1. As Indigenous Peoples of Melanesia we are committed to upholding and safeguarding our Melanesian indigenous traditional and cultural heritage, customs, values and beliefs.
2. We acknowledge and support the value and use of Traditional Resource Management, Traditional Knowledge and vernacular language in the sustainable management of, and cultural links with, the environment and natural resources.
3. We oppose any form of alienation of land and sea from customary landowners, whether by outright sale, leases or acquisitions which remove landowners' capacity to effectively control; access and use their land and sea.
4. We believe that the ways in which land is used and distributed should be determined by Melanesian custom, and not by foreign systems.

5. We assert the value of our traditional economy, which promotes self-reliance amongst our people and communities, and we oppose actions and policies which promote the dependency of Melanesian peoples on others, including the State.
6. We say NO to all policies which require customary land be registered as a precondition for business or development activities, and demand that Melanesian governments and aid donors cease all pressures for customary land registration, whether voluntary or involuntary.
7. We are opposed to any form of experimental seabed resource extraction from our seas.
8. We oppose all foreign programs, bribes and other methods that take away the right to self-determination over our lands, reflective in Article 3 of the United Nations Declaration on the Rights of Indigenous Peoples, including customary land registration, foreign land grabbing, and extractive industries in Melanesia.
9. We call for a total review of the current land administration in Melanesia to eliminate corrupt land dealings and fraudulent land practices. All customary land acquired by these means should be returned to the rightful ancestral inheritors.

LAND AND TITLES (AMENDMENT) ACT 2014

(NO. 11 OF 2014)

PASSED by the National Parliament this twenty-eighth day of May 2014.

(This printed impression has been carefully compared by me with the Bill passed by Parliament and found by me to be a true copy of the Bill)

Taeasi Sanga (Mrs)
Clerk to National Parliament

ASSENTED *to in Her Majesty's name and on Her Majesty's behalf this twelfth day of June 2014.*

F. O. Kabui

Sir Frank Utu Ofagioro Kabui
Governor-General

Date of Commencement: see section 1

AN ACT TO AMEND THE LAND AND TITLES ACT (CAP.133).

ENACTED by the National Parliament of Solomon Islands.

ARRANGEMENT OF SECTIONS

LAND AND TITLES (AMENDMENT) ACT 2014

Short title and commencement

1. This Act may be cited as the Land and Titles (Amendment) Act, 2014, and shall come into force on such a date as the Minister may appoint by Notice published in the Gazette.

Amendment of section 2 of Cap.133

2. Subsection (1) of section 2 of the Land and Titles Act (herein after referred to as the "principal Act") is amended by inserting the following definitions in the appropriate alphabetical order -

"allocate" in respect of land means to –

(a) transfer, grant or lease an estate whether by public auction, tender, ballot or directly;

(b) grant a temporary occupation licence; or

(c) grant a right of way over public land, and

"allocation" has a corresponding meaning;

"Board" means the Land Board established by section 8B(1).

Amendment of Section 3

3. Section 3 of the principal Act is amended by adding the words "Board and a" before the word, "Commissioner."

Amendment of Section 4

4. Section 4 of the principal Act is amended –

(a) by deleting subsection (4) and substituting the following –

"(4) Subject to the provisions of this Act and any general or special direction of the Board the Commissioner shall, for and on behalf of the Government, have power -

(a) to hold and deal in interest in land subject to section 8(C); and

(b) to execute any instrument relating to an interest in land and such other powers as are provided for under the provisions of this Act."

(b) by deleting the word, "Minister" in subsection (5) and replacing it with the word, "Board".

Insertion of new Part IIA

5. The principal Act is amended by inserting after Part II the following new Part –

"PART IIA – ESTABLISHMENT OF THE LAND BOARD AND ITS POWERS AND FUNCTIONS

Objects of this Part

8A. The object of this Part is to establish a Land Board and to confer on it all powers and functions relating to the allocation of interest in land, the development of land and to ensure that the administration of land is carried out in a fair, transparent and equitable manner, to meet the needs and welfare of the people of Solomon Islands.

Establishment of Land Board and Power to appoint members

8B. (1) There is hereby established for the purpose of this Act a Land Board (hereinafter referred to as the "Board").

(2) The Board shall be constituted in accordance with the Second Schedule.

Powers and functions of the Board in land allocation

8C. (1) The Board has power to -

(a) allocate interest in any land in accordance with the provisions of this Act;

(b) approve any method of allocation of land and the terms and conditions to be applied;

(c) receive and determine any application for land allocation, subject to the provisions of subsection (6) of this section;

(d) consider and approve the level of rent, premium and covenants in respect of Perpetual estates and

Fixed-term estates subject to any powers conferred on the Surveyor General or any other person under any other law;

(e) in respect of land repossessed by forfeiture, voluntary surrender or any other like act, determine its availability for allocation;

(f) receive, consider and grant temporary occupation licences subject to the provisions of section 82;

(g) subject to Cabinet approval, allocate government land as compensation for customary land acquired for and on behalf of the Government and grant rights of way over public land;

(h) require the Commissioner to submit to it reports on the status of any dealing, current or otherwise, under this Act; and

(i) make rules and issue guidelines, directions and statements governing matters within its power specified in this section.

(2) Subject to the provisions of this Act the Board may in writing delegate any of the powers and functions in subsection (1) to the Commissioner.

(3) The Commissioner shall in the exercise of a delegated power or function in this Act, have regard to any rules, guidelines, directions or statements made or issued by the Board.

(4) In allocating land the Board shall –

8

(a) where it decides to allocate land by tender, public auction or by ballot, direct the Commissioner to –

(i) cause the land to be advertised by whatever mode it deems appropriate in the circumstances;

(ii) undertake any administrative action required for allocation;

(iii) ensure that any applicable requirement under any other law is complied with fully;

(iv) provide a report to the Board on the actions taken in sub - paragraphs (i) to (iii) together with recommendations; and

(v) soon after allocation, inform the applicants and the public of the result.

(b) where it decides to allocate land directly, direct the Commissioner to –

(i) carry out the acts in sub-paragraphs (a)(i), (ii) and (iii);

(ii) cause a search to confirm the capability of the selected applicant; to fulfil the obligations attached to the allocation; and

(iii) undertake any other action as it deems necessary.

(5) Unless directed by the Board any land recovered by forfeiture, resumption or voluntary surrender under this Act, shall not be allocated within a period of six months.

(6) The Commissioner shall only exercise a power or carry out any function in subsection (4) if –

(a) there is a written directive from the Board to the Commissioner; and

(b) it is satisfied taking into account all necessary considerations that the method of allocation will not have any adverse consequences.

Provincial land

8D. (1) Subject to the provisions of the Provincial Government Act 1997 or any other law applicable, any land owned by the Commissioner in a provincial land boundary is held subject to the provisions of this Act.

(2) Where a land under subsection (1) is required either by the Provincial Executive or the Commissioner to be allocated for whatever purpose, the Chairperson of the Provincial Town and Country Planning Board or the Commissioner as the case may be, shall inform the Board accordingly and the Board shall in the exercise of its powers under section 8C(1)(b) issue directives on the prescribed process of allocation to be applied.

(3) The Board may require the Provincial Town and Country Planning Board or the Commissioner under subsection (2) to make oral submissions on any specific case of allocation.

(4) Notwithstanding any powers conferred on the Provincial Government under any other law in respect of land within a provincial land boundary owned by the Commissioner, the Board may refuse to allocate land under this section if the proposed allocation –

(i) does not meet with any legal requirements under law; or

(ii) does not fall within the objectives of this Act; or

10

(iii) is determined not to be in the best interest of the public.

Annual Report

8E. (1) The Board shall provide to the Minister –

(a) by 31 March in each year, a report on the performance of the Board in relation to its functions during the year ended 31 December of the previous year; and

(b) such other reports produced in relation to the functions of the Board as may be requested by the Minister.

(2) The Report shall, inter alia, state -

(a) all land allocated during the year;

(b) the names of all applicants who applied for the allocated land;

(c) the names of successful applicants;

(d) the premiums and rentals imposed;

(e) the conditions and covenants applied; and

(f) the method of allocation by which each parcel of land was allocated.

(3) As soon as practicable after receipt of the report, the Minister shall -

(a) forward a copy to the Speaker for presentation to Parliament;

(b) make available copies for public inspection or purchase."

Repeal of section 25

6. Section 25 of the principal Act is hereby repealed.

Amendment of Section 84

7. Section 84 of the principal Act is hereby amended -

(a) in subsection (1) by deleting the word "Where" and substituting the words "Subject to subsection (1A), where"; and

(b) by inserting immediately after subsection (1) the following new subsection –

"(1A) The Commissioner shall –

(a) before making an offer under subsection (1), seek the advice of the Board; and

(b) in making the offer, follow any written directive issued by the Board."

Amendment of section 120

8. Section 120 of the principal Act is amended by adding the words "or Board" immediately after the word "Minister".

Amendment of section 132

9. Section 132 of the principal Act is amended -

(a) by deleting from subsections (1) and (2), the word "Commissioner" wherever it appears in those subsections and substituting the word "Board" in each case;

(b) by adding immediately before paragraph (a) of subsection (1) the following new paragraph;

"(a1) advertise land as available for allocation in accordance with the provisions of this Act or";

(c) by adding immediately after subsection (2), the following new subsection –

"(2A) Where there is a transfer of land in accordance with subsection (2), the sublessee holds the sublease subject to the payment of rent to the lessor."

12

(d) by deleting subsection (4) and substituting the following new subsection –

"(4) Subject to the provisions of the Act, the Board may –

(a) vary, negative or add to obligations contained or implied in any transfer or grant of an estate; and

(b) vary the rent of any fixed term estate"; and

(e) by inserting after subsection (4) the following new subsections -

"(5) A decision made by the Board under subsection (4) shall be implemented by an instrument in the prescribed form executed by the Commissioner and the owner of the estate.

(6) The Commissioner shall not except, where there are special grounds of an urgent or exceptional character, consent to a dealing referred to in subsection (3) where an obligation to develop the land has not been complied with".

Amendment of section 135

10. Section 135 of the principal Act is amended -

(a) by deleting subsection (3) and substituting the following new subsection –

"(3) From and after the commencement of this Act the Commissioner shall -

(a) subject to section 140, at intervals of not less than seven years in the case of an estate comprising town land, or fifteen years in the case of an estate comprising other land, revise under

subsection (5) the amount of rent incident to an estate; and

(b) on revision of the rent under this section, deliver to the Registrar a notification of the amount of the revised rent and the Registrar shall enter such amount in the register, and the payment of the revised rent may be enforced against the person who for the time being is the owner of the estate in like manner as if that person had been the original transferee or grantee of the estate.

(b) by inserting after subsection (3) the following new subsection -

"(3A) In respect of estates granted before the commencement of this Act, the revision of rent under subsection (3)(a) shall –

(i) for a grant yet to be revised under the principal Act, take effect from the date of the first revision; and

(ii) for a grant already revised under the principal Act, take effect from the date of the last revision."

11. Section 136 of the principal Act is amended - Amendment of section 136

(a) by deleting subsection (1) and substituting the following new subsections –

"(1) Subject to section 139, the Board shall have the right to forfeit an estate if the owner –

(a) fails to pay rent incident to the estate when it becomes due;

(b) fails to perform any obligation on his part incident to the estate;

(c) irrespective of any contrary time period referred to in the lease, fails to develop the land in accordance with the development obligation incident thereto within a period of three years from the date of transfer or grant;

(d) or any person in occupation of the land has been convicted by a court for any offence relating to the possession or sale of liquor in the premises under the Liquor Act (cap. 144) or any drugs specified as dangerous drugs under the provisions of the Dangerous Drugs Act (Cap. 98); or

(e) has permitted any person to enter or remain on the land and construct any dwelling house, whether of a permanent or temporary nature without first obtaining the consent of the Commissioner."

"(1A) Where the Board exercises the right to forfeit an estate under subsection (1), neither the owner nor any person claiming a right in the property through or under him, shall be entitled to compensation in respect of the property."; and

(b) by inserting in the proviso to subsection (3) after the words "acceptance of rent" the words "or the commencement of any development on the land in accordance with the development obligation".

Amendment of section 139

12. Subsection (2) of section 139 is amended by deleting the words "six months" that appear in paragraphs (b) and (c) of that subsection and substituting the words "one month" in each case.

13. Section 140 of the principal Act is amended – Amendment of section 140

(a) by deleting subsection (2) and substituting the following new subsections –

"(2) The Commissioner must not consent to any subdivision if –

(a) an application is not supported by evidence that the requirements of the Town and Country Planning Act (Cap. 154) have been complied with; and

(b) in respect of any application for land for an urban purpose, such land is not wholly within an area which has been designated as town land under section 135(4) or which has not been declared to be a town under the Town and Country Planning Act (Cap. 154).";

"(2A). For the purposes of subsection (2)(b), any residential, commercial or industrial use that is not wholly or primarily ancillary to agricultural use, shall be deemed to be an urban purpose.";

(b) by deleting subsection (4) and substituting the following new subsection –

"(4) Where land comprised in an estate is subdivided, the Commissioner shall determine and revise the rent (if any) in respect of each subdivision to reflect the new value of each parcel, and impose new obligations on the estates resulting from the subdivision;

(c) by inserting after subsection (4) the following new subsection –

"(4A) The owner of each subdivision shall –

16

(a) pay the revised rent; and

(b) perform any obligation, as determined by the Commissioner, in respect of that estate".; and

(d) by deleting paragraph (a) of subsection (5) and substituting the following new paragraph –

"(a) pay the moneys payable (if any) under the charge based on the rent as determined under subsection (4) and".

Amendment of section 142

14. Section 142(1) of the principal Act is amended by deleting the words "Commissioner may insert" from paragraph (ii) to the proviso and substituting the words "the Board may direct the Commissioner to insert".

Amendment of section 185

15. Section 185 of the principal Act is amended by deleting the word "Commissioner" and substituting the word "the Board".

Amendment of section 243

16. Section 243 of the principal Act is amended –

(a) in subsection (1) by deleting the words, "fifty" and substituting the words, "five thousand"; and

(b) in subsection (2) by deleting the word, "fifty" and substituting the words, "ten thousand".

Amendment of Section 245

17. Section 245 of the principal Act is amended –

(a) by deleting the word "or" that appears in paragraph (c);

(b) by deleting the comma that appears at the end of paragraph (d) and substituting instead a semi-colon and the word "or"; and

(c) by adding the following new paragraph thereafter

"(e) continues to remain on land repossessed by the Commissioner under this Act."

Amendment of section 248

18. Section 248(1) of the principal Act is amended by deleting the words "Commissioner" and "he" and substituting the words "Board" and "it" respectively.

Amendment of section 260

19. Section 260 of the principal Act is amended -

(a) in subsection (2) by inserting immediately before the word "the Commissioner" wherever it appears, the words "the Board or"; and

(b) by adding the following new subsection –

"(3) Before the Minister makes any regulations relating to any power or function given by this Act to the Board, he shall consult with the Board on the matter and take its views into account."

Savings and transitional provisions

20. Any current grant, certificate, licence, approval or registration previously issued or made under any power herein amended either by the Minister, the Commissioner or any other officer acting under a prescribed or delegated power shall be deemed to have been issued or made under this Act and shall remain valid for the period of its validity.

Insertion of new Schedule

21. The principal Act is amended –

(a) by renumbering the existing Schedule as "First schedule", and any reference in the Act or Regulations to the Schedule shall be taken to be a reference to the Schedule so renumbered; and

(b) by inserting the following new Schedule as the Second Schedule.

18

"SECOND SCHEDULE
(Section 8B)

1. Board membership

(1) The Board shall consist of the following members -

(a) five nominated members; appointed by the Minister;

(b) Permanent Secretary of the Ministry responsible for land or his nominee, ex officio;

(c) Clerk to the Honiara City Council or his nominee, ex officio;

(d) Chairman, Town and Country Planning Board or his nominee, ex officio;

(e) Permanent Secretary of the Ministry responsible for provincial governments or his nominee, ex officio;

(f) Permanent Secretary of the Ministry responsible for commerce or his nominee, ex officio;

(g) Permanent Secretary of the Ministry responsible for environment or his nominee, ex officio; and

(h) Permanent Secretary of the Ministry responsible for infrastructure development or his nominee, ex officio.

(i) The Commissioner of Lands, Registrar of Titles, Surveyor General, Valuer General and Director of Physical Planning or such other officer as may from time to time be required for any specific purpose and when required by the Board shall attend any meeting of the Board ex officio.

(2) Only members referred to in paragraph (1)(a) to (h) shall be voting members.

(3) The members in paragraph (1)(a), shall be appointed by the Minister in the following manner:-

(a) by selection of three members, one of whom must be a female nominated by the Ministry responsible for women,

youth, children and family affairs, in response to public advertisement;

(b) by selection of one member, from a list of three candidates, submitted by the Solomon Islands Chamber of Commerce; and

(c) in consultation with Cabinet, the selection of one member from the public who is considered to be in a position to contribute to the Board by reason of his or her experience and knowledge in land.

(4) A member appointed under paragraph (1)(d) shall -

(a) only attend a meeting of the Board when matters for consideration relate to its Province or City; and

(b) at such meeting only vote on such matters.

2. Term of Office

Subject to paragraph 3, a nominated member –

(a) appointed by the Minister shall be published by notice in the Gazette

(b) shall be appointed for a term not exceeding two years;

(c) is not eligible to have his appointment extended;

(d) is not eligible for re-appointment until five years have passed since the expiration of the member's appointment; and

(e) holds office on such terms and conditions as are determined by the Minister.

3. Termination of appointment of members of the Board

(1) A member of the Board, other than an ex officio member, may resign his office by writing signed by him and delivered to the Minister, and from the date of receipt by the Minister, the member shall cease to be a member of the Board.

(2) A member of the Board shall cease to hold office -

20

(a) in the case of an ex officio member, when he ceases to hold office in the capacity he was appointed;

(b) in the case of a nominated member, when his term expires, or when the Minister terminates his appointment;

(c) in the case of all members, upon election to any national, provincial or local government body.

(3) The Minister shall terminate a member other than an ex officio member if the member –

(a) becomes permanently incapable of performing his duties; or

(b) is certified by a qualified medical practitioner to be of unsound mind; or

(c) is absent, except with the written consent of the Chairman of the Board, from three consecutive meetings of the Board; or

(d) fails to disclose an interest in accordance with paragraph 9; or

(e) becomes bankrupt, or applies to take the benefit of any law for the benefit of bankrupt or insolvent debtors, compounds with his creditors or makes an assignment of his remuneration for their benefit; or

(f) is convicted of a criminal offence involving dishonesty or an offence punishable under a law by a term of imprisonment of one year or longer; or

(g) ceases to be ordinarily resident in the country.

(4) The Minister may on the advice of the Board and by written notice issue a warning to a member other than an ex officio member, on suspected misbehaviour likely to bring the Board into disrepute.

(5) A member terminated under paragraph (3) may appeal the decision to the Minister within 14 days from the date of receipt of the termination letter. Failing to appeal within the stipulated time bars a member from invoking this right.

(6) Where an appeal is made under paragraph (5) the Minister shall deal with it taking into account all the relevant facts and law

and make a decision thereafter informing the member within 14 days.

4. Remuneration

The members of the Board shall be entitled to be paid such remuneration (including travelling and subsistence allowances where appropriate) as the Minister may prescribe by regulation from time to time.

5. Chairperson and Deputy Chairperson

(1) The voting members of the Board shall elect a Chairperson and Deputy Chairperson herein after referred to as the Deputy from among the nominated members.

(2) The Chairperson and Deputy hold office as Chairperson or Deputy until the expiration of the period of their respective appointments or until they cease to be members, whichever first occurs.

(3) At a meeting of the Board –

(a) the Chairperson, or in his absence the Deputy, shall preside as Chair; or

(b) in the absence of both the Chairperson and the Deputy, a nominated member elected by the voting members present shall preside as Chair.

6. Meetings

(1) The Board shall meet at such times and places decided, provided that there shall not be less than one meeting per quarter in any calendar year.

(2) The Secretary shall, at least one week before a meeting of the Board distribute to the members –

(a) the agenda of that meeting;

(b) copies of supporting papers; and

(c) the minutes of the previous meeting

22

(3) Upon deciding the agenda the Chairperson may call on each of the ex officio members and cause discussions on the need or not for personal attendance.

(4) Subject to the provisions of this Schedule, the Board may regulate its own proceedings.

7. Voting

All decisions of the Board shall be made by a majority of votes of the voting members present and voting, and if on any question the votes are equally divided, the presiding Chairperson shall have and exercise a second or casting vote.

8. Quorum

The quorum of any meeting of the Board shall be seven voting members.

9. Disclosure of interest by member of the Board

(1) A member who has a direct or indirect interest -

(a) in a matter being considered or about to be considered in a meeting of the Board; or

(b) in a thing being done or about to be done by the Board,

shall, as soon as the relevant facts relating to the interest come to his knowledge, disclose the nature of the interest to the Board before deliberation on the matter containing the interest.

(2) A disclosure by a member at a meeting of the Board that the member –

(a) is a director or shareholder of a company falling under subparagraph (1) company or is a relative of a director or shareholder of such a company; or

(b) has some other specified interest relating to a specified company or other body or to a specified person; or

(c) has a personal interest in the land to be dealt with;

shall be sufficient disclosure of the nature of the interest.

(3) The Board shall cause particulars of any disclosure made under this paragraph to be recorded in a book kept for the purpose and such book shall be open at all reasonable hours for inspection by person on payment of such fee as the Board may, from time to time, determine.

(4) A disclosure under subsection (1), shall be recorded in the minutes of the Board, and the member –

(a) shall not, after the disclosure –

(i) take part in any deliberation or decision of the Board in relation to the matter; or

(ii) exercise any function under this Act with respect to that thing; and

(b) shall be disregarded for the purpose of constituting a quorum of the Board for any such deliberation or decision.

10. Validity of proceedings

The validity of any proceedings of the Board shall not be affected by any vacancy among the members nor by any defect in the appointment of a member.

11. Assistance

(1) The Board may -

(a) seek assistance or advice on any matter from any person; and

(b) co-opt a person other than an officer in subparagraph (1)(i) to be an additional non-voting member of the Board for the purposes of consideration of a particular matter.

(2) A person who is co-opted under subparagraph (1)(b) shall act in an advisory capacity only and may be reimbursed reasonable travelling and accommodation expenses necessarily incurred in attending meetings of the Board and may be paid such sitting allowance as the Minister determines.

12. Non-liability of Board members

No member shall be liable in respect of anything done or omitted to be done by him in good faith in the execution or purported execution of his powers and duties under this Act.

13. Secretary

The Commissioner shall act as Secretary to the Board, and may delegate any of the functions of Secretary to the Deputy Commissioner.

14. Minutes and List of Successful Applicants

(1) The Secretary shall keep full and accurate minutes of each meeting of the Board. The minutes shall be made available for public inspection soon after the meeting and shall be confirmed by the Board at a later meeting.

(2) The Secretary shall forward notice of allocations made by the Board to every person who, in his opinion, is interested in an application or matter dealt with by the Board.

(3) The Commissioner shall, as soon as practicable after the Board has made an allocation –

(a) publish a list of successful applicants at some place to which the public has unhindered access; and

(b) make public notification, in the media, that the list is available for inspection.

15. Authentication of acts, decisions, minutes etc.

All acts, decisions, minutes and documents that require authentication, shall be signed by the Chairperson, his Deputy or Secretary of the Board in accordance with the decisions of the Board.

16. Forms and Procedure

The Board shall approve and issue Forms and publish directions relating to its procedure. Parties shall adhere to such directions when dealing with the Board.

17. Offices not public offices

The offices of the Chairperson, his Deputy and members of the Board shall not be public offices for the purpose of Chapter XIII of the Constitution".

MINES AND MINERALS (AMENDMENT) ACT 2014

(NO. 6 OF 2014)

PASSED by the National Parliament this twenty-fourth day of April 2014.

(This printed impression has been carefully compared by me with the Bill passed by Parliament and found by me to be a true copy of the Bill)

Taeasi Sanga (Mrs)
Clerk to National Parliament

ASSENTED *to in Her Majesty's name and on Her Majesty's behalf this 14th day of May 2014.*

Sir Frank Utu Ofagioro Kabui
Governor-General

Date of Commencement: see section 1

AN ACT to Amend the Mines and Minerals Act to give effect to the amendments made to the Income Tax Act; which introduces a new mining tax regime.

ENACTED by the National Parliament of Solomon Islands.

MINES AND MINERALS (AMENDMENT) ACT 2014

Short title and commencement

1. This Act may be cited as the Mines and Minerals (Amendment) Act 2014 and commences on the 1st day of July 2014.

Insertion of new section 36A cap 42

2. The Mines and Minerals Act (hereinafter referred to as the "principal Act") is amended by adding a new section 36A as follows -

"Approved infrastructure

36A (1) The Minister may make it a condition of a mining lease that the company to which the mining lease is issued, construct infrastructure to be known as ("approved infrastructure") satisfying the conditions set out in subsection (2).

(2) Approved infrastructure is infrastructure that has been designated by the Government of Solomon Islands and prescribed by Regulation to this Act as infrastructure that:-

(a) will benefit a community of the Solomon Islands; and

(b) can be constructed by a company holding a mining lease more efficiently than by the government of the Solomon Islands."

Amendment of section 45

3. The principal Act is amended in section 45 -

(a) by deleting subsection (2) and substituting the following subsection -

"(2) The rate of royalty payable pursuant to subsection (1) shall be -

(a) in respect of gold, silver, copper, nickel, bauxite, and iron ore, three percent of the gross value of minerals removed from the site of the mine or transferred to another person if there is a disposal of the minerals to another person

prior to removal from the site; and

(b) in respect of all other minerals, a rate prescribed by the Minister in consultation with the Minister of Finance.".

(b) by deleting subsection (4) and inserting instead the following subsection -

"(4) For the purposes of this section a special fund to be known as the Mining Royalty Special Fund is hereby established in accordance with section 100 of the Constitution and all royalties paid in pursuance of this section -

(a) in respect of minerals other than gold, silver, copper, nickel, bauxite and iron ore shall be credited to the Fund so established and the Minister may from the Fund authorise payment, not exceeding one hundred percent to be paid to the owner of the land from or under which the minerals are obtained; and

(b) in respect of gold, silver, copper, nickel, bauxite and iron ore shall be included in the Consolidated Revenue of the Government of Solomon Islands with -

(i) ten percent of the royalties deemed to be received by the Government

6

of Solomon Islands in the capacity of a trustee receiving the royalties for the benefit of the Government of the Province in which the mining lease referred to in subsection (1) is located; and

(ii) forty percent of the royalties deemed to be received by the Government of Solomon Islands in the capacity of a trustee receiving the royalties for the benefit of the owners of the land to which the mining lease referred to subsection (1) applies in respect of the area covered by the renewal, together with the plan thereof;

(c) by inserting after subsection (5) the following new subsection -

"(6) In this section -

"gross value" of gold and silver means the London pm price fix in United States dollars as determined by the London Bullion Market Association for refined gold and silver as at the date of the refinery receipt multiplied by the certified quantity of gold and silver as issued by the relevant refinery; and

"gross value" of minerals specified in paragraph (a) of subsection (2) other than gold or silver means the market value of the minerals determined by reference to a standard specified by the Minister by way of Order.".

Land Resource Compensation – getting the best deal for customary landowners

Resources:

- Boydell, S. & Baya, U. (2012) 'Resource Development on Customary Land – Managing the Complexity through a Pro-Development Compensation Solution', paper presented at the Annual World Bank Conference on Land and Poverty, World Bank, Washington DC, April 2012. http://customarylandsolutions.files.wordpress.com/2013/06/boydell-baya-2012-resource-development-on-customary-land-wb-land-and-poverty-conference-april-2012.pdf
- Boydell, S. & Baya, U. (2013) 'Resource Development on Customary Land – Using Option Pricing to Share the Benefits from the Exploitation of Land Based Resources', paper presented at the Annual World Bank Conference on Land and Poverty, World Bank, Washington DC, April 2013. http://customarylandsolutions.files.wordpress.com/2013/06/boydell-baya-id_292-resource-development-on-customary-land-option-pricing-world-bank-land-poverty-2013-paper-as-submitted-201302261.pdf

ANNUAL CONFERENCE ON LAND AND POVERTY

RESOURCE DEVELOPMENT ON CUSTOMARY LAND - MANAGING THE COMPLEXITY THROUGH A PRO-DEVELOPMENT COMPENSATION SOLUTION

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Abstract

This research explores how an equitable compensation model can be formulated for resource rich developing countries, such as those in Melanesia, where the principles of customary land ownership are protected by Constitutions and traditions alike. Taking law as an analytical concept to articulate the disconnected worldviews of indigenous values and capitalist interests, we explore a Plurality of Registers. Our research design is one of phenomenological transdisciplinarity, which implies our goal is to build models to connect theory to observed reality, allowing us to inform potential policy outcomes. Drawing on a detailed analysis of both institutional arrangements and stakeholder interpretations, we combine these insights with lessons from other jurisdictions to explore and analyse five potential compensation models. We engage scenario analysis to allow the interests of the various stakeholders in a potential mineral resource infrastructure development to be reconciled, and this in turn allows for a discussion and elaboration on the appropriate valuation methods that can be applied, drawing on international best practice. We conclude that the synergistic value approach, a valuation method more familiar to the valuation profession than mainstream economists, has more to offer in the context of land resource compensation in Melanesia.

Keywords

Compensation, synergistic value, custom, development, International Valuation Standards

1 Introduction

Globalisation and modernity impacts on the South Pacific through the potential economic benefits associated with resource exploration on (or below) customary land. The developing countries of the South Pacific region, spread over 11.5 million square miles of ocean, share a combination of geographical, biological, sociological and economic characteristics. All have enduring, traditional systems of customary land tenure (with 83-100% held in customary ownership), that conflict with Western notions of land ownership (C.M. Hann, 1998; Paterson, 2001).

This paper focuses on the resource rich countries of Melanesia, namely Papua New Guinea, Vanuatu, the Solomon Islands and Fiji, where the exploration and extraction of minerals is an ongoing source of conflict between customary landowners, the government and offshore exploration companies. At the time of writing, significant reserves of bauxite, copper and gold have been identified in Fiji, whilst some $60 billion seabed nickel reserves are promised in the Solomon Islands. Meanwhile, Papua New Guinea, which has the largest reserves and the most developed resource sector amongst its Melanesian neighbours, has recently changed its policy regarding the ownership of its mineral reserves. In explaining the new policy direction, Minister for Mines Byron Chan said that the customary understanding of land and minerals should not be separated — for they are one and the same. The problem, he argued, is that PNG has adopted mining legislation based on the Australian experience that vests the mineral ownership in the State rather than the landowners (Chan, 2011). In PNG the State now recognises and protects traditional landowner's right to mineral ownership on or under their traditional land and seabed.

Our purpose in this paper is to explore how an equitable integrated compensation model can be formulated for resource rich developing countries, such as those in Melanesia, where the principles of customary land ownership are protected by Constitutions and traditions alike. Currently, the approaches taken to compensate customary landowners for the loss of access to traditional subsistence and spiritual recognition of their land is somewhat ad hoc, with values significantly depreciated as a result of current models (see, for example, Anderson, 2006; Curtis, 2011), resulting in discontent and understandably giving rise to ongoing land conflict. The research reported in this paper forms part of an ongoing investigation into land resource compensation issues in Melanesia, which is a sub-project of our wider transdisciplinary collaborations on compensation, institutional arrangements and land trusts, and the financial management of inalienable customary land in Australia and the South Pacific. After explaining the pluralism that exists, we provide a review of the literature and law relating to compensation on native land. We then use scenario analysis to investigate a hypothetical (but common) compensation issue. We interrogate international valuation standards for potential solutions to the compensation challenge. This process develops an integrated compensation model that produces a much clearer and, we argue,

equitable indication of the overall compensation quantum, and conclude the paper with a discussion on why synergistic valuation may be part of the optimal approach.

The disconnect that exists between indigenous values and capitalist interests goes beyond legal pluralism (for example, on legal pluralism see Griffiths, 1986; Hooker, 1975), and is part of the ongoing polemic over land use in Melanesia, with much of the debate driven by special interest groups seeking access to customary land (Anderson, 2006, 138). Hughes (2003, 346) argues that modern constitutionalism clouds the issue of identity emphasised in indigenous values. The state cannot be merely conceived of in abstract institutional terms, as assumptions of uniformity under a coherent body of law is at odds with the social and cultural reality of these countries. However, we do share the view of the von Benda-Beckmanns (von Benda-Beckmann & von Benda-Beckmann, 2006, 12) that 'along with many anthropologists, we think that the term *law* can be used as an analytical concept'. They go on to articulate law in both cognitive terms (how things are, and why they are) and normative terms (how things could or should be). We apply these interpretations to what we refer to as the *Plurality of Registers* when attempting to articulate disconnected worldviews between indigenous values and capitalist interests (see Figure 1).

*** *Insert Figure 1 about here* ***

What the *Plurality of Registers* highlights, by taking a transdisciplinary approach, are discrete conceptions of knowing and valuing, with different social relationships, behaviour, permissibility, and consequences – some of which are categorical (typified general rules) and others ideological (more generalised). 'Law in this sense is a generic term that comprises a variety of social phenomena (concepts, rules, principles, procedures, regulations of different sorts, relationships, decisions) at different levels of social organisation' (von Benda-Beckmann & von Benda-Beckmann, 2006, 13). The customary value of land that is used for subsistence purposes and which retains strong spiritual ties to the ancestors whilst providing sustainable stewardship for future generations is intangible. Yet in western neo-classical economic terms, which ground notions of value as economic rent, or surplus of production, such customary subsistence land has no value. There is no problem with these plural worldviews… until they meet. And where they meet, the inalienable notions of land held by the customary stewards are very much at odds with the commodity view of the West that emphasises individual ownership. The reality is that there is some overlap between the extremes we demonstrate in Figure 1. It is this overlap between worldviews that we have to address if we are to seek equitable compensation when, supported by governments relying on their constitutional right to mineral resources (or not, in the case of PNG), and mining interests seeking to exploit the resources in, on or under land that is held by customary owners.

Discussing property rights (be they customary, constitutional or mining) is made more complex because discourse on property rights has emerged within a broad range of disciplines, such as archaeology, anthropology, ethics, sociology, history, psychology, law, geography, biology, philosophy, economics,

and planning. The most influential Western theorising about property is underpinned by what Hann (2007, 290) refers to as the 'standard liberal model', yet property is 'much broader than the liberal tradition recognizes, and that the political, economic and social functions of property are in continuous flux'. Many of these disciplines draw heavily on legal traditions, and in particular have been influenced by Henry Maine's (1861) metaphor of 'a bundle of rights'. The importance of the 'bundle' metaphor is that it highlighted the common circumstance that different individuals or groups may hold differing rights, obligations and restrictions over the same parcel (or piece) of land. The understanding and articulation of property rights, obligations and restrictions influence property relations in all human societies (Boydell & Searle, 2010). As Cole and Grossman (2002, 318) highlight, 'divergent conceptions of property rights can lead to differences in analysis and to confusions in cross-disciplinary scholarship'. Caution needs to be taken when research into property rights, like our own approach, strives to be transdisciplinary (Max-Neef, 2005; Nicolescu, 2006), and navigates the boundaries of diverse disciplines. As Bromley (1991) highlights, there are few concepts in economics that are more central, or more confused, than those of property, rights and in particular property rights. Yet as we demonstrate later in the paper, when we come to deal with valuing compensation, there is an expectation on the valuation profession to place economic worth on these rights, even if such rights are indeed intangible.

Contemporary land dealings in Melanesia cannot be detached from their colonial past. Land policies of colonial administrators created profound and lasting legacies through introduced legal institutions that asserted sovereignty, effectively subjugating customary title to the paradigm of western property law… a paridigm that endures beyond Independence. A contentious interpretation (McNeil, 1989) of this transfer of sovereignty posits that common law cancelled notions of exclusive possession claimed on the basis of customary, a flow-on effect of the common law principle that when you have possession you have *seisin*. What remains is usufructuary in nature: rights which minimize and marginalize customary title in a new regulated form. Such an interpretation poses demonstrable problems for any compensatory regime at common law. In the absence of an inclusive definition of the contents and nature of customary title rights, a claim for compensation would likely require evidence of the presence of the particular right(s) affected to the satisfaction of the Court. This awkward unbundling and singular approach puts the onus on the customary groups asserting and proving their right(s). In the long term, this approach would mean a reconstruction of the bundle of rights (a contested and limited notion, that dates back to Maine, 1861) from ground up, in a new form: one approved by post-colonial arbitrators (an approach that disconnects resources from the ecological and social context in which they exist, see Arnold, 2011, 168)

This introduction and overview highlights the complex challenge, and sets the scene for the next section in which we provide context for the rights and interests we propose to value by exploring compensation experience and practice from other jurisdictions.

2 Compensation Regimes around the world: Legislation, Decided Cases and Resulting Problems

There is no standard approach to compensation of native / customary title under comparative jurisdictions in the Pacific (Boydell & Baya, 2010). Existing compensation regimes in Melanesian States, with localised application, share similar common law origins, founded on the sanctity of property, forbidding deprivation of property rights without fair and just compensation. Common law influences include landmark developments in the area of native title jurisprudence amongst the indigenous peoples of neighbouring New Zealand and Australia, similar to progress in Canada. These developments are augmented by advances in a number of provisions of international instruments that obligate island States under International Law, such as *The Declaration on the Rights of Indigenous People of 2007*[1] relating to central matters such as customary title. Collectively, these obligations recognise the ownership of lands, territories and resources by their traditional owners that encompasses a wide gamut of legal relationship from property to use, including compensation (per Article 26(2) and Article 28(1)).

In Australia, the *Native Title Act, Cth*. (1993) [henceforth NTA] protects native title from extinguishment by adverse government action under s.48. Extinguishment of native title, for example for mining purposes, is usually facilitated by way of an *Indigenous Land Use Agreement* (ILUA). In discussing extinguishment *simpliciter* in *Jango v Northern Territory* (2006) FCA 318 the claimant group were required to establish, as a threshold issue, that they had native title rights and interests over the area at the time the compensable act occurred. In Canada, aboriginal titles / rights are protected under the imprimatur of the Constitutional provision of s.35 (1) of the *Constitution Act 1982*. In some circumstances, however, aboriginal titles / rights can be regulated and compensation may be payable for allowable acts as in *R. v Van der Peet* (1996) 137 DLR (4th), 289. Up until the *Attorney General v Ngati Apa* (2003) 3 NZLR 643, there were effectively no native / customary title claims in New Zealand (except for potential foreshore and sea bed claims), as all customary title to land had been effectively extinguished by the end of the nineteenth century through government purchases and the investigation and conversion to freehold effected post 1862 through the Native Land Court (now the Maori Land Court).

In terms of methods of arriving at compensation sums, negotiated settlements are utilised in Canada, New Zealand, Australia, Papua New Guinea and Fiji. Whilst the process and outcomes may take different legal forms in each jurisdiction, they have in common a diverse approach towards compensation packages in which lump sum payment is only one of several ways of delivering redress. This allows for a flexible approach of tailoring recipient needs, through provisions for intergenerational equity,

[1] Declaration on the Rights of Indigenous Peoples, UN GA 2007, see: http://www.ohchr.org/english/law/ccpr.htm

environmental and resource decision-making powers, employment and cultural acknowledgement amongst others.[2] Such compensation packages add time and complexity to the legal arrangements.

Native title rights to the offshore and seabed have been litigated in a number of common law jurisdictions such as Australia, Canada and New Zealand. Similar rights have also been enunciated pertaining to the First Nations Peoples in the United States per *Native Village of Eyak v Trawler Diane Marie Inc*. (1998) 154F 3rd 1090 (9th Cir). As the doctrine of native / customary title functions as a recognition system, each jurisdiction has a different legal test that claimants must satisfy in order to show that they have native title rights and interests. Once established the question of compensation for extinguishment or infringement of such rights may arise. The New Zealand Court of Appeal decision in *Attorney-General v Ngati Apa* [2003] 3 NZLR 643 determined that the Maori Land Court has jurisdiction to investigate customary title to the foreshore and sea bed, a process that could result in a conversion of the title to freehold title. Importantly, this confirmed that Maori customary / native title to the foreshore and seabed has not been extinguished. Whilst the decision did not determine the nature and content of the customary / native title right(s), the legislative response by Government to the decision served to define the content of these rights. In so doing, the Government is believed to have anticipated what the nature of the rights in the foreshore might be, if litigated, prescribing legal tests for territorial and non-territorial rights based largely on the Canadian experience married with some Australian law (Boydell & Baya, 2010). The legislation was replaced in September 2010 by the *Marine and Coastal Area (Takutai Moana) Bill*, specifically acknowledging the need to consider culturally appropriate tests for the recognition of customary / native title rights.

Canadian doctrines of aboriginal rights and titles have been largely influenced by the operation of s.35 (1) of the *Constitution Act* of (1982), which recognises and affirms existing aboriginal rights as unextinguished at the time of its commencement. To the extent that extinguishment of rights and interests can occur prior to 1982, the test is one of clear and plain intention to extinguish as in *R. v Badger* [1996] 1 SCR 771. There is little substantive litigation on extinguishment as the overall purpose of s.35 saw the need to protect the distinct cultures and recognise their prior occupation of North America, reconciling this with sovereignty of the Crown. This results in a distinctive body of jurisprudence with the overall purpose of reconciliation in mind. A recent decision by the BC Supreme Court in *Ahousaht Indian Band and Nation v (AG) Canada* [2009] BCSC 1494 asked the Court to specifically define the content of their Aboriginal title only to the extent necessary to establish harvest rights and sell fisheries resources incident to that title.

Australian native title in the offshore has been the subject of a number of major court decisions, largely influenced by the definition of native title in s.223 of the *Native Title Act 1993* (Cth.) [NTA]. Since the

[2] See, for example, the $2bn deal between Rio Tinto and five aboriginal groups where only $3,500 p.a. will be paid to individual customary owners, the rest being in terms of scholarship, infrastructure, employment opportunities: http://www.abc.net.au/news/stories/2011/06/03/3234490.htm?section=business

decision of *Wik Peoples v State of Queensland* [1996] 187 CLR 1, clarification on extinguishment and jurisprudential development has largely been dominated by the *inconsistency* model where its application was carried through in *Yarmirr v Northern Territory* [2001] HCA 56, in circumstances where continuing recognition of native title rights and interests to sea country was inconsistent with the common law itself, the common law prevails. In the later case of the *Lardil People v State of Queensland* [2004] FCA298 the claimants asserted *inter alia*, ownership of seas, the sea bed, and the sub-soil below the sea bed and resources of the sea in their respective territories. The judge found that the concept of ownership held by the applicants was not one based on common law concepts of real property. Rather, it was a concept born out of the connection of peoples to each of the elements through their spirituality (see paras 115,147). As native title was earlier interpreted by the NTA in *Ward v Commonwealth* [2000] FCA 191 requiring each individual native right and interests to be identified, this statement would mean that indigenous relationship to country, including sea country, must be translated into individual rights and interests. The NTA requires that the relationship between a community or claimant group and the land be expressed in terms of rights and interests in relation to that land. This means that a relationship that is essentially religious or spiritual must be translated into law. This would invariably require the fragmentation of an integrated view of reordering of affairs into rights and interests, which are considered apart from the duties and obligations which go with them (see para 173).

Applying earlier decisions in *Yarmirr*, the *Ward* judgment found that control of access to the land and waters of the inter-tidal zone and the territorial seas as a right of exclusion even though as part of the traditional law it could not be recognised at common law. It is important to note that this decision is not a determination that rights and control of the foreshore cannot be part of native title in the foreshore, rather the finding reinforces that they cannot be recognised by the common law in Australia because of the scope of native title definition under the NTA.

Further, the decision in *Akiba v Queensland* [2010] FCA 643 saw some accommodation in that the claimants sea territory was viewed as quite different in character to most of the mainland claimants and this difference impacted on the way the jurisprudence was to be applied. It was noted that the Islander claimants in this instance were seamlessly attached and culturally associated to the claimed area that there is no sea-land dichotomy. It emphasised that, in determining the nature of customary title rights and interests of the claimants, it is necessary to examine them from the perspective of the claimants 'because rights and interests of the islanders are those possessed under their traditional laws and customs, they must be at from the perspective of the claimants' [per Neowarra para 364]. The decision is important in that it makes it clear that offshore rights can include rights of a commercial nature. As to the rights claimed *per se*, it was also emphasised that the description of what is theirs, what belongs to them, what they are entitled to, are for the above reasons fundamental to the ascertainment of those rights and interests. These, as it was observed, must be sourced in the laws and customs of the society, and such rights and interests do not for their vitality require recognition by someone other than the person who

asserts them [Sundberg, J. para 500]. Particular rights found were the following: (i) the rights to access, to remain in and to use those marine areas, and (ii) the right to access resources and to take for any purpose resources in those areas (whilst respecting those marine territories and what is in them, noting that the rights do not confer possession, occupation or use to the exclusion of others or the right to control the conduct of others) [at para 540].

Whilst the situation is in a state of flux in Papua New Guinea following the announcement of recognition and protection of traditional landowner's right to mineral ownership on or under their traditional land and seabed (Arvanitakis & Boydell, 2011), the nature of rights and interest therein are not properly articulated for the interpretation of the Courts (Tom'tavala, 2010). There is assistance by way of s.8 of the *Native Customs Recognition Ordinance* (1963) providing Courts to take into account customary considerations in relation to: (i) the ownership by custom of rights on, in, over or in connection with the sea or the reef or in, on, or on the bed of the sea or rights of fishing and, (ii) the ownership by custom of water, or of rights in, over or to water. As reported, the determination of Court in leading cases relating to offshore native title claims is difficult to sustain given that any pre-existing customary laws on which the claim is premised cannot be easily identified. Whilst the reported cases were premised on what is genuinely believed to be customary property, the end result of receiving compensation did not materialise given the absence of a framework of rights and interests that the Court could rely on (see *Ene Land Group Inc. v Fonsen Logging (PNG) Pty Ltd* [1998] PNGLR 1). The approach of the *Mining Act* 1992 favours a disjoint of surface and underground tenure, thereby quashing any intangible flow that is provided through its fusion.

Given the absence of a comprehensive compensation policy that clearly specifies the nature and extent of the compensable rights and interests, any mining development is bound to run into problems given that understanding of customary owners is that they own everything above and below the land, including the minerals (a reality now shared by the State, in the case of Papua New Guinea). Often, friction arises between the customary owners on the one hand and the developer (or resource company) on the other, with the former feeling that fair compensation has not been paid (McLeod, 2000). Fiji has had a mixed history in this regard, in that it recognised that it had no comprehensive system of compensation and commenced work towards a policy in 1999, albeit that such policy reforms are yet to be enacted in legislation.

The definition of compensable damage and compensation was a key consideration in the derivation of Fiji's compensation policy, including the award of damages for any loss in value or damage to land, water, foreshore or other resources as well as rights arising from prospecting, exploration and mining activities, to landowners, occupiers and the surrounding communities, in monetary or non monetary forms (Republic of Fiji Islands, 1999). This draft policy is explicit in listing all possible damages, including the loss of cultural rights. However, it did not translate the possibilities of compensable rights and interests that are intangible but inherent to the body of culture of the landowning unit that forms part

of the traditional estate. In the absence of legislative development, landowners are back at the mercy of compensation regime pre August 1999. The notable development since then has been loss of royalty payments to the landowners, which is now paid direct to the State by the Department of Mines as a result of a *Mining Decree* issued in 2010. Currently Fiji has three major mining projects underway and several other significant initiatives ranging from prospecting to fully operational schemes. Our research has identified that the lack of a comprehensive mining compensation policy has resulted in compensation sums for the land-based aspects of the mines being arbitrary, largely due to the *ad hoc* nature of the negotiations. Like most of the Pacific Island States, compensation thus far has been largely limited to surface damage and leasing of surface land for mining or access purpose.

Mining in the Solomon Islands accounted for 30 per cent of its GDP at its peak before closure of its major mine in 1999, and will probably make a similar contribution for the next several years if restored to its former operating level and augmented by nickel exploration (Filer, 2006, 8). Administered under the *Mines and Mineral Act* 1990, the issue of compensation is peppered through s.32-35, ranging from the use or compulsory acquisition of land relating to mining, surface rentals and the acquisition of surface rights. Royalties are considered in s.45. Although there have been three amendments to the Act, compensation provision wording is general in nature, vesting authority in the (hoped for) diligence of government officials. Market value of surface lands is precisely described so as not to include the price of minerals underground, with heads of compensation limited to value of improvements, compensation for loss of trees and crops, and severance and disturbance. Whilst there is no intangible valuation consideration in the current compensation provisions, the Solomon Islands have the perfect opportunity to develop an exemplary mining policy given the current national rebuilding process may provide a chance for legislative reform of its main economic sectors.

Vanuatu has latent potential for mining according to the National Investment Policy (Government of Vanuatu, 2005). As there is currently no mineral extraction happening in Vanuatu, this provides an optimal opportunity for policy makers to formulate an equitable pro-development compensation model for any future activity.

This section has highlighted the variable and arbitrary approach to land resource compensation internationally and in Melanesia. Our research question centres on how to develop an integrated land resource compensation model that produces a much clearer and equitable indication of the overall compensation quantum, whilst attempting to bridge the disconnect that exists between indigenous values and capitalist interests.

3 Research Design

To answer the research question, we use a research design of phenomenological transdisciplinarity, which implies our goal is to build models to connect theory to observed reality, allowing us to inform

potential policy outcomes. 'Transdisciplinarity concerns itself with what is between the disciplines, across the different disciplines, and beyond all disciplines' (Nicolescu, 2006, 143). Methodologically, this research adopts what Creswell and Tashakkori (2007) refer to as a paradigm perspective. Our approach incorporates a breadth of sociological analysis, legal discourse, ecological and cultural sensitivity, and financial management activities. To achieve this, we integrate an eclectic combination of research modes into history, law, social inquiry, theory, practice, and beliefs, with the attitudes of finance, finance providers, government organisations, NGOs, resource exploration companies, and indigenous property owners. These insights support our analysis of the existing institutional arrangements and provide important data that assist in the development of our integrated compensation model.

The paradigm perspective that we engage for our compensation research has its genesis in the classic definition of mixed methods research of Greene, Caracelli, and Graham (1989, 256), who defined mixed methods designs as 'those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words)'. The application of this innovative approach has enabled us to combine the legal discourse (words) surrounding indigenous property rights in the resource exploration context with the financial implications (numbers) pertaining to those rights in developing a compensation matrix.

As we highlighted in the previous section, there is a different scale between the extent of identified mineral resources in the four Melanesia countries that we have focused on, just as there are different physical land masses, land trust or incorporated land group development, genealogies and institutional arrangements. In some countries we have been able to undertake more fieldwork and community engagement, whereas in others our emphasis has either been with government agencies or NGOs. It is a work in progress, but having developed a compensation model we are testing its efficacy not just on mineral exploration, but also on resort development and other infrastructure schemes. In certain countries our involvement has extended to policy advice on the implementation of our suggested compensation modelling. This approach has enabled the researchers to assess the functionality of existing compensation policies, to have broad access to government information and to undertake extensive stakeholder analysis before offering recommendations on appropriate institutional processes that can be harnessed to assist in evolving change.

4 Findings and Discussion

Some of the agreement processes from other countries (e.g., Australia, New Zealand and Canada) outlined in Section 2 are too complex for Melanesian needs. They point to a trend towards framing agreements that are not designed to specifically compensate indigenous groups for extinguishment of customary title. They emphasise a structure of long-term relationships between indigenous groups and the Crown or State, including sharing of resource revenues and participation in decision-making affecting

their lands, which is alien to Melanesian custom. In part, this is the result of either the recognition of customary rights through court processes, or the anticipation by governments of such recognition. In this context, our subject countries have different levels of institutional arrangement. For example, Fiji has evidenced customary ownership for over a century and has had a Trust structure in place since the 1940s (Boydell, 2010). In contrast, Papua New Guinea has some examples of Incorporated Land Groups but no centralised record system. Similarly, the Solomon Islands have only recently started evolving trust structures, and there are only two examples in Vanuatu (the Mele and Ifira Trusts, on the urban fringe of Port Vila).

We have analysed four compensation approaches, which we discuss in more detail in the following subsections, and then incorporate them into a hybrid model that can best address the complexities and peculiarities of the Melanesian countries.

4.1 Model A – tailor compensation to the exact rights of customary landowners

Such an approach requires some kind of recognition system as a precursor to determining compensation, most likely a common law or statutory native title system.

The advantages of this approach are that it: (i) tailors the compensation to the exact rights held – possibly providing a more nuanced quantum of compensation; (ii) allows for western commodification of rights (which some stakeholders seem to want); and (iii) is likely to result in a lump sum compensation figure. Lump sum compensation avoids many of the complexities introduced by diverse (multi-criteria) compensation packages, such as how to legally implement / enforce indirect payments.

The disadvantages are that it: (i) sits very uncomfortably with those countries with a continued recognition of rights, such as Fiji; (ii) is complex; (iii) requires human resources and capacity that these Melanesian countries do not currently have, as the establishment of rights on a case by case basis is costly; (iv) can be a very blunt tool, given that the doctrine of native title (e.g. as applied in Australia) tends to exclude cultural, social and environmental factors. Standard native title law will not encompass the rich nature of customary rights and hence will undervalue the non-physical facets of the relationship of holders to the their land or marine rights; and (v) does not allow for a meaningful transfer of profit or wealth sharing, so is likely to result in a single lump sum monetary figure, rather than a diverse compensation package.

4.2 Model B – assume a common set of property rights prevail and tailor compensation accordingly

Native title claims, be they derived from the common law or statute are lengthy, expensive, and require specialists in the form of lawyers, anthropologists and historians. It is doubtful that Melanesian countries have the current capacity to enter into a recognition process. Where land is compulsorily acquired under

Anglo-Australian legal frameworks, apart from the package of compensation (heads of claim) derived from the addition of the (unimproved) land value, value to the owner, special value, injurious affection, disturbance and severance, a number of states provide for an additional amount which is a judicial discretion know as *solatium*.

Solatium is a discretionary payment to acknowledge hardship, inconvenience, trauma or other unspecified loss caused by the resumption. In a number of negotiated agreements applied to extinguish native title (for mining activities and related infrastructure) in Australia, the concept of solatium has been applied to what can be called *Special Indigenous Value* (SIV). Sheehan (2010) suggests that there is a strong argument that SIV should be adopted by the compensation assessor as a relevant head of compensation, drawing on its concepts of special value to the owner and solatium. In considering an award of solatium, circumstances such as the length of time the claimant has occupied the land, the inconvenience likely to be suffered by reason of removal from the land, and the period of time the claimant would have been likely to continue to occupy the land may be considered, although hitherto awards have tended not to extend to factors like emotional stress arising from the compulsory acquisition.

The focus in the Australian examples is on 'extinguishment' of native title. This is a controversial concept in Melanesia, where customary land is seen as inalienable. Rather the situation is more aligned to damage, disturbance, and loss of access and loss of connection (notionally for a time constrained period rather than in perpetuity).

Sheehan (2010) suggests that in negotiated agreements it is necessary to ensure the compensatory framework for native title is correct, so working within existing case law and statutory constructs is compelling – but disregards the pre-eminence of custom in Melanesian constitutions. Moreover, Sheehan places reliance on Unimproved Capital Value (which can often be more easily assessed on the basis of market evidence in Australia than in Melanesia, where there is effectively no market for inalienable customary land). In contrast, and in a Melanesian context, Anderson (2006) argues that 'opportunity cost' can be used in such circumstances to better understand the real (many levels of) land value to customary landowners, an approach that has been successfully tested by Curtis (2011, who applied the Anderson approach). As the Pacific Islands Forum Secretariat recommends, 'Administratively determined Unimproved Capital Value based returns to customary land must be avoided. Although these may seem uncomplicated, they do not facilitate a fair return to landowners' (PIFS, 2008, 17). In the Australian situation, where Special Indigenous Value has been treated as analogous to solatium, the largest level of judicial discretion available at present is in Western Australia, where it can be awarded at up to 10% of the total compensation sum (although there are strong views that is should be a considerably higher quantum).

The advantages of this approach are that it: (i) assumes a simple base-line that customary rights are similar in all areas; (ii) can include a component for cultural, social and environmental aspects (i.e. solatium / Special Indigenous Value).

The disadvantages are that it: (i) does not take into account the nature of the infringement; (ii) necessitates commodification of the property rights; (iii) does not provide for any particular equality or distribution of resources; (iv) relies on Unimproved Capital Value as a component of the compensation calculation, which is inappropriate in the Melanesian context; (v) can be difficult to quantify the cultural, social and environmental aspects of the development, and the discretionary allocation of SIV at 10% does not adequately recompense the sense of loss; and (vi) assumes a single monetary figure, rather than a raft of compensation measures.

4.3 Model C – development driven quantification

This approach circumvents the need to determine the nature and extent of customary rights. Instead, compensation is assessed by reference to the benefits accruing to the developer, rather than the infringement on the rights of the customary owner(s). The benefits accruing to the developer are based on the 'marriage value' that is created by recognising, and combining, the interests in the various land and marine components from mine site to wharf and to the edge of the EEZ. Simply stated, a mining development has limited commercial value if there is no wharf access to export the minerals.

This marriage value is known in contemporary literature as synergistic value. The International Valuation Standards (API & PINZ, 2008, s.4.3.6; IVSC, 2011, 12) defines ***Synergistic Value*** as: 'An additional element of value created by the combination of two or more interests where the combined value is more than the sum of the separate values'. The IVSC (2011, 24) elaborates, 'If the synergies are only available to one specific buyer then it is an example of *special value*'.

In a development driven quantification, a standard compensation package could have a number of elements including, but not limited to: (a) a financial component based on a share of the land at mine, land at wharf, and marine access marriage value, and associated synergistic value increase; (b) clearly articulating the length of the arrangement (term), the process in the event of a change in user (such as premium for transfer based on a percentage of the increase in value between project inception and transfer), and the reversionary ownership provisions of the improvements (which should be returned in good and tenantable repair) at lease / licence expiration; (c) a number of jobs for members of the various landowning and marine (or fishing ground) owning groups as well as the native landowners (number could be determined by reference to profit or some other changeable yardstick allowing for changes in business practice over time); (d) the provision of housing or other community infrastructure; and (e) schooling, health assistance, or whatever (to incorporate the minor cost of important trophy items that are often stated in leases over customary land, such as vehicles or boats).

The advantages of this approach are that it: (i) avoids the need to determine particular property rights; (ii) provides for a diverse, flexible and index-linked compensation package; (iii) encourages transfer of profits / adequate sharing of wealth; (iv) can be set up to provide for intergenerational equity; (v) can distribute payments easily per year (or some other term) as occurs now; and (vi) can be tailored to minimise / avoid some of the problems likely to ensue within the community when compensation is paid as a large, single, up-front lump sum (premium).

The disadvantages are that it: (i) is much more difficult to legally implement; and (ii) raises questions of form (contract) and enforcement.

4.4 Model D – negotiated agreement

Negotiated Agreements are emerging as international best practice, and are based around a negotiation that is determined on a case-by-case basis, with engagement of all stakeholders who have a legal / financial interest. This is a common Australian model. It is also a common way of doing business in New Zealand, although in that context it usually pairs recognition of rights with monetary compensation to redress past grievances. Negotiated agreements have been utilised in some resource schemes in Papua New Guinea, but are open to contestation as a result of uncertain genealogy. Negotiated agreements are confidential in nature, so there is little evidence available to reference.

The advantages of this approach are that it: (i) can lead to a quite diverse and sophisticated compensation package; (ii) allows the customary rights owners to have a stake in what happens to their land – to 'own' the agreement; and (iii) does not require precise identification of property rights.

The disadvantages are that it: (i) takes a long time – thereby holding up development significantly; (ii) causes capacity issues, as the parties need to be fully advised and represented by independent legal and valuation practitioners, with the requisite skills to forecast future income growth and liabilities; and (iii) needs the State (or Crown) to be a party, thereby complicating matters further.

4.5 Requirements of a Workable Compensation Model

As stated, international best practice is clearly moving towards negotiated frameworks. However, many of these are large-scale agreements, often taking years to negotiate, which embed compensation within an overall redress package. Both monetary and non-monetary forms of redress are given. The quantum of the monetary component does not always directly relate to market or non-market values of particular rights. In Australia, smaller scale arrangements are dealt with through Indigenous Land Use Agreements (ILUAs), allowing potential rights holders to contract (i.e. those who have claimed but not yet proven their native title rights), as the contracting does not depend on a precise identification of their rights. The compensation (composed of financial and non-financial components) does not therefore reflect a market value determination of their identified rights.

We have identified that any compensation mechanism should (i) be based on a rich understanding of the nature of the property rights, including the customary owners themselves as without such understanding any new mechanism may lack legitimacy; (ii) acknowledge the experience of other jurisdictions, whilst being appropriate to the given circumstances in a particular country; (iii) be sophisticated enough to ensure an appropriate transfer of wealth from developers to customary owners; (iv) not be limited to a singular monetary sum, but rather ensure ongoing social and economic improvement for custom owners; (v) respond to capacity problems; (vi) be embedded in a legal arrangement that provides certainty for all parties; (vii) determine how compensation will be held, managed, invested, accounted and distributed; (viii) ensure any development activity is undertaken sensitively and sustainably, prioritizing cultural and ecological wellbeing; and (ix) provide for inter-generational equity.

4.6 Scenario Analysis

The best way to contextualize a compensation mechanism is by exploring a hypothetical example (see Figure 2). In this example, we will assume that there may be several customary landowning groups impacted from mine to wharf. Indeed it is quite common in Melanesia for customary landowners living in the interior (or highlands) where mines are often found to have fishing rights over inner reef areas, such is the nature of traditional commerce and inter-clan arrangements. Our purpose in this example is to provide sufficient background to lead in to a discussion on synergistic value and a greater exploration of our hybrid compensation model.

*** *Insert Figure 2 about here* ***

The first stage of any disturbance of customary rights is to undertake a stakeholder analysis to provide some clarity on the power / influence / relationship / interest dimensions that arise in a particular context. There is a large body of emergent literature on stakeholder analysis (see, for example, Holland, 2007 for a comprehensive summary). Our particular approach to land policy stakeholder analysis (per Boydell, 2008) utilizes eight key questions, which we summarise below in the preliminary stakeholder analysis.

Who are the potential beneficiaries? (a) In terms of the marine and inner reef areas, these could be the custom owners of Village A and Village B, as well as those from other parts of the country with rights over marine and inner reef areas. (b) Members of Village B in terms of remuneration from the lease for the depot. (c) Members of Village B in terms of remuneration from indirect economic gain (employment at several levels). There is potential that members of Village A will also benefit in the same way, but such provisions are unlikely to be written into the lease. This therefore creates a conflict between relating the land lease arrangement to the compensation for marine areas. So, Village A should get both indirect and direct economic gain – and this is why there is a need for acknowledgement for the 'marriage value' (synergistic value) between the land component and water component. What this in essence means is that it is inappropriate to enter into a lease over the land without integrating access rights (and wharf construction rights, reef destruction compensation) to marine component, as

fragmentation leads to social problems. Alternatively phrased, determining the calculation of compensation for the marine area has to acknowledge that remuneration from the land lease component has already benefited Village B. Rather than changing the lease structures, you adjust the compensation to reflect that fact that there is a clear marriage value between the land interest held by Village B and the marine interest jointly held by Village A, Village B and other rights holders. (d) The Developer, and wharf / mine operator (who may also be the developer). (e) Surrounding villages (other custom landowning groups). (f) Public whose services may be called (food supplies through to banking ventures – i.e. local through to corporate). (g) State, through tax (employee taxes, exploration licences and company taxes) and associated increase in GDP.

Who might be adversely affected? (a) Limitation of exercise of rights to Village A & B (see next heading and Table 1). (b) Other members of the public who use the commons. (c) Fishing licence holders. (d) Marine environment from pollution.

Who has existing rights? (a) Village A. (b) Village B. (c) Any other customary interests in the waterway and marine areas. (d) Any existing fishing licensees. In Table 1 we elaborate on these existing rights using a categorisation of rights model (Boydell, 2007, 117) that we have successfully engaged in a range of other projects. The model is adapted from a range of sources (including Benda-Beckmann, Benda-Beckmann, & Wiber, 2006; Bromley, 1991; Crocombe, 1975; Farran & Paterson, 2004; Payne, 1997; Rigsby, 1998; Schlager & Ostrom, 1992; J. Sheehan & Small, 2002; World Bank, 2003).

Who is likely to be voiceless? (a) Individual members who are not in the majority – so there is a need to make sure that everyone who has a right to speak has spoken (including young/old, male/female), so absentees may have limited rights. (b) Role of absent members (who may send remittances). (c) Neighbouring custom landowners. (d) Historical associates and those who have connection. (e) General public who use the area (other than through formal planning approval channels).

Who is likely to resent change and mobilize resistance against it? (a) Absent members, who may romanticise how the village 'used to be' with the passage of time. (b) Other custom owners seeking to entice a particular exploration company to use their land for processing, depot or wharf facilities. (c) Other members of the public who use the commons. (d) Fishing licence holders.

Who is responsible for intended plans? (a) The mining company management (who may be located offshore). (b) The State in terms of providing exploration licenses and mining agreements.

Who has money, skills or key information? (a) The mining company management and shareholders hold money to realize the opportunity. (b) The mining company in terms of prospecting skills, extractive capability and market realization. (c) Associated with mining information, the mining company. Associated with ownership information, the State.

Whose behaviour has to change for success? (a) This question may be premature, and is potentially contingent on the perceptions of the parties. (b) Potentially, the mining company if they want access to resources under customary land, and the need to move towards a synergistic valuation approach. (c) Potentially, the State in needing to facilitate collaboration between the diverse stakeholders. (d) Potentially, the custom landowners of Village A and Village B, together with custom holders of the marine access resources, to achieve a mutually beneficial compromise that allows (ideally through the auspices of the State) a realization of the synergistic value of the development collaboration.

*** *Insert Table 1 about here* ***

4.7 Model E – the hybrid

We now need to integrate this analysis into the valuation considerations. There is a large body of international literature on economic valuation and resource management[3], and ecosystem valuation[4]. Much of the resource valuation literature takes a *Total Economic Value* approach, where values are allocated to use values (direct and indirect) and non-use values (option value, quasi-option value, bequest value and existence, or psychic, value). These approaches are used by several of the contributors in Ahmed et al. (2005), and applied in the Fiji context by Korovulavula et al. (2008). The valuation techniques engaged in these use and non-use approaches are those applied by neo-classical economists (as opposed to valuers), and include: Effect on Production; Replacement Costs; Damage Costs; Travel Costs; and, the Contingent Valuation Method (Pascual et al., 2010, 192-211). These have been variously applied on a range of international situations, with varying success. We consider that, because of the inputs required and the outputs desired, they all fall short of addressing valuation for land resource compensation in a Melanesian context – a point reinforced by Pascual et al. (2010, 229) highlighting the lack of local research capacity may result in a lack of awareness of valuation methods, and complicated by different value concepts held by mineral exploration companies and the customary landowners.

We argue that the synergistic value approach, a valuation method more familiar to the valuation profession than mainstream economists, has more to offer in the context of land resource compensation in Melanesia. This marriage value approach takes a more holistic approach, engaging with the economic benefits that are gained from providing a mining infrastructure in multiple locations with access inner reef and marine areas (or, for example, providing a mineral exploration company access to reclaim an area for a wharf facility with associated jetty). It has the ability to be adapted and expanded to also include items that relate to both the positives (e.g., partnership, employment, service sector and food supply, environmental conservation and cultural heritage), as well as the negatives (e.g., potential loss of access, environmental contamination, sedimentation, eutrophication, reef degeneration, loss of amenity /

[3] See, for example, the comprehensive set of links provided by the World Resources Institute: http://www.wri.org/project/valuation-caribbean-reefs/references
[4] http://www.ecosystemvaluation.org/links.htm

privacy, loss of cultural heritage). The quantum of compensation will need to be determined on a case-by-case basis, with the synergistic value between the mine, mining infrastructure, depot / wharf and the marine area forming a main component on which to base the negotiated agreement.

In Table 2 we summarise, by way of example, the breadth valuation approaches that should be engaged in addressing the compensation issues to be negotiated in respect of our scenario. In this regard, we use the International Valuation Standards (IVSC, 2011) as a basis for the terminology. The tabulated compensation issues that are included (in Table 2) are not necessarily exhaustive, but are grounded on a synthesis of the literature on the sustainable management of land and reef areas as well as stakeholder evidence from our ongoing fieldwork in Melanesia. The table is for demonstration purposes only, and should be adapted as needed to fit the circumstances of the geographic location of the proposed scheme, the country context, and the proximity of associated physical and social factors.

*** *Insert Table 2 about here* ***

The valuation components that are derived through this process will produce a much clearer indication of the overall compensation quantum. This figure, which the present value of the loss / infringement, should then be dealt with as a compensation package. This package should have regard for the benefits accruing from the scheme (if any), such as employment opportunities, food and service provision, training, and the current package of notionally goodwill items (such as village benefits, medical fees, schooling, donations and material items e.g. boats / vehicles).

This analysis highlights that the most comprehensive valuation is provided by the synergistic value approach. We discuss this finding and outline how we propose to field test our model in the concluding section.

5 Conclusion and Further Research

This research has identified the complexity of dealing with development on customary owned land in Melanesia. After demonstrating the lack of alignment between customary and western worldviews, we explored examples of compensation arrangements (particularly those impacting indigenous landholdings) from a number of countries. Having articulated our phenomenological transdisciplinarity approach, the international context allowed us to explore four approaches to compensation. We evolved these into a fifth approach, a hybrid that we analysed through the stakeholder interests of a hypothetical wharf facility on customary land for mineral exportation. We discussed econometric approaches to valuation briefly, before engaging the diversity of approaches in the International Valuation Standards to our scenario. This analysis confirmed that the synergistic valuation approach has the potential to provide the most equitable compensation for land resource development schemes in a Melanesian context.

Our hybrid 'equitable pro-development compensation model' is significantly validated by the performance attributes summarised in the recent work of Cole and Ostrom (2012, p.56), which synthesises multiple sources:

1. *Accurate information about the condition of the resources and the expected flow of benefits and costs is available at low cost to participants*. Indigenous landowners, or any landowners for that matter, and the State, are at a disadvantage when compared to the prospecting capability of mining companies in terms of the condition of the mineral reserves, the ease of access, extraction, and processing, and the market demand / profit potential.

2. *Participants share a common understanding about the potential benefits and risks associated with the continuance of the status quo as contrasted with changes in norms and rules that they could feasibly adopt*. This would appear to hold true for all stakeholders, given that the indigenous landowners and the State, generally speaking, aspire to share the benefits of 'development' in its many forms – and have to undergo the growing pains associated with changes in norms and rules to achieve that goal. Likewise, there is a realisation by the extractive industry that the current uncertainty surrounding contracts established on and over/under customary land leads to increased risk that could be mitigated through a 'marriage of aspirations'.

3. *Participants share generalised norms of reciprocity and trust that can be used as initial social capital*. Whilst this may hold true intra-culturally, suspicion prevails within the indigenous community about the intentions and honesty of the 'outsiders' and 'foreigners' who aspire to utilise their land to access mineral wealth. A synergistic valuation approach provides mutual benefits to the stakeholders and as such offers a 'generalised norm' upon which social capital can be built.

4. *The group using the resource is relatively stable*. This can be interpreted in two ways. The customs and traditions of the land holding unit are relatively stable, albeit transitional in coming to terms with the expectations of the cash economy. It by resource user we mean the mining company (with their responsibility to home State and / or shareholders), if chosen carefully by the host State there is inherent stability.

5. *Participants plan to live and work in the same area for a long time (and in some cases, expect their offspring to live there as well) and, thus, do not heavily discount the future*. This aspiration does not hold true for the extractive industry sector, as the modus operandi is to maximise returns and minimise risk with no long-term intergenerational relationship with the host landowning community. The concern of the indigenous community is that the resource extraction will prejudice their ability to continue living, subsistence or otherwise, in the area into the future.

6. *Participants use collective choice rules that fall between the extremes of unanimity or control by a few (or even a bare majority) and, thus, avoid high transaction or high deprivation costs*. The premise of

synergistic value offers shared benefits to the landowning group, but this is currently constrained by the institutional arrangements surrounding chiefly hierarchy, gender inequity, and greed that need to be worked out by the participants. To progress and achieve collective choice rules, a level of social transformation is required.

7. *Participants can develop relatively accurate and low-cost monitoring and sanctioning arrangements*. This works to the benefit of all parties, but requires a level of State guarantee to fully support for the contractual arrangements that are put in place.

As Adams at al. (2003) highlight 'conflicts over the management of common pool resources are not simply material. They also depend on the perceptions of the protagonists'. Whilst it is a common assumption that policy relating to the management (and exploration / extraction) of natural resources is self-evident, there is a need to better understand the ways that different stakeholders understand the management problems in order to progress and effective dialogue. These values are the impressions that different individuals formulate from their individual comprehensions of the settings and circumstances in which they are situated (Bromley, 2006, p.138), and that understandably can differ from the impressions of those around them. To this end, 'policy debates are often flawed because of the assumption that actors involved share an understanding of the problem that is being discussed'. Policy debates therefore often ignore the fact that the assumptions, knowledge, and understandings that underlie the definition of resource problems are frequently uncertain and contested.

When economists offer specific prescriptions about collective choice – indicating which decisions are efficient, correct, rational, best, and socially preferred – we see truth claims from a particular discipline projected onto the individual and collective stage of contending expressions and contending created imaginings about what is the best for the future of those persons (and their descendants) responsible for these contested expressions and contested created imaginings. The pragmatist would challenge these truth claims by asking if those specific truth claims can be justified to all members of that particular community (Bromley, 2006, pp.146-7).

While our hybrid model can be difficult to use, in practice, because consensus is hard to reach and is inherently time consuming, what is important is to understand the reasons for choices (and the value decisions of the respective stakeholders), so we will be better placed to evolve a theory of collective action and institutional change. However, such a theory requires explicit understanding of the concepts, impressions and shared imaginings that we can find through an analysis of stakeholder values that can be extrapolated into the synergistic valuation approach.

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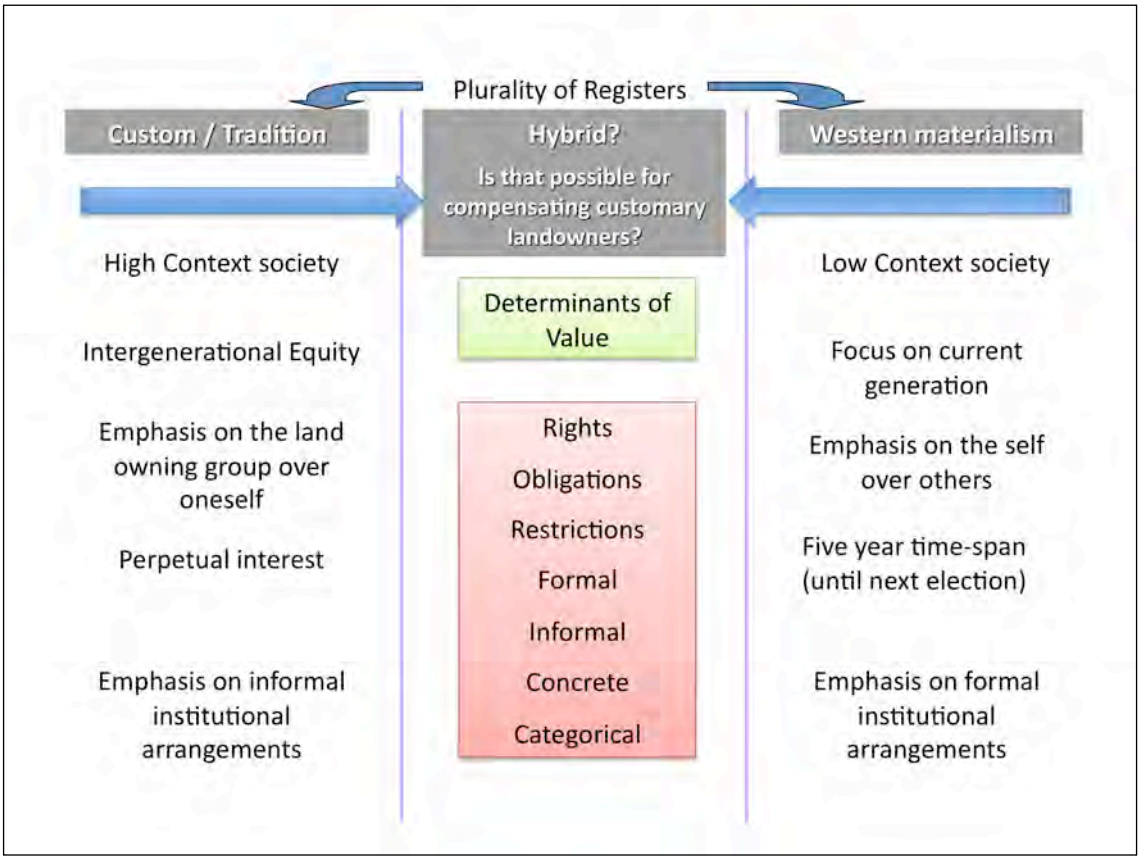

Figure 1: Plurality of Registers
(Source: Boydell & Baya for this research)

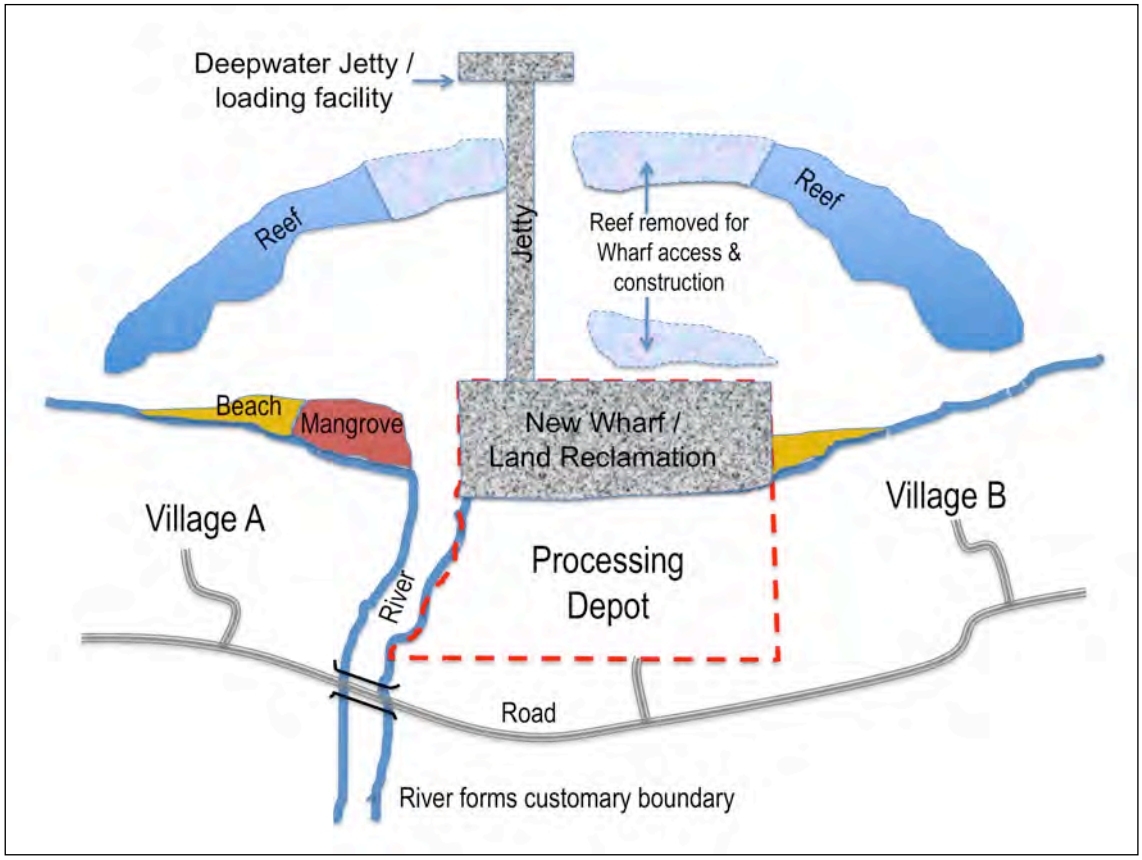

Figure 2: Wharf Scenario
(Source: Boydell & Baya for this research)

Right	Response
Direct use: Rights to plant, harvest, build, access and similar, maybe shared rights	Village A, Village B, also, those to who the custom owners grant subsidiary and overlapping rights for fishing / sand and gravel
Indirect economic gain: For example through employment in mine/depot/wharf, transport, equipment, services and food	Village A, Village B, plus members of other custom rights holding groups
Control: Conditions of direct/indirect use, held by persons other than the user	Village A, Village B, Subject to any licence, overriding of State
Transfer: Effective powers to transmit rights-by will, sale, mortgage, gift, or other conveyance	Jointly through Village A and Village B in a customary sense
Residual rights: Remaining rights at the end of a term (such as lease, death, eviction), includes reversionary rights	Jointly custom owners of Village A and Village B
Rights of identification (symbolic rights): Associated with psychological or social aspects with no direct economic or material function	Primarily Village A and Village B, plus the wider clan group to which Village A and Village B are aligned in ancestral connection
Duration: Length of time property right is held, indicating profits and/or savings	As agreed in any lease arrangement
Flexibility: Right should cater for modifications and alterations	Developer in negotiation with Village A / Village B, plus State (should it apply overarching legislation / decree)
Exclusivity: Inverse of the number of people with shared or similar rights, more relevant to water property	Village A and Village B, as well as remote custom rights holders, for example, for a special traditional practice over that body of water
Quality of title: Level of security that is available as tenure shifts from the optimum	How is the titled guaranteed by the state? The state guarantees by virtue of administrative authority, per the *Yanner v Eaton* example
Divisibility: Property right can be shared over territories, according to season, etc.	Village A and Village B, and developer or State if they require
Access: Entry / admission into the marine area	Village A and Village B, the State, any existing fishing licensees
Withdrawal (extraction): Extraction of resources by owner despite leasing property	Village A and Village B, the State (if seabed), those to whom the custom rights holders grant withdrawal rights
Management: Be able to make decisions on how and by whom a thing shall be used	Village A and Village B, but ideally through a particular individual who has authority to speak for the custom owners; Environmental Management overseen by the State
Exclusion: Disallowing others from entry and use of resources	Village A and Village B; The State
Alienation: Transfer of an interest (right) in property to another, in perpetuity	Village A and Village B jointly; or developer on application to transfer current interest or create a subsidiary interest

Table 1: Analysis of stakeholder rights
(Source: Boydell and Baya, for this research, adapted from Boydell, 2007)

	Cost Approach	Income Approach	Direct Market Comparison	Depreciated Replacement Cost	Synergistic ('marriage') Value	Relief-from-Royalty method	Premium Profits Method	Excess Earnings Method	Fair Value	Special (Indigenous) Value	Going-Concern Value	Discounted Cash Flow	Risk Replication Method	Marine Resource Inventory
Marriage of interests between the land and marine areas	X	X	X		X				x	X	X	X		
Loss of access, if any (taking)		X			X				X	X	X			
Removal of mangrove, if any (taking)	X	X			X	X	X		X	X	X			
Removal of reef, if any (taking)	X	X			X	X				X			X	
Removal of sand / shale (taking)	X	X			X	X				X			X	
Loss of mangrove habitat (damage)	X				X					X			X	
Increased vulnerability through lost nutrient filtering / flood control / storm buffer / shoreline stabilisation / microclimatic stabilization / biodiversity maintenance / education and research / bio-prospecting / carbon sequestration	X		X		X					X			X	
Enviromental contamination from resort waste, dumping and spillage (damage)	X		X		X					X			X	
Sedimentation (damage)	X		X		X					X			X	
Eutrophication (damage)	X		X		X					X			X	
Reef degeneration (damage)	X		X		X					X			X	
Construction contamination risk (damage that can be addressed through the EIA bond)	X		X		X					X			X	X
Reduction of fish stock (damage)	X	X	X		X				X	X	X		X	X
Potential loss of income from possible restriction on fishing access (damage)		X	X		X				X	X	X		X	
Loss of amenity / privacy (damage)					X					X			X	
Truncation of cultural association, and diminution / impact on cultural heritage (damage)					X					X			X	
Loss of direct cultural and spiritual connection (loss of Special Indigenous Value)					X					X			X	
Loss of ability to exercise cultural and spiritual connection (loss of Special Indigenous Value)					X					X			X	

Table 2: applying IVSC approaches to Land Resource Compensation scenario
(Source: Boydell & Baya for this research)

Annual World Bank Conference on Land and Poverty 2013

RESOURCE DEVELOPMENT ON CUSTOMARY LAND - USING OPTION PRICING THEORY TO SHARE THE BENEFITS FROM THE EXPLOITATION OF LAND BASED RESOURCES

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ABSTRACT

Building on prior research that identified the benefits of engaging a synergistic value approach to land resource compensation, this paper explores the potential of applying option-pricing theory as a proxy for the economic value of the 'marriage' of stakeholder interests associated with mineral exploitation. Drawing on the example of a copper and gold reserve in Fiji, and equally applicable to other Pacific Islands or African contexts, the research adapts, evolves and explains the findings of recent modeling to recommend equitable stakeholder benefit sharing in the context of customary land. The synergistic compensation model, informed by (and acknowledging the limitations of) option pricing theory, offers a key transparent negotiation tool for all parties – but highlights the need for increased negotiation capacity in developing countries. Informed by publicly available data, it places the onus on the exploration company to prove or disprove the data. It also offers a policy framework that enables the custom landowners to be the direct financial beneficiaries of the scheme (potentially by taking a share in bullion rather than cash), with the national fiscal benefit to the State being derived from standard taxation arrangements over the custom landowners newfound source of revenue.

KEYWORDS: compensation, custom, Fiji, mining, option-pricing

TAKING AN INNOVATIVE APPROACH

In this paper, we build on prior research presented at the World Bank (Boydell and Baya, 2012) that explored how an equitable land resource compensation model could be formulated for resource rich developing countries, such as those in Melanesia, where the principles of customary land ownership are protected by constitutions and traditions alike. Drawing on international best practice, that research

concluded that a synergistic value approach (a valuation method more familiar to the valuation profession than mainstream economists) has more to offer in the context of land resource compensation in Melanesia (and potentially Africa).

Circumstances vary from country to country over rights to minerals under the land, with most constitutions in newly independent states following the Australian lead that minerals are vested in the Crown or State (noting the significant recent change of perspective proposed in Papua New Guinea to recognize the resource ownership of traditional landowners, per Chan, 2011). Although customary owners in Melanesia hold the superior interest in the land, current resource compensation models in Melanesia tend to follow the Australian example of merely compensating customary owners for the loss of access to traditional subsistence and spiritual recognition of the land (i.e., unimproved capital value, plus up to an extra 10% to reflect 'special indigenous value'). Such an approach overlooks the potential benefit sharing opportunities of optionality.

Our challenge to date with the synergistic approach has been the difficulty in quantifying the marriage value between the interests and options of the customary landowners and values of both the State and of the resource exploration companies who, hitherto, have benefited most from such arrangements. Likewise, natural resource exploration companies have options to develop a resource at a particular time or leave it until the value of the underlying asset (the mineral wealth) increases on the commodities market. In financial terms, these undeveloped reserves can be considered as 'call options'. Whilst it is relatively easy to articulate the various heads of resource compensation claims under the synergistic model, hitherto a value has not been placed on the underlying asset - the natural resource (based on the estimated quantity and price of the resource, less extraction costs).

Whilst option-pricing theory is not a new concept, its application to sharing the benefits from the exploitation of land-based resources on customary land offers an innovative approach. Option pricing theory has made vast strides since the publication of the Black and Scholes findings (1972, 1973). In this paper, we test a series of option pricing models to determine the synergistic value of an option to exploit gold and copper reserves on customary land in the Namosi Highlands of Fiji. Our modeling demonstrates the potential for more equitable sharing of benefits to the landowners and the State, whilst enabling greater investment security for the resource exploration companies through minimized conflict and enhanced environmental protocols.

POLICY RELEVANCE

Current models of land resource compensation are commonly based on royalties paid by exploration companies to the State, with a partial allocation to customary owners augmented by facilitation gratuities to key chiefs or 'big men' (Boydell and Baya, 2012). Such models often lead to conflict between custom landowners and the State, with resultant uncertainty (and risk) for the exploration company.

An equitable land resource compensation model (one that shares the benefits from the exploration of land based resources between the stakeholders) reduces risk for the State and provides improved certainty for both the mineral exploration company and the customary landowners. A synergistic compensation model, informed by option pricing theory that is grounded on the anticipated quantity / quality of mineral reserves, the market value of the commodity, and the cost of extraction, affords increased transparency about the entire process. The process incorporates the four dimensions of a resource exploitation partnership between customary landowners (and their representatives), the State and the Mining Company: from prospecting, to extraction, to market, to environmental make-good.

Hitherto, developing country governments have often lacked the technical capacity to provide a realistic estimate of resource returns. Similarly, government officials in traditional societies may lack the aggressive negotiation skills required to broker an equitable deal between the custom landowners (who risk relocation in the 'national interest', given that their land may be damaged/destroyed through the resource exploitation) and the international resource exploration companies (who predominantly hold the key information, knowledge, money and power in such arrangements). A synergistic compensation model that engages option-pricing theory, offers a key transparent negotiation tool for all parties. Informed by publicly available data, it places the onus on the exploration company to prove or disprove the data. It also offers a policy framework that enables the custom landowners to be the direct financial beneficiaries of the scheme, with the national fiscal benefit to the State being derived from standard taxation arrangements over the custom landowners newfound source of direct revenue associated with the marriage value of interests.

METHODOLOGY

Our research design is one of phenomenological transdisciplinarity, which implies our goal is to build models to connect theory to observed reality, allowing us to inform potential policy outcomes.

The theory is grounded in option pricing models developed by Damodaran (2012), drawing on Black-Scholes (1972, 1973) assumptions, and the binomial models of Geltner et al. (2007) that incorporate Samuelson-McKean formula and Black-Scholes assumptions (with Fisher-Margrabe extension). We test these theoretical models in a range of scenarios in the observed reality of gold and copper reserves in the Namosi Highlands, Fiji.

In the following sections we: (a) provide background to the option pricing literature, (b) offer context for our Fiji based case study to test the model, (c) use publically available data, verified by the Department of Mining and Mineral Resources, to simulate the value of gold and copper 'option', before we (d) draw analysis from the option scenarios to demonstrate both the benefits to the key stakeholders and the importance of short-term mineral exploration/extraction licensing agreements.

BACKGROUND TO OPTION PRICING THEORY

In the context of land based resources, an option is a contract in which the option writer (e.g. the customary landowners, or State on their behalf) gives an exploration company the right, for a certain sum of money, to extract a certain volume of minerals at a fixed (or variable) price within a specified period. Our research contributes to the literature by using option pricing theory to more accurately forecast the potential synergistic value created by the exploitation of land based resources. It adapts, evolves and explains the findings of recent modeling to recommend equitable stakeholder benefit sharing in the context of customary land.

The concept of optionality is not new in property. Property rights in leases have always contained options (to assign, surrender or renew, a point recognised by Geltner et al., 2007) as has the notion of development, albeit the property rights to those options are often tempered by planning policy or building regulations.

The straightforward definition of an option (Ong and Brown, 2001, np) is "a contract in which the option writer "or seller" gives the buyer the right, for a certain sum of money, to buy from/sell to the writer a specified number of assets at a fixed price or exercise price within a specified period". Ong and Brown attribute the term real options to Myers (1987), real options being embedded implicitly in strategic investments and referring to decisions concerning real or tangible assets. Myers highlighted that "it's

impossible to forecast most projects actual cash flows accurately. DCF calculations do not call for accurate forecasts, however, but for accurate assessments of the mean of possible outcomes" (p.11). He went on to say (p.13) that,

> Option pricing methods hold great promise for strategic analysis. The time series links between projects is the most important part of financial strategy. A mixture of DCF and option valuation models can, in principle, describe these links and give a better understanding of how they work. It may also be possible to estimate the value of particular strategic options, thus eliminating one reason for the gap between finance theory and strategic planning.

An arguably more coherent definition of real property options is offered by Patel et al. (2005, p.7)

> Real property options opportunities (and possibly implicit commitments) to acquire or develop or dispose of property (link) real assets at an investment cost determined (or estimated) in the present with the benefits (future rents or Property Sales) delivered in the future.

Whilst a number of examples have been developed, such as Titman's (1985) parking lot example, much of the work errs on the econometric (Ott, 2002) rather than taking a heterodox approach at the nexus of the legal, sociological and environmental reality of mineral resource extraction.

Damodaran (2012, p.87) actually engages the use of the word 'right', in that an option

> Provides the holder with the right to buy or sell a specified quantity of an underlying asset at a fixed price (called a strike price or an exercise price) at or before the expiration date of the option. Since it is a right and not an obligation, the holder can choose not to exercise the right and can allow the option to expire.

He goes on to acknowledge that option pricing theory has made vast strides since the publication of Black and Scholes (1972, 1973) papers. According to Damodaran (2012, pp.89-90) the value of an option is determined by six variables that relate to the underlying asset (which, in the case of the scenario we are about to explore, is the customary land):

- Current value of the underlying asset;
- Variance in the value of the underlying asset;
- Dividends paid on the underlying asset;
- Strike price of the option;

- Time to expiration on the option; and,
- Riskless interest rate corresponding to life of the option.

Damodaran is of the view that the valuation models developed for financial assets are applicable for real assets as well in that they share several common characteristics, "the value should be determined by the cash flows they generate, the uncertainty associated with these cash flows, and the expected growth in the cash flows" (2012, p.739). Of particular relevance to our research is Damodaran's model of natural resource options, to which we will return shortly after explaining the context of our particular scenario.

THE RELEVANCE OF APPLYING OPTION PRICING THEORY TO RESOURCE COMPENSATION – A MELANESIAN CASE STUDY

There is a growing acceptance (Cole and Ostrom, 2012, p.37) that "economists, legal scholars, and other social scientists continue to rely on simplistic, outmoded, and incomplete models that fail to capture the variety and complexity of property arrangements found throughout the world". What we want to do is build on prior research presented at the World Bank (Boydell and Baya, 2012) that explored how an equitable land resource compensation model could be formulated for resource rich developing countries, such as those in Melanesia, where the principles of customary land ownership are protected by constitutions and traditions alike. That work was an evolution of a two-year research project working with landowners and governments in Melanesia, where we drew on a detailed analysis of both institutional arrangements and stakeholder interpretations, combined with insights from other jurisdictions, to explore and analyze a range of potential compensation models. We concluded, after drawing on international best practice, that a synergistic value approach has more to offer in the context of land resource compensation in Melanesia. Whilst it was relatively straightforward to identify the customary landowners 'heads of claim' that should be compensated in any mineral resource exploitation project, the challenge we faced was how to place economic worth on the interests of the parties in a way that was both transparent and equitable, as well as providing the potential of intergenerational equity for the long-term extinguishment of habitat and associated environmental remediation (drawing on dire environmental lessons from other exploration schemes in the region and internationally).

Spread over 30 million square kilometers of ocean, the developing countries of the South Pacific region share a combination of geographical, biological, sociological and economic characteristics. All have enduring traditional systems of customary land tenure (with 83 to 100% held in customary ownership),

that conflict with Western notions of land ownership (Hann, 1998, Paterson, 2001). In the resource rich countries of Melanesia (Papua New Guinea, Vanuatu, the Solomon Islands, and Fiji) exploration and extraction of minerals is an ongoing source of conflict between customary landowners, the government and offshore exploration companies. Papua New Guinea has the largest reserves and most developed resource sector, but has recently changed its policy regarding the ownership of mineral reserves that recognize and protect traditional landowners rights to mineral ownership on or under their traditional land and seabed. At the time of writing, significant reserves of bauxite, copper and gold have been identified in Fiji, while some $60 billion seabed nickel reserves are promised in the Solomon Islands.

As Adams et al. (2003, p.1915) highlight "conflicts over the management of common pool resources are not simply material. They also depend on the perceptions of the protagonists". Whilst it is a common assumption that policy relating to the management (and exploration / extraction) of natural resources is self-evident, there is a need to better understand the ways that different stakeholders understand the management problems in order to progress and effective dialogue. These values are the impressions that different individuals (or groups) formulate from their individual (or group) comprehensions of the settings and circumstances in which they are situated, and that understandably can differ from the impressions of those around them. To this end, "policy debates are often flawed because of the assumption that actors involved share an understanding of the problem that is being discussed" (Adams et al., 2003, p.1915). Policy debates therefore often ignore the fact that the assumptions, knowledge, and understandings that underlie the definition of resource problems are frequently uncertain and contested.

When economists offer specific prescriptions about collective choice – indicating which decisions are efficient, correct, rational, best, and socially preferred – we see truth claims from a particular discipline projected onto the individual and collective stage of contending expressions and contending created imaginings about what is the best for the future of those persons (and their descendants) responsible for these contested expressions and contested created imaginings. The pragmatist would challenge these truth claims by asking if those specific truth claims can be justified to all members of that particular community (Bromley, 2006, p.138).

Boydell and Baya (2012) highlight that there is a large body of international literature on economic valuation and resource management, and ecosystem valuation. Much of the resource valuation literature takes a *Total Economic Value* approach, where values are allocated to *use* values (direct and indirect) and *non-use* values (option value, quasi-option value, bequest value and existence, or psychic, value). The valuation techniques engaged in these *use* and *non-use* approaches are those applied by economists (as

opposed to valuers), and include: Effect on Production; Replacement Costs; Damage Costs; Travel Costs; and, the Contingent Valuation Method. These have been variously applied on a range of international situations, with varying success. We consider that, because of the inputs required and the outputs desired, they all fall short of addressing valuation for land resource compensation in a Melanesian context – a point reinforced by Pascual et al. (2010, p.229) highlighting the lack of local research capacity may result in a lack of awareness of valuation methods, and complicated by different value concepts held by mineral exploration companies and the customary landowners.

In our earlier work (Boydell and Baya, 2012) we established that the synergistic value approach has more to offer in the context of land resource compensation in Melanesia. As a valuation method more familiar to the valuation profession than mainstream economists it is easier to engage on the ground, given that land compensation issues are dealt with by valuers representing the parties. The synergistic value approach (also known as marriage value) takes a more holistic approach, engaging with the economic benefits that are gained from providing a mining infrastructure in multiple locations not just at the extraction site, including access to inner reef and marine areas (or, for example, providing a mineral exploration company access to reclaim an area for a wharf facility with associated jetty). It has the ability to be adapted and expanded to also include items that relate to both the positives (e.g., partnership, employment, service sector and food supply, environmental conservation and cultural heritage), as well as the negatives (e.g., potential loss of access, environmental contamination, sedimentation, eutrophication, reef degeneration, loss of amenity / privacy, loss of cultural heritage). We earlier (Boydell & Baya, 2012) recommended that the quantum of compensation will need to be determined on a case-by-case basis, with the synergistic value between the mine, mining infrastructure, depot / wharf and the marine area forming a main component on which to base the negotiated agreement. The valuation components that are derived through this process will produce a much clearer indication of the overall compensation quantum of the compensation package. This package should have regard for the benefits accruing from the scheme (if any), such as employment opportunities, food and service provision, training, and the current package of notionally goodwill items (such as village benefits, medical fees, schooling, donations and material items e.g. boats / vehicles).

The challenge that we have had with the synergistic approach is attempting to quantify the marriage value between the interests and options of the customary landowners and values of both the state and the mineral resource exploration company who, hitherto, have benefited most from such arrangements. Likewise, natural resource exploration companies have options to develop a resource at a particular time or leave it until the value of the underlying asset (the minerals) increases on the commodities market.

These undeveloped reserves can be viewed as 'call options' (Damodaran, 2012, p.796). Whilst it is relatively easy for us to articulate the various heads of claim under our synergistic model (using the International Valuation Standards), hitherto we have not placed a value on the underlying mineral asset based on the estimated quantity and the price of the natural resource less the costs to exploit.

Conveniently, Damodaran provides an example of an oil reserve, which can easily be adapted to a scenario where the underlying asset is the value of the estimated copper and gold reserves, based on the market price of refined gold and copper. Acknowledging that there is a major cost associated with prospecting, development, extraction, transportation, refinement, marketing, and sale of the mineral resource, as well as an environmental liability for site remediation post extraction, the traditional approach is to assume the difference between the estimated reserves and the cost of the development is the profit to the exploration company, less any royalties they have to pay either to the state or the customary landowners. Damodaran refers to the 'owner of the resource', but (as we elaborate in the next section) this is a contested issue, with customary owners not differentiating between the land surface and the resources above or below it. By identifying the level of surplus anticipated (over and above the recoverable exploration-extraction expenditure associated with the prospecting-to-market sale continuum and business return to the exploration company) we are better placed to provide the basis of the marriage value from the interests of the landowners with those of the exploration company as the basis of our synergistic valuation.

Having provided some context, it is appropriate to interrogate the theory through the lens of a contemporary natural resource option. To illustrate the application of option pricing theory in the determination of synergistic value we offer the example of a 723.5 km² mining tenement 30 km west of Sua, Fiji's capital on the island of Viti Levu. The government of Fiji granted the mining tenement to a resource exploration consortium known as Namosi Joint Venture (NJV). NJV is "a joint venture between Newcrest (Fiji) Limited (Newcrest), Nittetsu Mining Co Ltd, and Materials Investments (Fiji) Ltd (Mitsubishi). Newcrest's interest is 69.94% and it is the operator and manager of the NJV" (Newcrest Mining Limited, 2012, p.1). The valuation modeling that follows relies on publicly available data from the Newcrest website, gold price data, the Reserve Bank of Fiji, and the Economist (amongst others). Newcrest have identified more than 15 significant copper and gold prospects within this particular tenement.

Natural resource companies, such as Newcrest, are able to generate cash flows from their existing reserves but it is their new explorations that have potential optionality. The option to develop is much

more likely for undeveloped reserves if the price of the resource (in this case gold and copper) increases, as witnessed by the significant increase in gold prices over the last decade and most significantly the market escalation since the global financial crisis.

Drawing on the work of Damodaran (2012, pp.796-803), in a natural resource example like the Namosi,

> The underlying asset is the natural resource and the value of the asset is based on the estimated quantity and the price of the resource. Thus, in a goldmine, the underlying asset is the value of the estimated gold reserves in the mine, based on the price of gold. In most such investments, there is an initial cost associated with developing the resource; the difference between the value of the estimated reserves and the cost of the development is the profit to the owner of the resource.

As detailed above, there is a need to clarify what is meant by ownership in the resource from a customary perspective. In the Fiji context, there has been a tendency to grant exploration licenses based on the promise of a share of the return coming to the State by way of royalties, the assumption of increased trade and employment, and the associated spin-off benefits to service providers. Conversely, ownership in the way that Damodaran articulates it relates to ownership of a set of property rights associated with exploration and mineral resource removal from the site. It is not to be confused with the inalienable rights of the customary landowners. Rather, these interconnected and overlapping 'rights' offer a framework for compensation to the customary landowners who, through (in the case of Fiji) the iTaukei Land Trust Board (iTLTB) as trustees for the customary landowners are the potential gatekeepers of the opportunity to 'marry' the rights of the parties.

Since political independence, the status of Fiji's vibrant constitutional history is well documented. Counting Fiji's first Constitution of 1970, recent procedural developments include (at time of writing) the facilitation of a constituent assembly a new constitutional draft. Once assented, the proposed document, earmarked for 2013, will be its fourth constitution in 33 years. The 1997 Constitutional document was suspended in December 2006 and abrogated in 2009 (Fiji Times, 2009).

As McLeod and Naidu (1998, pp.6-7) explain,

> In Fiji the state is legally sole owner of all mineral resources and therefore entitled to the royalties paid as economic rent on the exploitation of the resource. However, landowners believe that they own all the land that is above and below the land including the minerals. As a concession to this belief part of the royalties in Fiji are paid to the government and

part are given to the landowners.

The confusion over landowners surface and subsurface land rights in Fiji is elaborated on by Niumataiwalu (2009), who explains that the Fiji Constitution of 1997 (and subsequent amendments) did not clarify the distinctions of customary ownership from the earth's core to space in regards to mineral royalties and compensation. At the time of writing (February 2013), in the absence of a Constitution in Fiji, all laws remain the same unless wholly or parts of pre-existing law are specifically stated to be otherwise through a decree. In the absence of a decree, the presence of customary ownership and its recognition in the residual laws is in a state of flux.

Despite the manner of changes, the Constitutional provisions (1997) safeguarded private property rights ownership against deprivation without just (equitable) compensation including the definition of 'property' under s.40(3) to include 'interest in property'. This, the section qualifies, must be done in accordance with a law and is permissible for public purposes only. In addition, it enshrined under s.6 non–justiciable compact articulating principles of the conduct of government that includes *inter alia* due regard to the ownership of customary land according to Fijian custom. More specifically, s.186 offers precise treatment, under the heading 'Customary Laws and Customary Rights' obligating parliament that it [m]ust make provisions granting the owners of land or of registered customary fishing rights owner equitable share or royalties or other monies paid to the State of rights to extract minerals from land or sea be[d]. The extent to which this enabling provision was further developed and implemented is unknown although a working committee comprising various industry stakeholders to review of the compensation provisions of the Mining Act (1978) was initiated in 1999 (McLeod, 2000a).

As stated, between constitutional transition and barring any specific annulling decree, all laws remain the same. Fiji presently resorts to the currency of its Mining Act (1978) and associated regulations in all dealings with matters pertinent to mineral resource developments. Considering that the current Act is largely a scion of its colonial past, this does not preclude the opportunity to continually improve ways of host economic retention from the increased mining interest through policy level developments (see, for example, McLeod, 2000b and, McLeod, 2000c). This must include advice on acceptable standards of pro-development equitable compensation options that considers the inclusive nature and extent of customary ownership and overall environment considerations at the same time seeking to improve the economies of scale nationally.

In contrast, Papua New Guinea's current mining stance is proactive through utterance of the Mining Minister, Hon. Byron Chan, towards the full recognition of ownership of minerals by customary owners rather than the State. In a speech in 2011, the Minister pointed to the fact that the constitutional premise

of PNG was in fact shared at source from its colonial ties with Australia, where most of its laws including property ownership of minerals and extractive resources were mere reception of its colonial past (see Chan, 2011 and analysis from, Arvanitakis and Boydell, 2011). The colonial premise of unoccupied land and the international law concept of *terra nullius*, was proven otherwise in Australia by Mabo and Others v State of Queensland (No. 2) (1992). According to the Hon. Byron Chan (2011) Papua New Guinea has a contrasting history and therefore cannot continue to perpetuate the distinction between customary ownership of land as different to that of minerals. Owing to the inclusive nature of customary title, the two accordingly are inseparable and must be treated as one. Whilst mining companies are understandably jittery of this development, vesting ownership of minerals to customary owners may least affect tax and other huge revenues from the mining boom to the State.

Perhaps the interesting constitutional development and resulting resource laws are to be expected in the case of the Autonomous Region of Bougainville, Western island province of Papua New Guinea (formerly known as Northern Solomons). Richly endowed with minerals, the island region attracted global attention in its fight for better compensation from the island copper and gold mine (Panguna) that started in the 1960s that erupted into a civil war in 1988-1989. From the experiences and lessons learnt, since achieving political autonomy status in 2000 there is an expectation of a comprehensive pro development equitable compensation regime that would complement customary incidents of ownership of land and minerals.

SCENARIO ANALYSIS – GOLD & COPPER RESERVE

To bridge the gap between the current situation where customary landowners, the iTaukei Land Trust Board as the trustees, and the State are poorly compensated for mineral resource exploitation, we decided to test the veracity of option pricing models to provide an economic proxy for synergistic value. Our purpose was to test the efficacy of option pricing as a bridge between unjust and equitable compensation.

Our starting point was in the work of New York-based professor Aswath Damodaran who teaches corporate finance and the valuation at the Stern School of Business at New York University. As mentioned, he offers an illustration of valuing am Oil Reserve in explaining the modeling of natural resource options (Damodaran, 2012, pp.796-804) with his Excel spreadsheet available freely from his website (see http://people.stern.nyu.edu/adamodar/New_Home_Page/spreadsh.htm#optinval <natres.xls> - A model that uses option pricing to value a natural resource company; useful for valuing oil or mining

companies). We cross-reference this approach with the work of Geltner et al. (2007, in particular Chapter 27: Real Options and Land Value). Like Damodaran, Geltner et al. offer a series of Excel models for real options and the call option model of land value and optimal development. Included in the Excel file are a simple option valuation model, a binomial model, a perpetual horizon model, and a continuous time formula (the Samuelson-McCain formula). By utilizing the same parameters, probabilities and input data, we found that both spreadsheet files (and their multiple variants) produced consistent results.

Whilst natural resource companies rely on the cash flows from existing reserves, they are more likely to extract from undeveloped reserves if the price of the resource (e.g. gold copper) increases. The value of the underlying asset is based on the estimated quantity and price of the resource. In our Namosi example, we relied on publicly available data (sourced from Newcrest Mining Limited's own site, the published price of gold, and extraction costs for gold sourced from the Economist, and relied on Fiji government infrastructure bond prices as a proxy for risk – including political, currency and site). It is understood that NJV mining tenement represents a 900,000,000 ton copper and gold resource, with an anticipated yield of 0.43 g of copper per ton and 0.14 g of gold per ton. This indicates a potential 387 tons of copper and 126 tons of gold. Interestingly, whilst Namosi has always been referred to as a copper resource, based on published data there is only around $4.4 million worth of copper at prevailing prices, wheras given the expectation that extraction costs will be around $4 billion, the real value of this natural resource lies in the gold, which has an estimated current market value of around $6.25 billion.

All of the models we engaged dealt with similar inputs, namely the available reserves of the resource, an estimated value of extracted resource at current market prices, the estimated cost of developing the resource, the time to expiration of the option, the variance in value of the underlying mineral asset, and the cost of delay. For the purposes of this research, we modeled the values in July 2012, using data available at that time, when there was parity between the US$ and the Australian$. At the time of finalizing this paper (February 2013) the value of gold has increased slightly, as has the AUD$ against the US$. Similarly, the latest release of Fiji Infrastructure Bonds (05 September 2012) is marginally more secure than the July release we initially modeled. Given that we have used Australian gold prices (being, as we are, a Sydney based research center) and reviewing an Australian led Joint Venture Exploration Company, a case could be made for adopting the Australian 10 year bond rate as a proxy for risk. This has increased in recent months to around 3.6% compared with the US 10-year bond rate of 2.028% yield. Just as the gold price is at a relative ten-year high, likewise 10-year bond rates are at a relative low (serving as a proxy for the risk free rate).

We also ran our models through a Monte Carlo analysis in proprietary Crystal Ball software to simulate the probabilities and relative accuracy of the inputs and variables. With the caveat that we have conducted this analysis and simulation as purely a research exercise, as opposed to commissioned professional advice or as a formal consultancy, our findings are indicative that there could potentially be a significant synergistic value liberated by the extraction of the gold in the identified copper and gold resource at Namosi. We include our adaptation of the Damodaran model in Appendix 1, by way of example only.

FINDINGS AND COMMENTARY ON A POSSIBLE COMPENSATION FRAMEWORK

The time duration until the rights in the resource will be relinquished is a highly sensitive variable in option pricing models. For example, using our preliminary calculations based on publicly available data we estimated the value of the natural resource option for the Namosi to be around US$1.8 billion (FJD$3.4 billion) after all extraction costs and expenses on the basis of a 5-year Option. If the length of the Option is extended to a more realistic 10 years (refer Appendix 1), this figure reduces to US$1.5 billion (FJD$2.8 billion), this figure being based on the value of the gold only (as the impact of the copper reserves appears negligible at around US$4 million, based on estimated volumes and prevailing market rates).

Using our synergistic (marriage) value approach, as a starting point for negotiation you could assume a 40% share of the profits (the synergistic value of the surplus) for NJV, a 20% allocation into an environment fund (realizing that with the best will in the world there will be significant environmental damage from this project given that a mountain will effectively be removed in the process of extracting the gold and copper), and a 40% share to Fiji.

In our initial calculations, we divided this 40% Fiji share into a 10% management fee for iTLTB (the standard management fee charged by the trustees in dealing with customary land in Fiji), with 90% of the Fiji share going to the landowners on the basis (using the PNG example) that this amount would be taxed by the government (notionally at 23%), rather than the government receiving a direct royalty. On this basis (and assuming a 10 year option), we estimated a revenue for the iTLTB to be in excess of US$60 million (FJD$113 million), US$125 million (FJD$234 million) to the government in tax (which is presumably more than any current estimate of royalty payment which would have to be shared with the landowners and cover damage costs to the environment) and a potential return to the landowners of

around US$420 million (FJD$785 million), assuming all current mineral reserves are removed within a 10 year option period. All figures are based on July 2012 data, when there was approximate parity between the US$ and the AUD$.

This can be summarized as:

- US$1.5 billion (FJD$2.8 billion) = Synergistic value based on option pricing theory and publicly available data about Namosi Joint Venture, extraction costs and gold value
- US$606 million (FJD$1.13 billion) = 40% NJV share (which is the investor share of gross profit, representing a 36% margin on revenue, a 27% investor share of gross profit, and a 25% hurdle rate or internal rate of return on shareholder equity)
- US$303 million (FJD$566 million) = 20% into Environmental Protection Bond / Trust
- US$606 million (FJD$1.13 billion) = 40% Fiji share

We suggested that the 40% Fiji share could be allocated as follows:

- US$60 million (FJD$113 million) = iTLTB management fee (i.e. 10% of Fiji share)
- US$546 million (FJD$1 billion) = Gross income to customary landowners (i.e. 90% of Fiji share) to be taxed at 23%
- US$124 million (FJD$234 million) = Government Taxation Revenue (based on 23% of gross landowner income)
- US$420 million (FJD$785 million) = net proceeds to Landowners, presumably to be managed on their behalf in trust by iTLTB

CAPACITY BUILDING AND KNOWLEDGE TRANSFER

Our goal in this research was to find a better way of determining the synergistic value associated with resource development on customary land. We have used option-pricing theory as the best proxy available to calculate the benefits from the exploitation of land based mineral resources, and proffered an example of how they could potentially be shared. We have identified four key findings from this research, which we discuss below, that relate to both capacity building and knowledge transfer. The findings have informed policy advice locally in Fiji, and the modeling is currently being expanded to test stakeholder values associated with land-based resources in the Solomon Islands, Papua New Guinea and the

Autonomous Region of Bougainville. The research team is also in discussion with a range of resource stakeholders in several African countries.

Importance of the length of the Option: From the perspective of a developing island country like Fiji, this represents significant amounts of money to the stakeholders. It is critical to note that if long leases (i.e. 30-99 years) are granted, all of this benefit potentially goes to NJV and is essentially lost to the state, the iTLTB, and most importantly the customary landowners. Given the time preference of money, changing the period when the rights to resource would be relinquished by NJV from say 5 to 30 years reduces the figures by 70%, and if you change it from 5 to 99 years, it reduces the figures by 97%. The example we provided is based on a 10-year option. It was evident that the assumption of a five-year extraction license was unrealistic, as it will probably take 3 or 4 years to put the base infrastructure in place for a scheme like Namosi. This means Namosi may have 5 or 6 years productive capability during the first term of the a ten year extraction license. At this stage we have not other 'options' for years 10 to 15 (i.e. a 10+5 option), 15 to 20 (i.e. a 10+5+5 option), and 20 to 25 (i.e. a 10+5+5+5 option), as it all becomes a little hypothetical at that stage without richer geotechnical information and enhanced statistical capability to model the various probabilities, risks, and uncertainties. There needs to be appropriate remuneration for that level of site-specific research endeavor.

Option pricing theory is only a starting point: We would suggest that option pricing theory is only a starting point in that it presents the best proxy of synergistic value for a mineral resource scheme thus far. Option pricing theory is not without its significant limitations, and as Mandelbrot and Hudson (2004, pp.268-271) highlight, there has been significant research undertaken on studying the errors in the Black-Scholes model, with many attempting to just fix the underlying formula. However, and far more importantly, what we have demonstrated by using publicly available data should be sufficient for the State, Landowners and their Trustee (in Fiji, the iTaukei Lands Trust Board) to realize that hitherto they have been failing to maximize the return to Fiji from resource exploitation projects, such as the copper / gold reserve in Namosi, whilst ensuring significant environmental remediation funds are also secured. Rather, we see the benefits of the option pricing model proffered as a proxy for determining the synergistic value as the basis for bringing the stakeholders together to progress serious and mutually beneficial negotiation around the ramifications of site / project specific resource exploitation. The figures that we have used, whilst based on publicly available data, are produced for research purposes only and thus are indicative only.

Send in the dogs: Given the potential revenue that the iTLTB and the government could derive just from

this one mineral example, the trustees and the state really cannot afford not to invest money to fully research this matter properly. With the identification of more resource options across Fiji, there is a desperate need for the iTLTB (and landowner representative in other countries) to build valuation and negotiation capacity in this area. What is important is that the mining companies who completely dominate the political landscape in a country like Australia, and are attempting to do likewise in Fiji do not take Fiji for a ride. In the Fiji context, it is our view that the iTLTB needs to maximize the return to customary landowners on these resources and take leadership. Hitherto in the Pacific there has been a reliance on donor funding in Pacific island countries, and this ties in with the 'sustainable mining' support of AusAID. However, such a handout mentality is inappropriate when a country is sitting on a $6 billion gold reserve (which is just one of many current resource explorations / exploitations underway in Fiji). From a western commercial perspective the situation was simple. The base return that the customary landowners, iTLTB and the State require is determined (e.g. based on the synergistic value), and the iTLTB as commission an aggressive negotiating team to represent the interests of the customary landowners (and the State, as fiscal beneficiary) in the (inevitably protracted and heated) discussions with the mining company. The landowners / State team is remunerated on a percentage of the margin they achieve over and above the base return. Essentially, the landowners need a 'pack of dogs' who will fight with the 'pack of dogs' representing the mining companies interests. There is obviously a significant trust issue in such an arrangement, and the dogfight is clearly representative of low culture society (and thus outside the traditional understanding of how to deal with people in a high context society like Fiji).

Compensate in gold, not cash: This suggestion may be seen to undermines the validity of option pricing theory other than its ability to provide a proxy for value and compensation that has hitherto been absent. It relates to a simplification of the whole process. Simply stated, forget monetary compensation. Monetary compensation brings in all kinds of risks relating to ease of access, time, variation in gold price, and international currency risk for all stakeholders. Instead, you acknowledge the fact that Fiji (i.e. the customary landowners and the State) is currently sitting on what is estimated to be a US$6 billion gold reserve with approximately US$4 billion of extraction costs. Those figures are at today's value, in other words they encompass all sorts of assumptions on the time preference of money and the basis of valuation being 'as at now'. Instead of compensating in monetary terms, the parties agree to the synergistic value being, by way of example, say 40% NJV/ 20% Environmental Bond / 40% Fiji of the gold bullion and agree for all compensation to be paid in gold bullion rather than cash. Realistically, based on earlier figures, the percentage of gold being kept in Fiji would have to be negotiable and ultimately this depends on how good the 'dogs' Fiji uses to negotiate are. Gold is easy to monitor assuming that the gold is smelted on site, as a small team could provide observer status every time gold is poured. Obviously there

would need to be secure storage for the gold reserves, be it in the vaults of the Reserve Bank of Fiji or overseas. Either way, with that level of gold reserves in a vault the country would be able to raise capital for future development independently of donor aid, relying instead on using the gold reserve as equity. Likewise any risks associated with the volatility of the gold price are negated. The gold is not necessarily sold by Fiji, and a percentage of the intergenerational value of the mineral resource stays in country, potentially in perpetuity. This allows for future remediation work in terms of the inevitable environmental damage (especially if there is pressure to slow down production due to a change in demand for gold internationally, or speed up production and refinement using major dangerous contaminants.

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**APPENDIX 1: VALUING A NATURAL RESOURCE OPTION**							GOLD	NAMOSI									
2			This spreadsheet calculates the value of a natural resource option.															
3		**Assumptions**																
4		1. All the assumptions underlying the Black-Scholes model apply					**NOTE**: This option pricing model is originated from DAMODARAN, A. 2012. Investment valuation : tools and techniques for determining the value of any asset, Hoboken, N.J., Wiley (pp.796-804), and the Excel spreadsheet available freely from his website (see http://people.stern.nyu.edu/adamodar/New_Home_Page/spreadsh.htm#optinval <natres.xls> - A model that uses option pricing to value a natural resource company; useful for valuing oil or mining companies). We cross-reference this approach with the work of GELTNER, D., MILLER, N. G., CLAYTON, J. & EICHHOLTZ, P. 2007. Commercial real estate analysis and investments, Mason, Ohio, Thompson South-Western (in particular Chapter 27: Real Options and Land Value). Like Damodaran, Geltner et al. offer a series of Excel models for real options and the call option model of land value and optimal development. Included in the Excel file are a simple option valuation model, a binomial model, a perpetual horizon model, and a continuous time formula (the Samuelson-McCain formula). By utilizing the same parameters, probabilities and input data, we found that both spreadsheet files (and their multiple variants) produced consistent results. We also ran our models through a Monte Carlo analysis in proprietary Crystal Ball software to simulate the probabilities and relative accuracy of the inputs and variables. The model has been adapted by SPIKE BOYDELL and ULAI BAYA (both of UTS: APCCRPR), with assistance from PAUL ZAHARA (of Cedar Hill Pty Ltd / UTS), <u>for illustrative purposes only</u> in respect of their research for a World Bank Land and Poverty 2013 paper (and should be read in conjunction with that Boydell & Baya paper). It is included as a appendix to that paper with the caveat that we have conducted this analysis and simulation of gold reserves in a copper and gold resource in Namosi, Fiji, as purely a research exercise, as opposed to commissioned professional advice or as a formal consultancy. The publicly available data was sourced in July 2012, which was the notional date of this simulation.											
5		2. The estimated reserves of the natural resource are known.																
6																		
7		**The user has to input the following variables**																
8		1. Present value of estimated reserves, net of royalties and marginal costs.																
9		2. Variance in the price of the natural resource.																
10		3. Present value of the cost of developing the natural resource.																
11		4. Riskless interest rate that corresponds to relinquishment period.																
12		5. Length of the relinquishment period on resource reserves.																
13		6. Expected annual after-tax cashflow from resource after it is developed.																
14																		
15		**Inputs relating the underlying asset**																
16		900,000,000	tonne open pit copper gold resource		Grams	Tonnes	Market Price July 2012		Gross Resource Value		Enter the estimated reserves of the natural resource =			126000000	(in units)	source	http://www.newcrest.com.au/projects.asp?category=6	
17		0.43	grams copper per tonne		387,000,000	387	$ 11,500	$AUD/tonne	$ 4,450,500								http://www.newcrest.com.au/projects.asp?category=6	
18		0.14	grams gold per tonne		126,000,000	126	$ 49.65	$AUD/gram	$ 6,255,900,000		Enter the current price of the natural resource, per unit =			$49.65	(in currency)	source	Market price source http://goldprice.org/gold-price-per-gram.html	
19		857	$cost to extract 1 oz gold			Convert oz to grams		28.35		$ 30.23	Enter the marginal cost per unit of extracting the natural resource =			$30.23	(In currency)		(source http://www.economist.com/node/187746240)	
20		21500000	cost to date	so cost to develop could be		10	times this =	$ 215,000,000										
21																		
22		Enter the standard deviation in the price of the natural resource (ln) =				5.03%	source: http://www.tradingnrg.com/wp-content/uploads/2012/07/Standard-deviation-Gold-price-forecast-silver-prices-outlook-2012-July-10.jpg							5.03%	(in %)			
23																		
24		Enter the estimated annual after-tax cashflow after developing resource =				100,000,000	After tax cash flow after developing the resource (hard to estimate?)				THIS seems to be the wildcard variable?			$100,000,000	(in currency)			
25																		
26		**Inputs relating to the option**																
27		Enter the present value of the cost of developing the resource option =												$215,000,000	(in currency)			
28																		
29		Enter when the rights to resource will be relinquished =			10	(note, a 5 year lease granted on Vatukoula - not clear for Namosi)								10	(in years)			
30		**General Inputs**																
31		Enter the riskless rate that corresponds to the option lifetime =				6.80%	15 year due date							6.80%	(in %)		Fiji Government Infrastructure Bonds 18 July 2012 source: Reserve bank of Fiji: http://www.reservebank.gov.fj/docs2/Advert%20-%20%2018%20July.pdf	
32																		
33	**VALUING A LONG TERM OPTION/WARRANT**																	
34	Stock Price=		**$2,447,011,111**		T.Bond rate=		**6.80%**											
35	Strike Price=		**$215,000,000**		Variance=		**0.00253009**				Background							
36	Expiration (in years) =		**10**		Annualized dividend yield=		**4.09%**				723.5	km2 mining tenement with >15 significant copper and gold propects already identified					source	http://www.newcrest.com.au/projects.asp?category=6
37											5.45%	6 year due date	Fiji Government Infrastructure Bonds 18 July 2012 source: Reserve bank of Fiji: http://www.reservebank.gov.fj/docs2/Advert%20-%20%2018%20July.pdf					
38											5.45%	8 year due date	Fiji Government Infrastructure Bonds 18 July 2012 source: Reserve bank of Fiji: http://www.reservebank.gov.fj/docs2/Advert%20-%20%2018%20July.pdf					
39		d1 =	17.07487359								6.26%	10 year due date	Fiji Government Infrastructure Bonds 18 July 2012 source: Reserve bank of Fiji: http://www.reservebank.gov.fj/docs2/Advert%20-%20%2018%20July.pdf					
40		N(d1) =	1								5.45%	Median bond rate - but nearest to life = 15 years						
41																		
42		d2 =	16.91581102															
43		N(d2) =	1		$ 1,841,754,666													
44					**US/AUD $**		FJD$											
45		Currency Conversion			1		1.8667						July 2012 source http://www.xe.com/ucc/convert/?Amount=1&From=AUD&To=FJD					
46	**Value of the natural resource option =**			**US/AUS $**	**$1,517,211,497**	FJD$	**$2,832,178,701**		$6,255,900,000	= AUD$million gross gold value (Revenue)								
47																		
48	**Value Sharing**			100%					$4,023,888,889	= AUD$million gross extraction costs								
49		NJV 40% share		40%	$606,884,599		$1,132,871,481											
50		Environmental Fund Share of Revenue		20%	$303,442,299		$566,435,740.26		$2,232,011,111	= AUD$million gross profit								
51		Fiji Share		40%	$606,884,599		$1,132,871,480.52											
52		iTLTB (10% of Fiji Share)		10%	$60,688,460		$113,287,148		36%	= Margin on Revenue								
53		Gross Landowners			$546,196,139		$1,019,584,332											
54		Tax to Govt (23% of Gross Landowner share)		23%	$125,625,112		$234,504,396		$ 606,884,599	=Investor Share of Gross Profit (AUD$)								
55		Net to Landowners			$420,571,027		$785,079,936											
56									27%	=Investor Share of Gross Profit (%)								
57									25%	= Hurdle Rate (IRR on Shareholder Equity)								

APPENDIX 1: Sample Option Pricing Model for Namosi Gold reserve, Fiji, source Boydell & Baya for this research

Using Property Trusts and Leases to support customary landowners

Resources:

- Boydell, S. & Baya, U. (2014) 'Using Trust Structures to Manage Customary Land in Melanesia: What lessons can be learnt from the iTaukei Land Trust Board in Fiji', paper presented at the Annual World Bank Conference on Land and Poverty 2014, The World Bank, Washington DC, March 2014. http://customarylandsolutions.files.wordpress.com/2014/03/boydell_baya_wb2014-paper.pdf

Integrating Land Governance into the Post-2015 Agenda
Harnessing Synergies for Implementation and Monitoring Impact
Annual World Bank Conference on Land and Poverty Washington DC, March 24–27, 2014

USING TRUST STRUCTURES TO MANAGE CUSTOMARY LAND IN MELANESIA: What lessons can be learnt from the iTaukei Land Trust Board in Fiji

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Abstract:

At a time when external influences seek access to customary land in Melanesia for commercial gain (including mineral exploration, forestry, palm oil, agriculture and tourism), we question what institutional arrangements best serve customary landowners in administering their land. Fiji has recorded genealogies since the 1880s and is, as a result, potentially better placed than its Melanesian neighbours. Commercially, Fiji has benefited from the establishment of the Native Land Trust Board (NLTB) in the 1940s as a quasi-governmental body that has administered all customary land in Fiji on behalf of indigenous groups. In 2011 the NLTB changed its name to the iTaukei Land Trust Board (iTLTB). The iTLTB employs 60+ professional staff, and has demonstrated in Fiji that leasing is an instrument that can render the freedom of doing business on customary owned land. We review the iTLTB using a research design of phenomenological transdisciplinarity. We find the iTLTB model offers a template that can be encouraged in wider Melanesia (rather than incorporated land groups), but its operation needs constant review in order to nurture aspects that assuage fear of loss of control from the landowners' perspective whilst assuring stability and certainty to potential investors.

Key Words:

Land Trusts, Incorporated Land Groups, ILGs, NLTB, iTLTB, leases, customary land, Melanesia

USING TRUST STRUCTURES TO MANAGE CUSTOMARY LAND IN MELANESIA:

What Lessons can be learnt from the iTaukei Land Trust Board in Fiji

Introduction

In indigenous cultures, there are two recognized paradigms in which land and property are managed in modern times. These are the customary and the western. This Plurality of Registers (Boydell & Baya, 2012) has to be navigated when attempting to articulate disconnected worldviews between indigenous values and capitalist interests. Where they meet, the inalienable notions of land held by the customary stewards (or guardians) are very much at odds with the commodity view of the West that emphasizes individual ownership. In this paper, we take an innovative approach by attempting to leave the customary structure intact whilst finding less disruptive options for how the two registers can evolve and overlap to satisfy a pro-development and economic growth agenda.

The notion of a land trust in the Melanesian context is to provide support to customary landowners (as a familial or tribal group) in formalizing the institutional arrangements that allow other users (prospective tenants) rights of access to utilize their surplus land productively. This support comes in a number of ways, first by providing *locus standi* or legal identity on behalf of a customary landowning group so that they can be recognized within western legal understanding (which is mainly an Anglo-Australian perspective in Melanesia). Second, some trusts (such as the iTaukei Land Trust Board in Fiji) provide legal, valuation, financial, lease management and spatial advice to the beneficiaries to protect their customary rights and share the returns that emanate from the surplus lands (land that is surplus to their subsistence lifestyle needs) that are owned by the beneficiaries of the trust. Other trusts structures, such as incorporated land groups in Papua New Guinea, do not offer this level of professional capacity to their membership and have to secure it externally. Third, the trust serves as a trustee for income received from the land, its reinvestment and equitable distribution to beneficiaries (after management and related expenses have been paid).

At a time when external influences seek access to customary land in Melanesia for commercial gain (mineral exploration, forestry, palm oil, agriculture and tourism), the question arises as to whom, or what institutional arrangement, should help customary landowners administer their land. Currently, limited, moderate or substantive solutions are available and these differ significantly from country to country. In the Solomon Islands, a Land Trust Board was established in 1962 to administer legislative provisions regarding vacant land, but these provisions were repealed under the Land and Titles (Amendment)

Ordinance 1964, which effectively made the Land Trust Board defunct. A voluntary trust arrangement is in place in the Aluta Basin to protect customary interests on land identified for future palm oil production (the first trust of its kind in the country) within the Noro/Munda area of Malaita, whilst the Kazukuru Land Trust Board in New Georgia remains contested. There is scope for the establishment of land trusts under the provisions of the Charitable Trusts Act (Cap.55) 1966, such as Sipo tribe in Western Province creating the Sipo Land Trust Board Charity.

In Vanuatu, there are currently only three formal trusts in place; the Mele and Ifira peri-urban trusts on the fringe of Port Vila, on Efate, and the Boetara peri-urban trust in Luganville, on Espiritu Santo (the latter being the subject of ongoing boundary litigation). Elsewhere in Vanuatu customary landowners are formalized into neither a trust nor incorporation, and are not professionally represented.

In Papua New Guinea, the Land Groups Incorporation Act (1974) enables custom owners to formalize as a legal entity, recognized by the Minister of Lands as the appropriate party in land dealings. Unfortunately, the system appears to have been abused, with examples of multiple parties establishing Incorporated Land Groups (ILGs) over the same land area, and major contention over misuse of the lease-leaseback provisions. There is a capacity challenge for the government to verify the genealogy of these groups. Changes to the legislation were made by the Land Groups Incorporation (Amendment) Act 2009, although there have subsequently been cases contesting the efficacy of the amendments.

In contrast, Fiji has recorded genealogies since the 1880s and is, as a result, potentially better placed than its Melanesian neighbors. Commercially, Fiji has benefited from the establishment of the Native Land Trust Board (NLTB) in the 1940s as a quasi-governmental body that has administered all customary land in Fiji on behalf of indigenous groups. In 2011 the NLTB changed its name to the iTaukei Land Trust Board (iTLTB) – and we use the names interchangeably in this paper. Whilst the NLTB / iTLTB has come under criticism over the years, it has some 60+ professional staff (comprising valuers, lawyers, lease managers, land surveyors, accountants, and negotiators) that have the requisite skills to manage customary land on behalf of the landowners.

The purpose of this paper is to critically examine the progressive approach towards the administration and control of customary land in Fiji since the inception of the NLTB / iTLTB, given the 'all and inclusive' *sui generis* nature of customary property. We identify some of the operational successes as well as shortfalls, to explain how the iTLTB is adapting to operational changes, given its onerous functions, in light of comparable developments in other common law jurisdictions. These operations are also discussed against the ever-increasing demands of its stakeholders in the new millennium, to contextualize

how effective it is as an institutional trust structure to act in the best interests of customary owners in the face of globalization and modernity.

Following the introduction, the paper is organized into 8 sections. We start by providing the historical context to land recording in Fiji after Cession to Queen Victoria in 1874, through to the establishment of the Native Land Trust Board in the 1940s. We then examine the efficiency and vulnerability of the Trust, and the challenges it has faced over the last fifteen years relating to agricultural leases, sugar production, agro-forestry and tourism, as well as what some see as the new opportunities associated with mineral extraction. We suggest that part of the challenge that a trust structure like the iTLTB faces is in dealing with the *plurality of registers* in navigating between high-context and low-context understanding of land, and how some customary landowners prefer to operate under informal extra-legal *vakavanua* arrangements.

Our analysis demonstrates that, in terms of land holding, leasehold structures are part of a solution that do not necessarily detract from customary ownership of land. However, one of the key roles of the iTLTB is in effective lease management and we have concerns that at an operational level, like other countries in Melanesia, the basis of rental, the terms of the lease, the handling of improvements, prevailing valuation approaches, and the protocols surrounding lease extension / renewal, are not serving the best interests of the customary landowners. We conclude by summarizing the lessons that come out of the iTLTB example, with our suggestions as to how current shortcomings may be addressed, so that other countries in the region can benefit from the iTLTB experiment.

Background

NLTB was created out of Ordinance 12 of 1940, enabling a statutory trust operating as the Native Land Trust Board, (CAP 134) today. The Act relates to the control and administration of native land prescribing the membership composition of the Board under s.3 and vesting control and administration of all native land to the Board per s.4. In essence, s.4 provides a bedrock undertaking by the NLTB in so far as leasing of native land, where legal ownership remains with the landowning units but control of it is transferred to and vested in the NLTB as decided by Cullian J in the matter of Waisake Ratu (No.2), see *Waisake Ratu No.2 & Another v Native Land Development Corporation and Native Land Trust Board, [1987] FJSC 9, [1991]35 FLR 116.* In that matter, the plaintiff sought damages, and won, arising from their eviction from native land following a grant by the NLTB of a development lease over the land. In essence, the Court

affirmed the view that within the boundaries of un-leased native land, the *Mataqali*[1] in this instance retains residual customary control and is free to cultivate and deal with that land according to customs.

On the other hand, CAP 133 comparatively has earlier existence in its terms of provenance, resulting from the logical progression that the Act relates to native land tenure: a matter that preoccupied the colonial administration thinking since its early days in trying to understand customary land situation and in devising a hybrid system to provide some orderly facilitation of its interests in Fiji. From Ordinance 11 of 1905, the Act denotes that native land classification under s.3 as those that shall be held by native Fijians according to native customs as evidenced by usage and tradition. This Act also enunciated the creation of the Native Lands Commission that was sanctioned to ascertain what lands in each province in Fiji are rightful and hereditary property of native owners whether under the Mataqali or under other subdivisions that it may be held. It would follow that the book or register of landowning unit living members, known as the *iVola ni Kawa Bula* (VKB), was an offshoot from this exercise, which mandated the listing of all customary landowning units' membership that held land according to native custom.

In 1949, Fiji passed the *Native Lands Act,* [CAP 133] the culmination of a process set in motion between 1884 and 1926 when the Native Land Commission (NLC) had official sittings around the islands to determine native land titles, which constituted the recorded owners of Fijian land. Close to 88 per cent of the land had customary owners speaking on behalf of their respective *vanua*[2] through connection, adducing sworn verbal submissions to the Commission. With the assistance of cartographers who accompanied the Land Commissioner, the entire land holding structure of Fiji was spatially imaged.

Land that appeared to be 'ownerless' (because the owners were absent or deceased) was placed in Schedules A and B, and held in Trust by the then Crown on behalf of the Fijians (*iTaukei*) as *bona vacentia* holdings (i.e. unclaimed estates or ownerless land, a legal concept associated with property which does not have an owner). These formed the remainder of the landmass of Fiji, together with land that was alienated prior to the establishments of the Colony (pre 1874) and successfully claimed by owners (who were mostly foreigners) in the first land Commission (after 1874). This alienated land forms the basis of the land with freehold title that endures today.

[1] The *Mataqali* is a clan or sub tribe, and is the operational unit of a *vanua.*
[2] The Fijian word *vanua* has many meanings in the vernacular, but we use it here to describe the extent of the
[2] The Fijian word *vanua* has many meanings in the vernacular, but we use it here to describe the extent of the customary estate / land holding as recognized and recorded in the 'Book'. Vanua – the traditional homeland, comprising land and waters that form the socio-economic and political extent of a chiefly reign and control.

As part of the process of recording ownership of land, the Native Land Commissioner also noted the genealogies of the customary owners of the land. Today, the resultant record book, *iVola ni Kawa Bula* (known as the 'VKB' or the 'Book'), together with the evidence book, are source documents that assist the Native Lands Commission Chairman in resolving ownership claims, boundary determinations and chiefly title disputes.

Given the various classification and policy processes, the NLTB, as precursor to the iTLTB, was legislatively enacted in 1940 as trustee responsible for the administration and control of all native lands. The need for a trust structure was largely driven by the ever-growing pressure to access to land for government purposes, urban expansion and commerce during the colonial times. Embedded in this historic development was clause 4 of the Instrument of Cession to Britain of 1874 that necessitated the proper classification and protection of native land.

Native land held under custom as described under s.3 of Native Lands Act CAP 133, confirms a status that affords some degree of certainty but still very much in the customary register, one that can be granted in accordance with the provisions of the Act as prescribed under the NLTA CAP 134 s.7. Any lease granted under this provision is an instrument of tenancy under an agreement to lease between the lessor and lessee, sanctioned by the Board and such a grant operates exclusively outside the ambit of common law leases until it is registered. Depending on the type of land use and the future needs of the tenant, an instrument of tenancy created under CAP 134 may suffice in terms of giving a green light to dealing with native land, but still falls short of the comfort proffered by a registered title, such as certainty for commercial purposes and a registrable title that can be transferred or mortgaged to raise capital on behalf of the title holder. This is the preferred practice by banks and lending institutions in Fiji when vetting refinancing applications against leases on native land as collateral.

Section 4(1) of the NLTA vests the control of all native lands in Fiji (88 per cent by area) to the iTaukei Land Trust Board under a trust arrangement. As trustee, the iTLTB administers and controls all native lands for the benefit of all registered land owning units in Fiji. Other aspects of leases are treated specifically in sections 10 through 18 of the NLTA. Most major developments are accommodated through this system, whereby the grant of a lease creates an instrument of tenancy that could be further formalized into a registered lease upon registration with the Registrar of Titles.

There have been a number of decrees promulgated since 2006 by the current Government that have affected native lands in general and also how native land is administered through the Board. Understandably, most of these saw facilitative amendments that would demand consistency of application in relation to other laws and government policies. Notably the Land Use Decree (2010) saw the

introduction of a whole new leasing regime affecting native land, through the facilitation of a Land Bank. The intent of the Land Bank has come into question, given the presence and ongoing role of the iTLTB in the administration of customary land. Most poignantly, this raises issues of replication and whether the perceived inherent deficiencies within the current system can be improved. As it stands, the selling point of the Land Bank leasing regime seems predicated on the slim procedural approach of its processes, activated through landowning units recommending parcels of land for designation into the regime. *Prima facie*, it is investor friendly in that there is minimal direct contact between investors and the landowning unit, as the Land Bank manifestly becomes a proxy (in a more pro-active and commercial sense than demonstrated by the iTLTB in its role as trustee). Salient features of the Land Use Decree (2010), which served to amend both the Native Land Act (CAP 133) and the Native Land Trust Act (CAP 134), are briefly discussed below.

Decree 7 of 2011 (Native Lands [Amendment]) and Decree 8 of 2011 (Native Land Trust [Amendment]) as gazetted (Vol.12, Nos.18 and 19 respectively), both saw the same manner of amendments in procedural application by deleting the word 'native' wherever it appears and replacing it with the word 'iTaukei'. This amendment applies to all uses of the word 'native' wherever it appears in other legislation.

A restructure to the composition of the Board was enacted by Decree 32 of 2010 (Native Land Trust (Amendment) Act, CAP 134), whereby section 3 was amended to make the Minister of iTaukei Affairs Chairman of the iTaukei Board instead of the President. Likewise, amendments to section 18, deleted the word 'President' wherever it appeared and replaced it with the word 'Minister'. A new section 37 completes the formality deeming it that any mention of the word 'President' on Board documents will be replaced by the word 'Minister'.

The most significant impact on customary owners came in Decree 61 of 2010 (Native Land Trust (Leases and Licenses) Amendment Regulation 2010), which amended section 33 of CAP 134 and substituted a new provision in relation to the allocation of rental monies received on customary land paid by the iTLTB to the members of the landowning units and how henceforth it is to be divided equally amongst the members. This amendment turned on its head the payment methodology of NLTB lease monies (after management costs) that reflected the chiefly social hierarchy of the leadership as prescribed by s.11(1) of NLTA to the *Vanua* (most senior chief - 5% of rental income), *Yavusa* (chiefs of confederations, or larger tribal groupings – 10% of rental income), *Mataqali* (chiefs – 15%, and members of a clan or village) and *iTokatoka* (heads of sub-clans or familial groups, and their members), with the remaining 70% of rental income going to registered members of the proprietary landowning group. Since the amendment, those members of the proprietary group registered in the VKB now receive an equal share of 100% of the rental

income after management fees and a 5% levy into a collective trust. Moreover, the amendment demanded clarity and transparency premised on the fact that there are instances where the leadership of the Vanua, Yavusa and Mataqali is often vested in the same person, whereby the remaining and broader Mataqali population were historically forced to share the residual income received. The iTLTB through this amendment has done away with cash payment distribution as in the past but has required that money will only be paid into a Mataqali Trust account that is properly vetted and established specifically for the purposes of receiving and distributing rental income.

Whilst the object of the Land Use Decree is to utilize iTaukei land 'in the best interest of native land owners' per section 3(1), a close scrutiny of the procedural process of the Land Use Decree reveals that designating native land and head leasing it to the State Land Bank severs the connection between *Mataqali* members and the *vanua* to an even greater degree than currently experienced under the leasing regimes of iTLTB. This is due to the absence of residual customary control of the land by the landowning unit once placed under the Land Bank Regime but not yet leased. This has the potential to create inordinate uncertainty depending on the market forces of supply and demand whilst designated land is waiting to be leased to a commercial user. Further, extensive privacy clauses render it impossible for landowners to enforce their rights against the State per section 15. This includes, under s.15(1), a limiting provision that precludes any Court, Tribunal, Commission or any other adjudicating body to accept, hear or determine or in any other way entertain any proceedings, claim, challenge or dispute by any person or body which seeks of purports to challenge or question the validity of the Decree, or the decision of the Minister for that matter. The risk of venturing into a commercially binding contract with potentially unenforceable property rights is daunting for prospective developers. It is our observation that the promises of increased economic activity through making land readily available for commercial use under the one-stop-shop Land Bank Regime may prove harder than originally intentioned under the clauses highlighted.

Efficiency

The surge in global demand for resources and services expansion development is impacting on Melanesia, which is largely welcomed by the population. Associated with this development is introduction of new ideas (or rather ideas that are new to the region), and demand for land and resource access that differs from customary subsistence land usage. This includes large scale harvesting of forestry resources (and replanting), extractive industries and tourism development opportunities, all of which make the professional services of specialized institutions like the iTLTB both more prominent politically and more essential for the protection of customary landowners interests.

The iTLTB advisory process associated with the provision of development leases on customary lands, depending on the complexity of a proposed development, may often consist of no more than two meetings attended by its various professional experts and members of the *Mataqali.* The policies guiding these meetings are sanctioned under the *Leases and Licences Regulations*, and are more to do with obtaining the consent of the landowning unit as final administrative act in allowing proposals to proceed. Contract conditions are discussed as well, but these are usually generic unless subject to special conditions peculiar to the proponent industry. Lease covenants drafted by the iTLTB see little input from the landowning unit, with only a brief opportunity for consultation with the owners regarding the final form and/or tenor of the lease. Historically, NLTB leases commonly lack specificity and are imprecise on such vital matters as dispute resolution, process and procedures dealing with default, cultural heritage, nature and extent of customary rights and interests, and lack consideration of its likely impairment, extinguishment or damages. It is therefore perfunctory that leasehold contracts for multi-million dollar land developments may consist of a simple document of no more than fifteen pages, often based on a simple Unimproved Capital Value (UCV) rental basis that neither adequately reflects the loss of access to the land for the rental period, nor the ownership of improvements at lease expiration.

As the case in any emerging (post colonial) economy, the pursuit of developmental goals at improving GDP, facilitating revenue, and reducing poverty are a high priority. Therefore, the presence of a centralized institution, such as the iTLTB, tasked with all matters pertaining to customary land stewardship, is potentially a huge benefit for customary landowners. Whilst the positives are acknowledged, national interest pressure to pursue economic policies for the greater societal good may risk being at the expense of the property rights and interests of customary owners. This facilitation is often at the behest of governments striving to provide rapid land access for would be investors. Manifested as development policies, such intensity has the potential (and legislatively the ability) of restructuring customary tenure systems in an attempt to make them more consistent with development goal. Examples include land access programs consistent with the advent of sugar industry, pine plantation and recent tourism development surge in Fiji. The collective impact of restructured tenure arrangements over customary land is yet to be fully appreciated.

Fiji has a rich history in its sugar industry. It created a special type of landholding in the *Agricultural Landlord and Tenants Act* (ALTA) [CAP 270] to enable land to be leased for sugar cane production whilst protecting the industry and providing both security and certainty to farmers. This legislation allowed for a rent passing of 'up to' to 6 percent of the Unimproved Capital Value (UCV) of the land (as determined by a group of valuers advising the Minister, given the incorrect assumption that there is no open 'market' for such land). Under ALTA, UCV is defined as the value of an agricultural holding held

as if it were fee simple, unencumbered by any mortgage minus any improvements. It is noted that this compensation is supposed to reflect the agricultural productivity of the land and the purpose for which the land is issued and not the actual use of the land or for any purpose for which the land could be used (per ALTA, s.21(3)). Whilst all native land is prohibited from sale, with exception to the Crown for limited State infrastructure use, native leases are transferable and the lease interest can be sold in an open market. Such regulated rents cloud the issue of equitable return, especially where comparison is made to a rental based on, say, 6% of the hypothetical unimproved capital value (UCV) of the land rather than its equitable productive capacity.

The ALTA administrative mechanism also enables the Sugar Tribunal to grant a new lease per s.4 of CAP 270. This arises where an illegal tenant in adverse possession can petition for legal recognition and formalization of lease title as if they had been occupying the land for three years or more without the lessee's notice of eviction or reasonable measures taken for his eviction. Whilst the total impact of the ruling would be deleterious to the original leased estate, it has, through the process also bypassed customary owners consent in the creation of new leasehold interests.

Fiji Pine Industry and its plantations are also a special case. The special treatment provided for plantation forest leases was heavily skewed in the planters' favor in that the usual process of leasing was truncated to ensure expedited proceedings in the leasing of large tracts of native land. iTLTB for its part in the coalition of the willing sanctioned the issuance of single leases for vast tracts of native land and over multiple landholding units. This avoided the need for duplication of process such as surveying, lodging of multiple documents and payment of fees over every single lease area. iTLTB by law collects rental and divides it amongst the various landowning units per its records and payment policy. In 2010, the value of Fiji Pine Limited's 47,933 hectares of plantation estates was estimated at $48.3 million compared to $54.3 million the previous year. One of the attributed drivers to the reduction of value was the increase in customary owners contribution, with the increase in annual land rental rates from $11 per hectare to $15 per hectare (Fiji Pine Ltd, 2010).

The involvement of iTLTB departments in such a leasing process gives rise to an internal blame game over the failings of the trust system, which is normally to the detriment of customary owners. Today, questions of over-planting of forest beyond the boundaries of the leased area and encroachment into native reserve land, is a recurring issue with no easy solution given the age and market value of the standing forest, and the capital investment. This leads to questions and conflict over the legality of such encroachments, the ownership of the standing timber and standardizing of acceptable approaches to equitable compensation.

Clearly, despite providing security and certainty to the industry and farmers, lease returns from these plantations and agricultural holdings are unreasonably low. Likewise, spin-offs from the pine industry through harvesting contracts, equity participation in processing and other value adding opportunities are minimal, often through the lack of startup capital available to the landowners. As a result, the equity participation of landowners in the commercial forest timber sector is just 1 percent, with the rest held by the industry partner.

In attempting to entice tourism investors, there are many notable examples where iTLTB saw fit to impose ceiling rent (fixed revenue) with no regard to the business potential, rising costs, risks and other economic indices, which would point to such lease covenants being unconscionable. In other cases, in an attempt to develop a 'partnership' between landowners and tourism developers, base rent and turnover income approach have been adopted as the basis of equitable return to the *Mataqali*. The difficulty in policing such provisions is in proving the real turnover figures of a resort that may be owned by a French or US consortium with holiday bookings marketed and paid for internationally, with no clear record of revenue within Fiji. That aside, it is noteworthy that in nearly all waterside developments, little is formalized regarding the possible environmental impact of such development on customary fishing grounds and/or the contributory value of the surrounding water(s) per se towards the development. The right to customary fishing rights (*iQoliqoli*) in proximity to waterside developments are, in most cases, formally registered as customary held and owned (which may not necessarily be held by the adjoining landowners) with the Native Fisheries Commission. In cases of exclusive use of customary fishing grounds by developers or the inability of the customary fishing rights owners to access their seasonal fishing grounds due to tourist activities, compensation for the adverse effects and impairment to the continuing exercise of customary rights and interests of the customary owners is in most cases neither realized nor a matter for negotiation.

The difficulty for iTLTB in managing and enabling commercial development on surplus customary land seems to be in anticipating and clearly demarcating the extent of overlapping rights and interests over any given parcel of land. The situation is compounded in waterside development for tourism and resource processes that impact on both customary land and adjoining customary fishing grounds. Proactively, and to avoid future conflict and uncertainty for all parties, it is essential that the extent of such rights and interests must be first established. It would be futile to argue at some future date that such rights and interest may been extinguished without clearly establishing and determining the quantum of what was there in the first place (see for example - *NF, J, RE, & DL Armstrong v Savage Togara Coal Pty Ltd. [1999] QLC 3*).

Plurality

From the statutory powers vested to iTLTB, it seems that the recognition of customary title (afforded through the full acknowledgement of customary owners at Cession) obviates the need to itemize what constitutes customary rights and interests, together with the facilitation of a competent land management and administration system that provides an equitable compensation regime where surplus land is used for commercial purposes. In this regard it is important that the understanding of customary title must be informed by, and based on, the relationship of customary owners to their traditional lands. This understanding is similar elsewhere in Melanesia, and the wider South Pacific.

So far in Fiji, all compensation has focused on the economics of using iTaukei (native) land with little or no consideration of what constitutes customary title, with its integral rights, obligations and restrictions. Fiji has focused on recognition and developing systems to balance the expectations of the plural registers that inevitable confront administrator(s) of customary held land. Critically, customary relationships with land do not readily translate (or adapt) to Western/European concepts of real estate and economics. Whilst 'ownership of land title' is a Western/European convention, 'ownership of land' has a much broader meaning in the traditional *vanua* context. The Western/European interpretation is in individualized possession where land and property is commoditized, whereas the traditional *vanua* understanding is intergenerational, spiritual, and grounded in notions of guardianship, stewardship and sustainability by the family, tribe or clan as a collective.

The 2010 Annual Report of the Fiji Independent Commission Against Corruption cites 323 registered complaints against the iTLTB. Much of the distrust towards the iTLTB administration of all native land stems from the interplay between the plural registers; this interplay requires transparency and full disclosure. Given the lack of consultation and understanding of this interplay, landowners are pessimistic not only about the powers of the iTLTB but the also the manner in which it reaches decisions. Given that clauses against ' deprivation of property' are entrenched in Fiji's Constitution and in the operation of the common law in Fiji, the Courts over the years have interpreted the powers vested in the iTLTB literally, regarding matters of informed prior consent of landowners before renewing or issuing of leases. Further, the Courts have tendered to favor a literal interpretation of section 4(1) of the NLTA in terms of administration and control of customary land, opining that individual landowners have no legal standing or capacity to be involved in the leasing of their land (see, for example, of *Meli Kaliavu and others v NLTB* (1956) 5 FLR 17; *Timoci Bavadra v NLTB* (Unreported) 11/07/1986; and by *Namisio Dikau v NLTB* (1986) 32 FLR 179).

Vakavanua (Customary Arrangements)

Given the growing unease by customary owners towards iTLTB for lack of comprehensive transparent dealings, capacity, and entrenched grievances relating to equitable compensation, some landowners have taken the law into their own hands. *Vakavanua* dealings (customary lease arrangements), whilst informal, are sometimes preferable to both the landowners and their tenants, given their mutual mistrust (and lack of confidence) in the iTLTB. In some cases *vakavanua* arrangements are more profitable between the proponents and customary owners, with customary owners feeling assured that they remain in more control of their land. In 1996 there were 1,480 customary owners (comprising 4,292 of total hectares cultivated by cane growers) who opted for *vakavanua* arrangement for cane farming on their land (FSC Grower Census, 1999).

Similarly, in cases of tourism developments, both landowners and registered customary fishing rights owners have found it financially appealing to enter into contractual *vakavanua* dealings with developers. In some cases income to the landowning unit from the *vakavanua* arrangements are more consistent and contemporary in terms equitable economic return to the ad hoc needs of the communal landowning groups. Whilst these deals, as observed, ensure a close working relation between the parties, they do lack commercial certainty and engagement rules, and as lending institutions do not recognize such transactions they can be to the disadvantage of the developer. As a result, vakavanua arrangements tend to work best in small scale farming ventures, or for informal leases to members of the landowning unit who want to develop a commercial enterprise. To ensure they do not out of proportion if abused through unrealistic demands of the parties, they work most effectively when moderated through chiefly involvement and closely observed traditional protocols.

From tenant's perspective, it is reported that there are also some advantages to be gained from *vakavanua* dealings, despite inherent risks of security of tenure for the lease term. Such arrangements are much quicker to process and enable early access to the land, and often enable negotiation to use the best quality land. For example, this may mean land that has been put in Reserve and otherwise would not be available to leasing to non-Fijians is made available under a *vakavanua* arrangement. For the customary landowners, there is no management and administrative fees payable to iTLTB and (prior to the changes that occurred under the amending Decrees) were also free from the policy of structured payments as per its leases and licenses regulations.

Ideally, it is preferable not to have a plural leasing system in place as we see now with iTLTB leases, Land Bank leases and *vakavanua* arrangements. In this paper we do not elaborate on the leasing arrangements over State land, which from an agricultural perspective have historically competed with the

iTLTB (via differing percentages of UCV collection). Generally speaking, tenants and investors want security of tenure, with clarity of lease term, and are happy to pay equitable market rents that are regularly reviewed. The challenge for the iTLTB is to deliver a land management service that is appropriate to the needs of both the landowners it serves and the tenants that wish to productively use customary land. This would limit the need for *vakavanua* arrangements and avoid political interference through Government initiatives like the Land Bank.

Capacity

The key question that emerged throughout the years of iTLTB's operation is how to define its future form and role. Should it concentrate on iTaukei people making decisions over native lands in consultation with the registered customary owners? Likewise, should the iTLTB be given a new mandate to first review its lease management provisions and formalize all its dealings in customary lands by engaging professionals, technology and data that comply with international best practice? Obviously the answer to both rhetorical questions is a resounding 'yes'. However, there is no illusion that this task will be simple. Making the iTLTB fit for purpose needs to be driven by the locals who understand the rigors of customary land economics, valuation, development, lease management, finance and taxation in the context of the socio-political / socio-cultural structures that support them whilst at the same time being attuned to the Anglo/Western fundamental concepts of property – in other words, all iTLTB staff need to be able to navigate and mediate the plurality of registers.

Perhaps one of the best lessons of the iTLTB for wider Melanesia where there is growing suspicion about the use of leases, is that it has showcased that leasing is an instrument that can render the freedom of doing business on customary owned land in Fiji. In this regard, the iTLTB model is a template that can be encouraged but its policies and operating protocols need constant review in order to nurture aspects that assuage fear of loss of control from a landowners' perspective whilst assuring stability and certainty to would be investors. The goal for any Land Trust or Incorporated Land Group is to provide customary owners with models of land tenure that effectively integrates both economic and cultural aspirations. Economic aspiration should not be at the expense of cultural maintenance (Report of the Review of the Aboriginal Land Trust: [1997] 2 Australian Indigenous Law Reporter 110). Below, we set out a number of recommendations that can help achieve this goal.

Operational Matters

Lease terms

For long term security and certainty, iTLTB routinely grant 50-year and 99-year leases to meet industry needs. However, there is a level of contention over the appropriateness of lease terms beyond 50 years. For example, a resort development or material infrastructure may have a return on investment that is based on a significantly shorter period. The situation was tested (in the context of mahogany plantations) in *Tiva v Director of Lands [2005] FJCA 1; ABU0015.2004S*, and *Tiva v Native Land Trust Board [2007] FJHC 117; HBC 81 of 2006*. The point at issue was that the iTLTB could not issue leases in excess of 50 years for isolated unplanned areas outside the margins of settled areas and properly designed areas. It transpired that the iTLTB had, inappropriately, issued a number of leases over unsurveyed areas for a term of 99-years. As the decision rendered those leases illegal, iTLTB was faced with the colossal problem of having to recompense developers and plantation owners for the grant of leases were void from the initial date of grant. To redress the problem, on 8 November 2007 Cabinet gazetted an amendment to CAP 134 by the *Native Land Trust (Leases and Licences) (Amendment) Regulations 2007*, which provided retrospective approval for 99-year leases by including leases for development or those in the public interest such as tourism ventures and infrastructure.

There is a need to engage a flexible approach to lease terms, ensuring that whatever term is adopted is in the best interests of the custom landowners, whilst ensuring that the term is appropriate for an investor to recoup a return on their investment. Provided that there is clarity in development leases that at lease expiration the improvements vest in the landowners, as part of the return to the landowners on forsaking their land for the duration of the lease, a number of opportunities occur during the first and subsequent lease terms to surrender and renew the lease. Such a surrender and renewal recognizes that both the land and improvements vest in the landowners. The valuation of the improved land (with the benefit of the approved improvements) is relatively straightforward and the present value of the future reversionary interest is easy to calculate.

Any such lease covenants should also consider the frequency and quantum of rent review options.

Management and ownership of improvements on Native Land

Fiji is currently in a position where many residential and commercial (with a few tourism) leases managed by the iTLTB are approaching expiry. Many of the leases are silent on the ownership of improvements, and as with the high profile situation of Government Facilities on native land around Suva, many cases are likely to end in expensive and lengthy litigation if the ownership of improvements is not clarified once

and for all. As in the cases of past British colonies, all of Fiji's doctrinal applicability on tenure and property matters has jurisdictional underpinnings inherited from its former colonial masters. Fiji's antecedence as a colony of New South Wales (Australia's first State) from where it was once administered, burdens its tenure system today. As a result Fiji has inherited an adapted NSW version of the Torrens system, where improvements are often owned separately to the underlying interest in the land. This is in stark contrast with the 99-year development leases that were used in Victorian England, where under the Westminster system the approved improvements on the land had to be given over to the landlord in good and tenantable repair at lease expiry.

The burden of this interpretation afflicts the current administration and control powers of the iTLTB whereby long-term native leases for government utilities and related purposes run to lease expiry without ownership provisions relating to improvements in agreement clauses. Essentially, the underlying tenure in the land then returns to the *Mataqali* but the issue that is often contested long after the term expires is about the ownership of improvements on the land. Moreover, the UCV based rentals do not generate sufficient revenue to create a sinking fund for the landowners to buy out any tenants improvements. As a result, what transpires is a conflict situation whereby the landowners are pressured to create a lease extension at a rental of 6 percent of UCV, a rental that does not reflect that the land is now actually 'improved'. Moreover, this lack of beneficial lease management for the landowners creates the potential for what are in effect perpetual leasehold interests over the land (which is akin to alienation, albeit that alienation is precluded by the legislation).

An example is the long running case relating to the Government station / office lease in the township of Nausori. The Attorney General, in a High Court Action, *HBC No.54 AG v NLTB & MATAQALI Nakuita* instituted the matter in 2000. Premised on the basis of wrongful eviction by the NLTB as *Mataqali* trustee, the above action seeks *inter alia* a determination on the ownership of improvements on the subject land. In a more recent development, *Mataqali Nakuita* were advised that they have neither interest in the land lease nor the improvements, resulting in the *Mataqali* filing civil action 330/2011 hoping that justice will look kindly on them. The *Mataqali*, according to iTLTB sources[3], sought the assistance of the Prime Minister (who, as Minister for iTaukei Affairs, is also the current Chairman of iTLTB) to resolve this long outstanding matter in 2012. The matter remains unresolved at the time of writing this paper. It is of concern that the Government is contesting the ownership of the improvements in this lease expiration, as the Government approach is most certainly to the long-term disadvantage of the *Vanua*. If the Government were to win the case, and prove that the Government as tenant owns improvements on

[3] Source: Personal Correspondence with Mr Save Ralagi, iTLTB Landowners Affairs, Suva (10 February 2014).

customary land, this would set a very unfortunate precedent for all customary land in the country and dissuade landowners from committing their land for development.

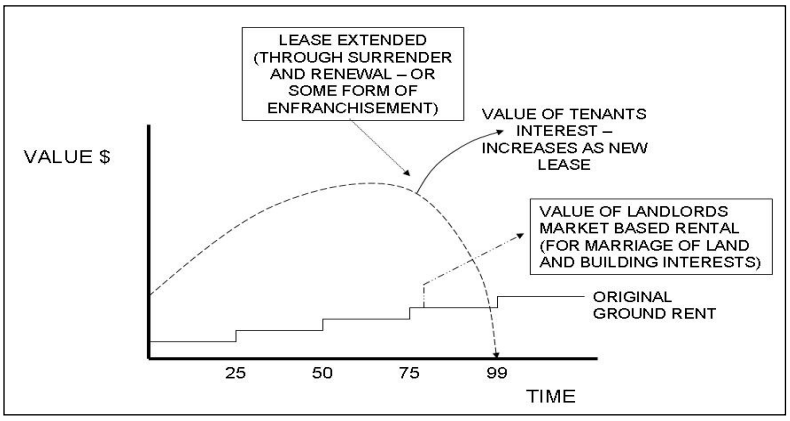

Figure 1: Marriage value of landlord and tenants interest on lease expiry (assuming continued tenant occupation and no compensation)
Source: Boydell 2008, p.61.

Conversely, if the Government were to accept that the improvements do indeed belong to the landowners, then they could merely request to be granted a new lease at a commercial rent for the premises (land and buildings) rather than relying on the hypothetical and now inappropriate (for the land is improved) unimproved capital value basis. Such an agreement would set a clear precedent for the nature of improvements on customary land and (as demonstrated in Figure 1) allow negotiations to occur during the last twenty years of a lease for extensions that reflect the ownership of the improvements with the customary landowners on reversion.

Henceforth, all new development leases granted by the iTLTB on behalf of customary owners need to be very clear in stating that the improvements will belong to the landowners and form part of the reversionary interest. Moreover, covenants need to be carefully drafted within the leases to ensure that any improvements on the land are formally approved by the iTLTB on behalf of the landowners, and clearly recorded on the lease document. The lease document also needs to make it clear that the approved improvements are to be provided to the landowners in good and tenantable repair at lease expiration (or surrender if an earlier renewal is sought).

To assist in this crucial financial remuneration for the landowners, the iTLTB needs to ensure that it has capacity to complete the schedule of condition / schedule of dilapidations in the latter years of the lease. This will be achieved by ensuring that the iTLTB trains and retains suitably qualified building surveyors who can undertake detailed property condition inspections and cost any repairs that the tenant needs to make to the property prior to expiration of the lease, or surrender/renewal arrangements are put in place.

Likewise, it is important to ensure that the iTLTB has sufficient qualified valuers who can analyze lease contracts and negotiate terms for the grant of a new lease, rent review provisions and surrender / renewal arrangements.

Reliance on a percentage of the hypothetical unimproved capital value UCV as the basis of rental determination

Much of the land that is held under a lease from the iTLTB (and for that matter the Government) is already improved and thus there is a market (or potential development) basis on which to determine the value of the land. Reliance on UCV creates a plural market, where the return to the landowners (if based on a percentage of a hypothetical UCV) bears no relationship to the economic value of the improvements that a developer or other tenant is benefiting from.

As the Pacific Islands Forum Secretariat recommends, "Administratively determined Unimproved Capital Value based returns to customary land must be avoided. Although these may seem uncomplicated, they do not facilitate a fair return to landowners" (PIFS, 2008. p.17).

Rather than rely on the outdated and hypothetical construct of unimproved capital value as a basis for rental agreements, the iTLTB must research a more equitable market based arrangement that will secure the optimal return to the *Vanua*, whilst ensuring that a lease on native land remains attractive to current and prospective tenants.

Appropriate valuation approaches

As highlighted above, there is a need to improve the capacity of iTLTB staff involved in the valuation of lease interests and also in understanding the valuation and forecasting approaches used by developers and prospective tenants on native land to ensure that the best and most equitable returns are achieved for the customary landowners. The iTLTB staff dealing with these matters need to be conversant with international best practice, as articulated in the International Valuation Standards (IVSC, 2013).

In addition to training in development feasibility and analysis, valuation capacity needs to be developed in understanding the marriage value (or synergistic value) associated with development on customary land and potential use of adjacent *iQoliqoli*. Likewise, capacity needs to be developed to deal with compensation issues where there is a taking, damage, or associated loss of Special Indigenous Value (see our prior papers for the World Bank: Boydell & Baya 2012 and Boydell & Baya 2013, that explore these issues in detail).

The Way Forward

We find that there is a need to review the lease management functions of the iTLTB to align it to contemporary land based development in Fiji. There is a need to balance the land based economic drivers of the national economy such as agriculture, tourism and resource development (amongst others) on one hand and the needs and aspirations of registered landowning units on the other. Currently, the complexity of lease management is confounded as the NLTA takes effect subject to a minimum of 22 other Acts and Decrees, ranging from Agricultural Landlord and Tenant Act to the Surfing Decree. Any review of the iTLTB lease and licensing regulations needs to have regard to international best practice, but must be undertaken in such a way as to ensure respect and sensitivity in dealing with indigenous land.

Below, we outline the range of issues that need to be considered in undertaking a review of the iTLTB leasing and licensing regulations, and also offer lessons for the lease management needs of other countries in Melanesia:

i. Consider the range of lease terms and their appropriateness to purpose (e.g. a resort development or material infrastructure may have a return on investment that is based on a significantly shorter period than 50 years). There is a need to engage a flexible approach to lease terms. This will provide that whatever term of lease is adopted it will be in the best interests of the custom landowners, whilst ensuring that the term is appropriate for an investor to recoup a return on their investment.

ii. Associated with the lease terms is the need to consider the frequency and quantum of rent review options (learning from the Vanuatu example, where there is a five-yearly review pattern… but to an unrealistic rental basis and no capacity to actually undertake the review process).

iii. Fiji is currently in a position where many residential and commercial (and a few tourism) leases managed by the iTLTB are approaching expiry. The responsibility on tenants to return the improvements in good and tenantable repair on lease expiration is not clearly articulated in the wording of the leases. A clear policy that remedies this deficiency is required, together with recommended drafting protocols and wording for all new leases recognizing that the improvements will belong to the landowners and form part of the reversionary interest in the land.

iv. There is a need to evaluate how the current arrangements address (and can be revised to incorporate) contemporary issues such as cultural heritage, carbon sequestration, environmental management, prospecting and extractive mining etc. Consider the extent to which the iTLTB has been progressive in this regard, pursuant to s.33 of the NLTA (i.e. leases for special purposes).

v. There is a need to critically assess and (where appropriate) consider alternatives to the template terms and conditions of leases and licensing agreements currently in use, to ensure that they are consistent and compatible to the generic and specific clauses that underpin international best practice. It is important that any such terms and conditions are relevant to, and if appropriate unique, to the context of the land use and industry concerned.

vi. Such a review needs to recognize the transdisciplinary nature of the management of customary land. An appreciation of this transdisciplinarity is essential to both the current and future capacity requirements and training needs of the iTLTB to ensure suitably qualified staff can be trained and recruited to deal with building, valuation, development feasibility, resource / agricultural / ecological economics, legal, management, planning, GIS, negotiation and client relation matters.

vii. It is important to remember that much of the land that is held under a lease from the iTLTB is already improved and thus there is a market (or potential development) basis on which to determine the value of the land. Rather than rely on the outdated and hypothetical construct of unimproved capital value as a basis for rental agreements, equitable market based arrangements should be applied that secure the optimal return to the *Vanua*, whilst ensuring that a lease on iTaukei (Native) Land remains attractive to current and prospective tenants.

viii. There is a need for iTLTB staff engaged in lease management to understand the valuation and forecasting approaches used by developers and prospective tenants on iTaukei (Native) Land. These officers need to understand how valuation practice on native land can meet contemporary International Valuation Standards (IVSC) and best practice. This includes building capacity to deal with compensation issues where there is a taking, damage, or associated loss of Special Indigenous Value as well as marriage value (or synergistic value) associated with development on customary land and related aspects (for example: prospecting agreements, exploration licenses, mineral extraction, cultural heritage issues, environmental impact issues, carbon sequestration, climate change, use of adjacent *iQoliqoli* areas).

Concluding Remarks

Our analysis of the iTLTB highlights that the recording of landowner groups in Fiji over the last 120 years, whilst not without some problems, has made it easier to set up a land trust administration to make surplus customary land available for economic development by using lease structures. The iTLTB has now been running (in its earlier guise as the NLTB) for almost 70 years. In this paper we have provided a

comprehensive analysis of the iTLTB and made a number of recommendations as to how it may further enhance the professional services that it offers to the customary landowners that it serves.

So what real lessons does this analysis offer for Papua New Guinea, Vanuatu and the Solomon Islands? Clearly having a formal record of all indigenous groups through the VKB has made it easier for the iTLTB to know upon whose behalf they are ultimately dealing, with associated benefits in terms of lease management and disbursement of rental income to the beneficiaries. Recent regulatory changes by the current government have changed some of the historic arrangements relating to heads of confederations and major clans in an attempt to make those rental disbursements more equitable to all registered members of a particular landowning group.

Where the iTLTB differs from the Incorporated Land Group arrangements in Papua New Guinea, the three peri-urban trusts in Vanuatu and the charitable trusts in the Solomon Islands is in terms of economies of scale. Because the iTLTB has been administering all customary land in Fiji for around 70 years it has sufficient rental income to cover its administrative costs and is able to employ a large professional team. This skill set is not matched in Papua New Guinea, for example, when a landowning group incorporates in order to negotiate with a resource company for access to their land. The negotiation power of the Incorporated Land Group is compromised by their inability, in most cases, to pay for appropriate professional services to advise and negotiate on their behalf.

The other Melanesian countries have regularly sent some of their land management staff (from government departments predominantly) to observe the workings of the then NLTB and see what lessons can be learnt in applying such land management and administration skills back in their respective countries. A question that arises is one of the scales. Like its Melanesian neighbors Fiji is spread over an archipelago of some 330 islands. This has resulted in a level of decentralization from the capital with satellite offices being established in Lautoka and Labasa to service those regional areas. There is a strong rationale for the diverse cultural groups in different islands of Vanuatu, the Solomon Islands, or Papua New Guinea to have their own regional representative trust boards with a collection of professional services.

We see such an initiative as a prudent way forward but it would be subject to significant investment by the respective governments in establishing these professional services. What is evident however is that unless governments take action to ensure that they do have professional service services available in representative customary land trust bodies that can negotiate effectively on behalf of customary landowning interests, landowning groups will remain poorly or underrepresented and land conflict will be enduring at the nexus of the plurality of registers.

There is certainly evidence of reaction to the intervention by external donors to land related matters (see for example, Elahi & Stillwell 2014, Simo 2013, and www.mildamelanesia.org). Examples of inappropriate lease-leaseback arrangements in Papua New Guinea and questionable urban leases in Vanuatu have created a level of distrust in direct government administration of customary land (which is why a Land Trust Board can be a useful intermediary) as well as a lack of faith in leasehold structures per se. Whilst this is understandable, and we have highlighted similar failings in Fiji, our view is that leases remain part of the solution rather than being part of the problem of administering customary land. The lessons in this paper serve to clarify a number of those issues. If leases are to be part of the solution it is essential that customary landowners are supported in their drafting and the covenants contained therein. This is precisely how a Land Trust structure with suitably trained professional staff can protect the landowners interests. However, as we have seen, landowners and the government feel that they are not being properly served by the existing land trust structure. As is evident in Fiji, we see customary owners moving towards vakavanua arrangements and the government trying to take control of customary land under a Land Bank regime.

Overall, we find that customary land may best be administered by a land trust that leaves the customary structure intact, and takes innovative approaches to represent best practice, to enable the plural registers to evolve and overlap in a way that satisfies a predevelopment and economic growth agenda.

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REDD+ and Forest Carbon Rights in Solomon Islands

BACKGROUND LEGAL ANALYSIS

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Executive summary

Who 'owns' the carbon in the forest? This is a question of great importance for all developing countries preparing to engage with REDD+, including Solomon Islands. Land in Solomon Islands is of central importance to the cultural and economic security of customary landowning communities. Consequently, the right to control forest carbon and the right to enjoy the economic benefits that may flow from this under REDD+ are also of critical importance to Solomon Islanders.

The natural resources of Solomon Islands belong to its people and government. The vast majority of land (86%) is held under customary tenure. Solomon Islands has no current laws on forest carbon rights. While it is clear that forest carbon on customary land is 'owned' by customary land 'owners', the individual, groups and clans in which that 'ownership' vests is not readily deducible from existing laws.

Under the current laws:

- Customary land is governed by customary laws, which differ from place to place and are not written down.
- Customary land and interests in customary land are inalienable, except to Solomon Islanders, and in other very limited circumstances. A contract or agreement that purports to transfer interests in customary land can be declared void.
- Those entitled to deal with customary land, as 'owners', and as holders of various interests in the land and its natural resources, are not readily identifiable.
- The boundaries of customary land are unclear as they are not surveyed and are often disputed.
- There is no suitable mechanism for customary land 'owner' groups to join together as a legally recognised entity (e.g. a Sellers Entity) to hold and manage forest carbon, and to distribute benefits in an open and transparent way.

Legislation is required to address these issues. Set out below is a summary of the steps which might be taken to define and allocate forest carbon rights in Solomon Islands:

Step 1: Define and allocate forest carbon rights in legislation (Section 6)

An amendment to the definition of 'land' in the *Land and Titles Act* to include 'forest carbon rights' would make it clear that forest carbon rights are held by the 'owners' of public land, perpetual estate, fixed term and leasehold interests.

The situation is more complex regarding customary land and further steps are necessary. The term 'forest carbon rights' should itself be defined as well. Step 1 is addressed in Section 6 of the Paper.

Step 2: Identify and record who 'owns' the forest carbon rights on customary land (Section 7)

On customary land in Solomon Islands, land 'ownership' and the customary right to control the forest resource on that land can be held by different groups. Simply legislating to declare that 'land' includes 'forest carbon rights' may therefore not clearly resolve the question of 'ownership'.

There are two options available here:

> **(a) Customary Land Records Act model:** Use the *Customary Land Records Act* to identify and record the 'owners' of forest carbon rights on customary land. This Act allows a customary land holding group which claims an interest in customary land to apply to the Land Record Office to record their 'primary rights' (in this case, their rights to the forest carbon), and includes the demarcation of the boundaries. Use of this option would require the Government to establish the infrastructure required for the *Customary Land Records Act* to operate, such as supporting regulations and a functioning Central Land Record Office; **or**
>
> **(b) Forest Resources and Timber Utilisation Act model:** Use the model of the *Forest Resources and Timber Utilisation Act* (ss 7 and 8) as noted, by which the Provincial Executive holds a meeting to identify which of the customary 'owners' is entitled to grant the 'timber rights', and extend it to forest carbon rights. This would mean that the 'owners' of forest carbon rights would be identified using the process set out in that Act. However, it should be noted that the *Forest Resources and Timber Utilisation Act* has generated a high level of community disquiet, and this may therefore not be a suitable option.

Step 3: Legislate to enable customary land 'owners' to enter into REDD+ contracts (Section 8)

Customary land 'owners' cannot presently enter into contracts to sell their emission reductions/removals to a Project Proponent (called a 'REDD+ contract') from their customary land because of the statutory restriction on disposing of customary land or disposing of *interests* in customary land (*Land and Titles Act*, ss 240 and 241(1)). A REDD+ contract could amount to an 'interest' in customary land because the effect is to limit how that land can be used (e.g. often for a period of 10 years or more). Therefore, for customary land

'owners' to undertake a REDD+ project which involves a contract to sell verified emission reduction and removals to a REDD+ developer, an amendment will be required to these sections of the *Land and Titles Act* exempting these REDD+ contracts.The only alternative would be to require customary land 'owners' to sell or lease their customary land. However, under current law leasing or granting a fixed term estate results in the permanent alienation of customary land.

Alternative Option: Allow third parties to hold/own forest carbon rights over customary land (Section 9)

In the same way that third parties (such as logging companies) are permitted to hold timber rights over customary land under the *Forest Resources and Timber Utilisation Act*, Solomon Islands needs to decide whether it wishes to permit third parties to hold the rights to forest carbon. To enable this to happen, the *Forest Resources and Timber Utilisation Act* could be amended to provide that 'timber rights' include 'forest carbon rights'. The person/company who holds the timber rights in an area would therefore be entitled to exercise their timber rights, forest carbon rights, or a combination of the two.

Conclusion

Having regard to the relative advantages and disadvantages of each of the options, it is suggested that the following mechanisms be considered to facilitate REDD+ projects on customary land in Solomon Islands:

1. Recording of forest carbon rights under the *Customary Land Records Act.*
2. Landowners enter into a REDD+ agreement with a project developer to sell their verified emission reductions and removals (an amendment to the *Land and Titles Act* is required to permit this).
3. Landowners consent to a conservation covenant of some description over the forest to be protected, with sufficient flexibility to manage the forest sustainably.

Carbon Property Rights – opportunities and challenges for the Pacific

Resources:

- Corrin, J. (2012) 'REDD+ and Forest Carbon Rights in Solomon Islands: Background Legal Analysis', prepared for SPC/GTZ Regional Project *Climate Protection through Forest Conservation in Pacific Islands Countries.* November 2012, 68 pages. http://theredddesk.org/sites/default/files/resources/pdf/solomons_redd_forest_carbon_rights_2012.pdf
- Sheehan, J. (2014) Indigenous Carbon Property Rights – discussion items for this Symposium.

Contents

List of maps

List of boxes

List of figures

List of tables

Abbreviations

AFOLU	Agriculture, Forestry and Other Land Uses
A/R	Afforestation / Reforestation
CCBS	Climate, Community and Biodiversity Standard
CDM	Clean Development Mechanism of the Kyoto Protocol
COP	Conference of the Parties
ERPA	Emissions Reduction Purchase Agreement
FCPF	Forest Carbon Partnership Facility of the World Bank
FAO	Food and Agriculture Organization of the United Nations
FPIC	Free, Prior and Informed Consent
ILO	International Labour Organisation
IPCC	Intergovernmental Panel on Climate Change
MRV	Measurement, Reporting and Verification
PICs	Pacific Island Countries
REDD+	REDD, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks (“+”)
UNDRIP	United Nations Declaration on Rights of Indigenous Peoples 2007
UNFCCC	United Nations Framework Convention on Climate Change 1992
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and forest Degradation

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Purpose of this Paper

The purpose of this Paper is to:

- Explain the relevance of forest carbon rights to a national REDD+ scheme in Solomon Islands
- Explore whether the 'ownership' of carbon rights can be deduced from the existing legal framework of the country, having regard to both statutory and customary law
- Identify some options for how Solomon Islands could clarify the 'ownership' and management of carbon rights in its emerging national REDD+ scheme.

The Paper does not purport to set out a comprehensive legal and policy framework for clarifying and allocating forest carbon rights in Solomon Islands. Rather, it seeks to establish the current legal position as to how carbon rights are likely to be treated under the existing legal framework, and to use this as a baseline to identify a range of options for law reform. Whether and how Solomon Islands decides to pursue law reform activities on carbon rights will then be a matter for further consultation and discussion as part of Solomon Islands's REDD+ readiness activities.

This Paper has been commissioned by the SPC / GIZ regional project "*Climate Protection through Forest Conservation in Pacific Island Countries*", funded by the International Climate Initiative of the German Federal Environment Ministry. It is part of a larger study on forest carbon rights in Melanesia. The other Country Papers (Fiji, Papua New Guinea and Vanuatu) can be accessed under "Country Reports", and the Synthesis Report entitled *REDD+ and Forest Carbon Rights in Melanesia*, can be accessed here.

1. Introduction

1.1 Country context

Solomon Islands is one of five Melanesian countries (along with Fiji, New Caledonia, Papua New Guinea and Vanuatu) located in the South Pacific Ocean (Map 1.1). It has a population of 511,000, of which 82% live in rural areas. It has a land area of 2,799,000 hectares, with forest cover of 2,213,000 hectares, being 79% of its land area, reporting an annual 0.2% rate of deforestation over the 2000-2010 period.[1] One of the main drivers of deforestation and forest degradation in Solomon Islands is planned deforestation due to commercial logging.

Map 1.1 Location of Solomon Islands in the Pacific (source: GIZ)

1.2 Overview of REDD+ readiness in Solomon Islands

Solomon Islands is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and has ratified the Kyoto Protocol.[2]

The following donors and development partners are currently supporting REDD+ readiness activities in the Solomon Islands:

- The SPC/GIZ Regional Project '*Climate Protection through Forest Conservation in Pacific Island Countries*', funded by the International Climate Initiative of the German

[1] All country statistics are from Food and Agriculture Organisation of the United Nations, *State of the World's Forests* (FAO, 2011) 108, 117.

[2] Kyoto Protocol to the United Nations Framework Convention on Climate Change, opened for signature 11 December 1997, 37 ILM 22 (entered into force 16 February 2005) ('*Kyoto Protocol*').

Federal Environment Ministry. This Paper has been commissioned as part of this project.

- Solomon Islands has participated in the UN-REDD Programme since February 2010. In 2011, it signed an *Initial National Programme Document – Solomon Islands* which outlines the initial objectives of the UN-REDD National Programme in Solomon Islands. Other key development partners with UN-REDD are Japan International Cooperation Agency (JICA), the Global Environment Fund and The Nature Conservancy.
- Live and Learn Environmental Education, an Australian-based non-government organization, is also supporting the development of a REDD+ pilot project in Solomon Islands, funded by the European Union.

1.3 Proposed scale of REDD+ activities in Solomon Islands

With international support, Solomon Islands is developing a national REDD+ programme to prepare itself to receive performance-based payments for emission reductions/removals from a range of international REDD+ financing sources.[3]

As with the other Melanesian countries, Solomon Islands has opted for a national approach to REDD+, with national carbon accounting. However, given that it may take some years for the UNFCCC REDD+ mechanism to become functional, in the interim Solomon Islands will support the development of a project-based approach to REDD+ and will seek to integrate this into its national REDD+ framework at a later date.

1.4 Pacific Islands Regional Policy Framework for REDD+

Solomon Islands has participated in the development of the *Pacific Island Regional Policy Framework for REDD*+, which was formally endorsed by the Pacific Island Ministers for Agriculture and Forestry in September 2012.[4]

The Regional Framework calls on countries to develop their REDD+ policies, strategies, action plans, guidelines, and legislation to define forest carbon rights, forest carbon financing and benefit-sharing arrangements (see Box 1.1).[5]

[3] *Pacific Islands Regional Policy Framework for REDD*+ (SPC/GIZ, 2012) [5].
[4] The *Pacific Islands Regional Policy Framework for REDD*+ was prepared with support from the Secretariat of the Pacific Community and GIZ, and was adopted by the Heads of Agriculture and Forestry Services at its Fifth Regional Meeting in Nadi, Fiji, 24-27 September 2012.
[5] *Pacific Island Regional Policy Framework for REDD*+ (SPC/GIZ, 2012) 8, [4.3.2].

Box 1.1 Extracts from Pacific Island Regional Policy Framework for REDD+ regarding forest carbon rights

The Regional Framework contains the following guidance on forest carbon rights for Pacific Island countries, under the of Safeguards heading:

> 'Para. 4.6.3: REDD+ implementation can take place on government-owned land, freehold land, and/or customary land. Performance-based payments for REDD+ will be dependent upon clear delineation of land tenure, carbon tenure arrangements, as well as effective, equitable, and transparent benefit-sharing arrangements for REDD+ implementation activities.
>
> *4.63a Pacific Island countries and/or REDD+ project proponents will need to clarify land and forest carbon tenure arrangements as a key condition of REDD+ implementation.*
>
> *4.6.3b Pacific Island countries already possess laws and regulations guiding the production, distribution and sale of commodities (e.g. timber, minerals) derived from natural resources. These laws and regulations can be used as a starting point for the development of laws and regulations (including taxation) guiding the production, distribution and sale of carbon assets.*
>
> *4.6.3c Pacific Island countries should ensure effective, equitable and transparent distribution of benefits arising from REDD+ implementation. Benefit distribution and benefit sharing should address gender equality.'*

2. What are 'forest carbon rights'?

The phenomenon of climate change and the recognition by the international community that forests play an important role in reducing greenhouse gas emissions and increasing carbon removals has suddenly conferred value to the carbon in forests. This development has given rise to the following questions: Who 'owns' the carbon in the forests (and soils)? Who is entitled to the associated benefits (and risks and obligations) associated with those carbon rights?

There is currently no clear or commonly accepted definition of carbon rights under international law or the international UNFCCC policy framework for REDD+.[6] While the current UNFCCC framework for REDD+ makes no specific mention of carbon rights, it does

[6] REDD+ commentators use different definitions throughout the literature on REDD+. For a detailed discussion of the different types of carbon rights that can exist, see David Takacs, *Forest Carbon – Law and Property Rights* (Conservation International, 2009)13-17.

'request' State Parties to address land tenure issues when developing their national REDD+ strategies, and it does establish some other guiding principles that are relevant to the way that countries will develop their framework for carbon rights (e.g. safeguards).[7]

For the purposes of this Paper, the term 'forest carbon rights' refers to the right of an individual or group to exploit and enjoy the legal and/or economic benefits concerning:

- ***The carbon already stored (or sequestered) in forests and soil*** *(also called 'stored forest carbon')*: It is the act of 'avoiding' the emission of this carbon into the earth's atmosphere, e.g. by avoiding logging or other activities that degrade the forest, that entitles the holder of the carbon rights to receive benefits under REDD+; and
- ***Carbon sequestration****:* This is the carbon that will be sequestered (absorbed) by the trees and the soil in the future. Sequestration is the process by which trees absorb carbon through photosynthesis, thus 'removing' it from the atmosphere (also referred to as 'removals').

Explanation of terms

Forest carbon: the physical amount of carbon that is stored in forests and soil (the carbon sink), and the carbon that will be sequestered in them over time.

Forest carbon rights: the right of a person or group to the legal, commercial or other benefit (whether present or future) from exploiting the forest carbon.

Carbon sequestration: the process by which forests absorb carbon.

Carbon sink: the natural features (forest and soil) that hold and absorb carbon from the atmosphere.

For a person or group to demonstrate that they 'own' or have control over the forest carbon rights in a certain area of land, they must be able to show:

- That they 'own' or have legal control over the **land**
- That they 'own' or have legal control over the **forest resource,** to the exclusion of all other competing interests, such as forestry rights, mining rights, leasehold interests or competing usufructs (e.g. competing customary rights), or through having reached agreement with those who hold competing interests
- That they can **maintain their control** over the land and forest for the required period of time (e.g. 10 – 30 years, depending on the duration of the contractual or legal

[7] Conference of Parties, *The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention***,** COP Decision 1/CP.16, UNFCCC, 9th plen mtg, UN Doc FCCC/CP/2010/7/Add.1 (15 March 2011) [72].

obligation that is undertaken) in order to demonstrate that they can manage and protect the forest resource.

2.1 Carbon pools

Forest carbon can be divided into five carbon pools (physical sub-sets of forest carbon).

The five carbon pools specified under the IPCC 2006 Guidelines are:[8]

- above-ground biomass (stems, branches and foliage, etc.)
- below-ground biomass (live roots more than 2mm diameter)
- dead wood
- litter
- organic soil carbon (including organic carbon in mineral soils. This includes live and dead roots of less than 2mm diameter. Each country can specify the depth to which it will measure soil organic carbon).

Forest carbon rights include the rights to the carbon found in these five pools.

2.2 Benefits, risks and obligations of carbon rights 'ownership'

Ownership of forest carbon rights carries with it both benefits, and risks and obligations.

It is beyond the scope of this Paper and the Country Papers to fully explore the links between 'ownership' of forest carbon rights and benefit-sharing in Solomon Islands, which will require its own policy analysis. However, in principle, the 'owner/s' of forest carbon rights will be entitled to:

- receive or control the carbon credits that are generated by a REDD+ project, where a project-based approach to REDD+ is taken; and
- a proportional share of the REDD+ revenues that are received by their national government, where a national approach to REDD+ is taken.

[8] The UNFCCC has requested that REDD+ countries estimate and report emissions and removals from five forest carbon pools when preparing their national greenhouse gas inventories. The UNFCCC has asked countries to use the most recent IPCC guidelines, as adopted or encouraged by the COP, as a basis for estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks: Conference of Parties, *Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries*, COP Decision 4/CP.15, UNFCCC, 9th plen mtg, UN Doc FCCC/CP/2009/11/Add.1 (18-19 December 2009) [1(c)]. See Intergovernmental Panel on Climate Change, *2006 Guidelines for National Greenhouse Gas Inventories* (WMO/UNEP, 2006) vol 4, ch 1, table 1.1 <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>. The five carbon pools specified by the IPCC 2006 Guidelines also apply to mangroves.

It is briefly noted, however, that benefit sharing is a complex issue in Solomon Islands. There is no simple, accepted State law mechanism for landowner associations (see Section 7.3 below) or the disbursement of income from property. Under customary laws, benefits should be shared in accordance with the customary laws prevailing in the area in question.

Ownership of carbon rights also carries risks and obligations. Obligations arise from the need for the 'owner' of the carbon rights to ensure, through the giving of undertakings (promises) either to the government as the counter-party or to a REDD+ investor, that the forest will be managed in a certain manner to ensure that a certain number of carbon offsets will be delivered over a given period of time. The ERPA will determine who bears the loss for under-delivery or non-delivery of credits. In the customary law context of Melanesia, there are significant legal barriers which prevent customary land 'owners' from adopting these contractual obligations in forest carbon projects, because the effect of the obligations may often be to dispose of or affect customary interests in land, which is generally prohibited by law (see Section 8).

The 'owner' of carbon rights also bears some of the risks if the carbon stored in the forests is released into the atmosphere during the life of the project, which may be a minimum of 10 – 20 years. This is known as 'loss of permanence', or a 'reversal'. Loss of permanence might occur through intentional release (such as by legal or illegal logging), unintended release (as a result of negligence), or through natural causes (such as a cyclone, wildfire or insect attack). To insure against the possibility that the forest carbon might be released, voluntary carbon standards (e.g. the Verified Carbon Standard) require the project proponent or the central administrator to set aside a certain number of carbon credits from the project into a buffer account in order to manage these risks ('a reversal buffer').

2.3 Why define forest carbon rights?

Clarifying forest carbon rights is an important part of REDD+ readiness and should be done within the broader framework of developing a national regulatory framework for REDD+.

Due to the low level of land registration in Solomon Islands, and the fact that land and forest 'ownership' and rights can be held by different groups/clans, it is extremely difficult to clearly identify who 'owns' the forest carbon at present in Solomon Islands (see the legal analysis of this in Section 4 of this Paper). Without legislation, identifying the actual 'owner/s' can be a costly and time-consuming process, and may not result in the level of certainty that a Project Proponent or buyer of carbon credits requires in order to invest in and support a REDD+ project.

2.3.1 Forest carbon rights must be clear for carbon trading to occur

For REDD+ countries that wish to participate in the carbon market, as is foreshadowed in Solomon Islands, it is highly desirable that they develop a clear policy and legislative framework for identifying and regulating carbon rights. This is because buyers of carbon credits from forest carbon projects want to know exactly who 'owns' and controls the underlying resource that is being traded, namely, the carbon rights. Buyers want an assurance that the carbon has not already been sold to someone else, and that it will not be sold to someone else in the future once they have 'bought' it (known as 'double-counting').

In particular, the following things need to be clear:

- the 'owner/s' of the carbon,. e.g. an individual or a landowner tribe, clan or group; and
- the boundaries of the land that will form the project area.[9]

What's the difference between 'carbon rights' and 'carbon credits'?

'Carbon rights' refer to the right to the benefits from exploiting the carbon in a forest. The holder of the carbon rights has the right to the legal or economic benefit generated by carbon emission reductions and removals. It can be thought of as a type of property right in the land and forest.

'Carbon credits' are the financial instruments that are issued once it is verified that emission reductions and removals from a project (or country) have been achieved. For example, under the Verified Carbon Standard, Verified Emission Units (VCUs) are issued. Carbon credits are equal to one metric tonne of carbon dioxide equivalent and are issued with a unique serial number so they can be tracked through carbon registries.

In carbon markets, it is the carbon credits that are traded, not the underlying forest carbon property rights.

2.3.2 Relevance of carbon rights to REDD+ funding modalities

Note that it is not necessary for a country to clarify carbon rights for all elements of a national REDD+ programme, only those which involve project-based activities and market funding which are indicated by the arrows in bold (see **Figure 2.1**).

[9] For example, the VCS AFOLU Requirements require a project proponent to provide a map of the project area, the coordinates of the project area and boundary, the total size of the project area, and details as to its ownership: Verified Carbon Standard, *Agriculture, Forestry and Other Land Use (AFOLU) Requirements* (VCS, Version 3.3, 4 October 2012) <http://v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%20v3.3_0.pdf> [3.4.1].

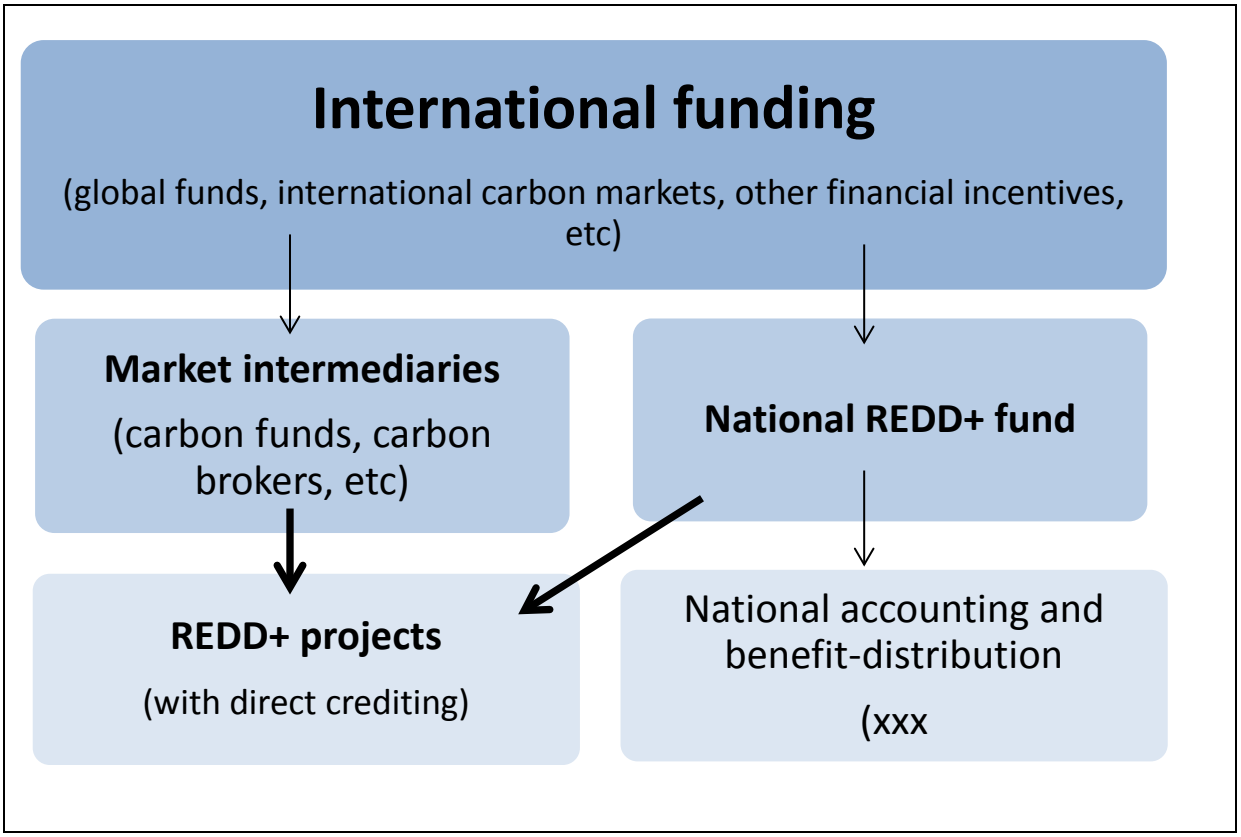


Figure 2.1 Elements of national REDD+ funding architecture for which forest carbon rights should be defined (indicated by arrows in bold)[10]

2.4 Approach and overarching principles

2.4.1 Decision-making framework

When designing a system to define and allocate forest carbon rights, countries need to make some key decisions, such as whether to nationalize carbon rights or base them on land and forest 'ownership', and whether to allow third parties (such as Project Proponents or logging companies) to hold or 'own' forest carbon rights. **Figure 2.2** below contains a decision tree illustrating this process.

[10] Adapted from Arild Vatn and Arild Angelsen, 'Options for a national REDD+ architecture' in Arild Angelson (ed) *Realising REDD+ - National Strategy and Policy Options* (CIFOR, 2009) 57, 64.

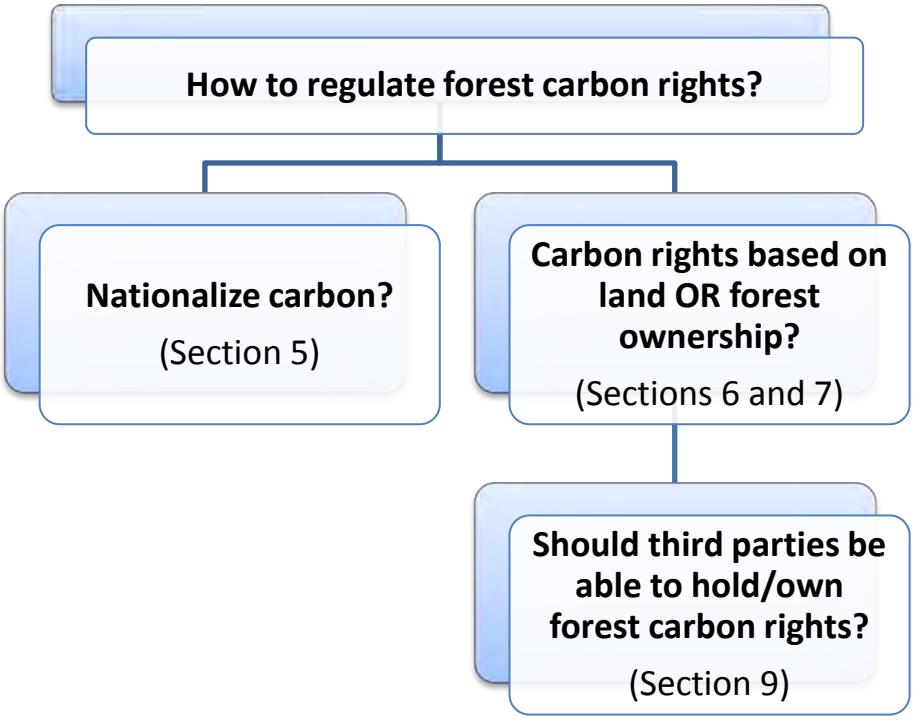


Figure 2.2 Decision-making tree for national carbon rights framework

2.4.2 Consistency with Solomon Islands' constitutional framework

The framework for forest carbon rights that is adopted should be consistent with Solomon Islands' constitutional framework and international legal obligations.[11]

The *Constitution* guarantees the right to protection from deprivation of 'property of any description' and of any 'interest or right over property of any description'.[12] This broad provision is likely to include carbon rights as a right attracting compensation. There is currently no Solomon Islands case law on this.

The *Constitution* also states that, in making provision for the application of laws (including customary laws), Parliament has a duty to 'have particular regard to the customs, values and

[11] This report has been prepared on the basis of the existing Constitution: *Constitution of Solomon Islands 1978* (UK) ('*Constitution*'). However, it should be noted that the *Constitution* is currently under review and a Federal Constitution has been drafted. The Bill bolsters protection of customary land, providing for social, spiritual, cultural and environmental impact studies before development is carried out and requiring free and informed consent of customary 'owners'. It also provides a right to a 'just and fair return' for use of resources and limits the government's right to acquire customary land. Further, the law of Solomon Islands is not easily accessible. Whilst some legislation and case law is available in hard copy or online, there is no comprehensive collection of the laws available. This Report is therefore subject to the proviso that, whilst every endeavour has been made to base it on the current law of Solomon Islands, including consultation with national collaborators, the author cannot be certain that all relevant primary material has been considered.

[12] *Constitution* s 8(1).

aspirations of the people of Solomon Islands'.[13] A similar phrase, 'provision for the application of customary laws', appearing in an earlier part of the *Constitution*,[14] has been interpreted widely as encompassing any legislation,[15] rather than laws designed specifically to govern *application* of laws.[16] Consequently, legislation, including legislation governing customary land, passed without reference to 'customs, values and aspirations of the people' might be open to challenge on the basis that it is unconstitutional. To date this argument does not appear to have been raised before the courts.

2.4.3 National Legislation or Provincial Ordinance?

The *Constitution* gives the national government the power to make legislation for 'the peace, order and good government of Solomon Islands.'[17] Clearly this provision is sufficiently broad to empower the national government to legislate on carbon rights. The provincial governments are also empowered to make laws within the province[18] in the form of ordinances.[19] This power is limited to specified matters 'or laws which are 'incidental to or consequential on' such matters.[20] These include some cultural and environmental matters. More specifically, provincial governments may codify and amend customary law about land and register customary rights.[21] Accordingly, reforms on carbon rights could be in the form of national legislation or provincial ordinances.

However, this would be at the expense of uniformity at the national level, and although provincial ordinances must be gazetted, they are not always easy to locate. Given that Solomon Islands intends to take a national approach to REDD+, with national accounting and a national benefit-sharing scheme, it is recommended that national legislation be used to establish a framework for carbon rights. While the options put forward in this Paper therefore concentrate on national legislation, policy makers should bear in mind the possibility of introducing change through provincial ordinances in a form such as the *Moli Wards Chiefs Council Ordinance 2010*.

[13] *Constitution* s 75(2).
[14] *Constitution* s 15(5)(d).
[15] *Tanavalu v Tanavalu* (Unreported, High Court, Solomon Islands, Awich LJ, 12 January 1998), available via www.paclii.org at [1998] SBHC 4. See further Jennifer Corrin 'Negotiating the Constitutional Conundrum: Balancing Cultural Identity with Principles of Gender Equality in Post Colonial South Pacific Societies' (2006) *The Indigenous Law Journal* 51.
[16] See e.g. the *Custom Recognition Act 2000*, which makes provision for proving customary law before a court. It has not yet become law.
[17] *Constitution* s 59.
[18] *Provincial Government Act 1997*, s 31(2) ('*Provincial Government Act*').
[19] *Provincial Government Act* s 30(1).
[20] *Provincial Government Act* s 31(1).
[21] *Provincial Government Act* s 26(3) and sch 3.

2.4.4 Consistency with Solomon Islands international legal obligations

The Pacific Islands Regional Policy Framework for REDD+ establishes safeguards which provide that REDD+ implementation must be in line with international instruments to protect the rights of indigenous peoples.[22]

The main international instruments that are relevant to the development of a framework for forest carbon rights are:

- **The United Nations Framework Convention on Climate Change (1992)**,[23] under which the Cancun Agreements are established. The Agreements request that developing countries follow a number of safeguards when developing and implementing national REDD+ strategies, which include respect for the knowledge and rights of indigenous people, and specifically notes the importance of the United Nations Declaration on the Rights of Indigenous Peoples.[24]
- The **United Nations Declaration on the Rights of Indigenous Peoples (2007)**,[25] which acknowledges the right of indigenous peoples to 'own', use, develop and control lands and resources which they have traditionally 'owned' and the obligation of States to give legal recognition accordingly,[26] and which incorporates the right of landowners to give or withhold their free, prior and informed consent to legislation, administrative measures and projects that may affect their land, territories and other resources.[27]

In accordance with these international instruments, Solomon Islands should ensure that it protects the property rights of indigenous peoples and gives effect to the principle of free, prior and informed consent when designing its framework for forest carbon rights.

[22] *Pacific Islands Regional Policy Framework for REDD+* (SPC/GIZ, 2012) [4.6.4].
[23] UN General Assembly, *United Nations Framework Convention on Climate Change: resolution / adopted by the General Assembly,* UNGAOR, 48th session, 86th meeting, Agenda Item 99, Supp No 49, UN Doc A/RES/48/189 (20 January 1994) ('*UN Framework Convention on Climate Change*').
[24] Conference of Parties, The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, COP Decision 1/CP.16, UNFCCC, 9th plen mtg, UN Doc FCCC/CP/2010/7/Add.1 (15 March 2011). The Cancun Agreements were made at COP 16 in 2010, and are set out in Dec. 1/CP.16. Paragraph 69 affirms that countries should promote and support the safeguards set out in Appendix I (para 2), when developing their national REDD+ strategies or action plans.
[25] UN General Assembly, *United Nations Declaration on the Rights of Indigenous Peoples : resolution / adopted by the General Assembly*, UNGAOR, 61st sess, 107th plen mtg, Agenda Item 68, Supp No 49, UN Doc A/RES/61/295 (2 October 2007) ('*UN Declaration on the Rights of Indigenous Peoples*').
[26] *UN Declaration on the Rights of Indigenous Peoples* art 26.
[27] *UN Declaration on the Rights of Indigenous Peoples* [19], [32]. Of direct relevance to forest carbon rights is art 26.2 which provides: 'Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.'

2.4.5 *Guiding principles for development of a carbon rights framework*

In developing and analysing the options for creating a framework for forest carbon rights, the authors have been guided by the following principles:

- **Simplicity**: to develop a carbon rights framework that is easily understood by everyone, including customary land 'owners', and builds on existing legal mechanisms
- **Maintaining customary connection with the land**: to develop a system that maintains landowners' customary connection to the land as much as possible
- **Transparency**: to identify options that minimize the risk of forest carbon rights being affected by fraud and corruption
- **Effectiveness:** to ensure that carbon rights are held by those who control the forest resource, in order to incentivize those people to maintain the forest
- **Clarity:** to establish clear rules for all types of land tenure, without creating complicated exceptions for some types of land tenure.

3. Land tenure in Solomon Islands

In order to understand how a framework for forest carbon rights might be developed in Solomon Islands, it is first necessary to understand the system of land tenure.

The *Land and Titles Act*[28] consolidates the law on land tenure, acquisition and registration. It deals with both customary and alienated land. Some of the provisions, drafted to deal with the changes that were made to land tenure at independence, are spent or outdated.[29] There have been some attempts to update the Act (see Appendix 1), but to date these have not been successful.

Table 3.1 below summarizes the different types of land tenure that exist in Solomon Islands:

[28] [Cap 133] ('*Land and Titles Act*')
[29] For example, the Act provided for interests of over 75 years held by non-Solomon Islanders immediately prior to independence to be converted to interests of 75 years (ss 100 and 101). The Act is silent on the legal position when these fixed-term estates and leases expire. It is unclear whether these interests will roll over or whether compensation for improvements must be paid if they do not.

Category of land tenure	Sub-category	% of land area	Limitations on title
Customary land		86%	Cannot be alienated except to a Solomon Islander
Alienated land	Public land	14%	
	Perpetual estate		
	Fixed-term estate		75 years (99 years if the land is public land)
	Leasehold	Minor	75 years

Table 3.1: Land Tenure Categories in Solomon Islands

3.1 Customary land

The *Land and Titles Act*[30] preserves the system of customary land holding. About 86% of land is still held as customary land, governed by customary law.[31] The Act states that, 'The manner of holding, occupying, using, enjoying and disposing of customary land shall be in accordance with the current customary usage applicable thereto, and all questions relating thereto shall be determined accordingly'.[32]

3.1.1 Customary land is not registered

Customary land is unregistered in Solomon Islands. It is therefore very difficult for outsiders to identify land boundaries for customary land or who 'owns' the land. There is currently no general legislation providing for the legal recognition or registration of landowning groups in Solomon Islands, apart from the *Customary Land Records Act*, which is not operating due to a lack of supporting regulations (see further Section 7.1).

3.1.2 Prevalence of land 'ownership' disputes

Disputes over 'ownership' of customary land are common in Solomon Islands. Compounding this problem is the fact that there are two separate regimes dealing with customary land appeals, one determining customary land 'ownership' under the *Local Court Act*[33] through the Local Courts, and the other under the *Forest Resources and Timber*

[30] *Land and Titles Act* s 239(1).
[31] *Land and Titles Act* s 239(1).
[32] *Land and Titles Act* s 239(1).
[33] [Cap 19] ('*Local Courts Act*').

Utilisation Act[34] which deals with the grant of timber rights (Customary Land Appeal Courts (CLAC)). The uncertainty created by the relationship between the two regimes is unsatisfactory.

- **Regime 1: Disputes over customary land 'ownership'**

Disputes over customary land 'ownership' must be referred initially to the traditional Chiefs.[35] A party who is dissatisfied with the Chiefs' decision may then lodge a claim with the Local Court. From there, appeal lies to the CLAC. Parties may then appeal to the High Court on a point of law (which does not include a point of customary law).[36] There is then a final appeal, to the Court of Appeal on a point of law, but only with leave.[37]

- **Regime 2: Disputes over the 'ownership' of timber rights**

The CLAC hears appeals from decisions of the Provincial Executive under the *Forest Resources and Timber Utilisation Act.*[38] A court case in 2007, *Majoria v Jino* (see Box 3.1) exposed the confusion that is caused by the two conflicting regimes. The effect of this decision means that a party who has established 'ownership' through Regime 1 can challenge a subsequent determination of timber rights made through Regime 2, which is precisely what the forestry legislation was intended to prevent.

In any event, both the Local Courts and the Customary Land Appeal Courts are mostly inoperative and there is a backlog of cases to be dealt with.

Box 3.1 Example of conflicting land 'ownership' dispute mechanism: *Majoria v Jino*

The uncertain relationship between the two regimes that deal with disputes regarding customary land was exposed in *Majoria v Jino,*[39] where it was pointed out that whilst it was clear that referral to the Chiefs was a prerequisite to lodging a claim with the Local Court, the status of any decision made by the Chiefs had not been specified.

In that case, after a decision regarding 'ownership' had been made by the Marovo Council of Chiefs under regime 1, the unsuccessful party applied to the CLAC for a determination of timber rights under regime 2. It was held by the High Court that, as the Chiefs' decision was made under regime 1, it was not binding on the Customary Land Appeal Court acting under regime 2. The Court of Appeal reversed this decision, stressing 'the important role assigned

[34] [Cap 40] ('*Forest Resources and Timber Utilisation Act*').
[35] *Local Courts Act* s 12.
[36] *Land and Titles Act* s 256(3).
[37] *Land and Titles Act* s 257(4).
[38] *Forest Resources and Timber Utilisation Act* s 10(1).
[39] (Unreported, Court of Appeal, Solomon Islands, Lord Slynn of Hadley P, Adams JA, Salmon JA, 1 November 2007), available via www.paclii.org at [2007] SBCA 20.

by the Parliament to the Chiefs and their decisions for the purpose of determining disputes of customary land'.[40] The appeal court concluded that a party who disagreed with a decision of the Chiefs, but who declined to take advantage of the legislative scheme for reconsidering that determination by invoking the jurisdiction of the local court must be considered to be bound by the decision.[41]

This decision means that a party who has established 'ownership' through regime 1 may challenge a subsequent determination of timber rights made through regime 2, which is precisely what the forestry legislation was intended to prevent.

3.1.3 Limitations on dealing in customary Land

Under the *Land and Titles Act* only Solomon Islanders can 'own' an interest in customary land. A contract or agreement that purports to transfer customary interests in customary land can be declared void (**Box 3.2**).[42] There is a real possibility that the contracts that underpin a forest carbon contact could be declared void under this provision.

Customary land cannot be transferred or leased to a non-Solomon Islander unless that person is married to a Solomon Islander or inherits the land and is entitled to an interest under customary law.[43] Apart from transactions permitted by customary usage between Solomon Islanders, the only dealings with customary land that are authorised are compulsory acquisitions for public purposes[44] or leases to the Commissioner of Lands or a Provincial Assembly.[45] It is not clear whether licences allowing non-islanders to use the land are permitted, but as 'no person other than a Solomon Islander may hold or enjoy any interest of whatsoever nature in, over or affecting customary land',[46] it would appear not. However, in practice, licences are often granted.

Transfers between Solomon Islanders are permitted and subject to such conditions as are imposed by customary law.[47] However, whilst it can be said that inheritance is the main

[40] *Marjoria v Jino* (Unreported, Court of Appeal, Solomon Islands, Lord Slynn of Hadley P, Adams JA and Salmon JA, 1 November 2007), available via www.paclii.org at [2007] SBCA 20. See also *Lauringi v Lagwaeano Sawmilling and Logging Limited* (Unreported, High Court, Solomon Islands, Awich J, 28 August 1997), available via www.paclii.org at [1997] SBHC 61.
[41] Ibid.
[42] *Land and Titles Act* s 241(1).
[43] *Land and Titles Act* s 240.
[44] *Land and Titles Act* s 71. For the meaning of 'public purpose' see *Talasasa v the Attorney-General* (Unreported, High Court, Solomon Islands, Chetwynd J, 25 May 2012), available via www.paclii.org at [2012] SBHC 85.
[45] *Land and Titles Act* s 60
[46] *Land and Titles Act* s 241(1).
[47] *Land and Titles Act* s 239(1).

method of land transfer,[48] it is hard to generalise about conditions which may be attached to transfers, as customary laws are so diverse.[49]

The only means of transferring an interest in customary land is to alienate it through sale or lease to the Commissioner of Lands.[50] It is then registered as a perpetual estate.

Box 3.2 Extracts from *Land and Titles Act* restricting dealings in customary land

Customary land

239. (1) The manner of holding, occupying, using, enjoying and disposing of customary land shall be in accordance with the current customary usage applicable thereto, and all questions relating thereto shall be determined accordingly.

Dealings in customary land

240. Subject to the provisions of this Act, every transaction or disposition of or affecting interests in customary land shall be made or effected according to the current customary usage applicable in the land concerned.

Restrictions on disposition of customary land

241(1) Except to the extent to which the contrary is expressly provided in this Act, no person other than a Solomon Islander may hold or enjoy any interest of whatsoever nature in over or affecting customary land.

(2) …

(3) Every contract, agreement or arrangement made or entered into, orally or in writing, whether before or after the commencement of this Act, shall, so far as it has or purports to have the purpose or effect of in any way, directly or indirectly, defeating, evading or preventing the operation of subsection (1), be utterly void and of no effect …'

3.2 Alienated land

The balance of land in the Solomon Islands is alienated land (14%), held either by the State or registered 'owners'. The *Land and Titles Act* creates a 'Torrens-type' system of registration, conferring indefeasible title on the registered 'owner', subject to any overriding

[48] J Ipo, 'Land and Economy' in H Laracy (ed) *Ples Blong Iumi: Solomon Islands, the Past Four Thousand Years* (Institute of Pacific Studies, University of the South Pacific, 1989) 121,122-123.
[49] Ibid 122.
[50] *Land and Titles Act* s 60.

interests such as rights of way or easements.[51] There is no freehold title in Solomon Islands: alienated land may be registered as either a perpetual estate, fixed-term estate or leasehold estate.

The paragraphs below describe the different categories of alienated land.

3.2.1 Perpetual estate

A perpetual estate is a registered interest in land which may only be held by a Solomon Islander,[52] the Commissioner of Lands, or by one of a limited list of persons, including a Solomon Islands registered company with at least 60% of its shares owned by Solomon Islanders.[53]

3.2.2 Fixed-Term estate

A fixed-term estate may be held by any person, but the term may not exceed 75 years,[54] except in the case of public land where a term of 99 years may be granted by the Commissioner.[55] Such estates are also subject to the conditions in the grant, which almost invariably include a condition that the land will not be sold, leased or mortgaged without the consent of the Commissioner or the 'owner' of the perpetual estate. Estates are also subject to conditions concerning maintenance of boundary marks; keeping open access roads; and non-removal of gravel, earth etc.[56]

3.2.3 Leasehold estate

A leasehold estate may be held by any person, but the term may not exceed 75 years. The grant of a lease to a person other than a Solomon Islander requires the prior written consent of the Commissioner.[57]

4. Who 'owns' the forest carbon rights under current laws?

4.1 Is 'ownership' an appropriate term?

It should be noted that the search for 'ownership' is based on assumptions regarding property that do not necessarily apply in Solomon Islands. Whilst the term 'ownership' is

[51] These are listed in *Land and Titles Act* s 114.
[52] Section 110 of the *Constitution* restricts the holding of a perpetual estate in land to Solomon Islanders.
[53] *Land and Titles Act* s 112(4).
[54] *Land and Titles Act* s 101.
[55] *Land and Titles Act* s 132(1)(b).
[56] *Land and Titles Act* s 133.
[57] *Land and Titles Act* s 143(2).

frequently employed, it is not well suited to the customary concept of land holding, which, under customary law, is often multi-layered and may permit different groups to hold different interests relating to management and use of customary land and its natural resources.

One way of dealing with this is to employ non-technical rather than legal terms and to investigate three basic questions: (a) who holds an interest in land; (b) what is the content of that interest; and (c) what is the subject matter of the interest?[58] This approach avoids the assumption that ownership is a universal concept and allows for the fact that Solomon Islanders may have different interests (or rights) in land with varying content and subject matter. For this reason, the term 'ownership' has been placed in inverted commas in this Paper.

4.2 Who 'owns' the forest carbon in natural forests?

Conclusion:

'Ownership' of forest carbon in customary land, planted trees, soil carbon, and mangroves, is held by customary land 'owners', but it is unclear to outsiders who these people might be as it is determined according to customary law, which differs from place to place. In addition, rights of 'ownership', management, and use of forest resources in one area may be held by different tribes or clans.

The legal reasons for this conclusion are set out below.

4.2.1 Forests on customary land

There is currently no express statement on carbon 'ownership' in the written law. As the *Land and Titles Act* provides that 'holding' and 'use' are governed by customary laws,[59] where forest is on customary land it will be 'owned' in accordance with customary law. The *Constitution* gives formal recognition to customary law, which 'shall have effect as part of the law of Solomon Islands' provided that it is not inconsistent with the *Constitution* or an Act of Parliament.[60] Customary law is defined as 'the rules of customary law prevailing in an area of Solomon Islands'.[61] This recognises that customary laws differ from place to place within Solomon Islands.

[58] Anthony Allott, 'Towards a Definition of Absolute Ownership' (1961) 5 *Journal of African Law* 99.
[59] *Land and Titles Act* s 239(1).
[60] *Constitution* s 75(1) and sch 3, para 3(3).
[61] *Constitution* s 144(1). The details regarding application of customary law are left to be provided by Parliament: see *Customs Recognition Act* 2000, not yet in force.

However, in Solomon Islands, difficulties often arise in identifying the correct customary 'owner' of forest under customary law. To combat the difficulties in determining customary rights of land 'ownership' and the use of forest resources, the *Forest Resources and Timber Utilisation Act* was passed. The framework for the grant of forestry rights has serious implications for forest carbon rights over customary land as it has resulted in a situation where the land 'owners' may not be the same people as the 'owners' of the timber rights. The carbon rights may belong to either of these groups of 'owners': See Box 4.1.

Box 4.1 'Owners' of timber rights under forestry legislation may differ from customary land 'owners'

The rights to timber use and extraction in Solomon Islands are governed by the *Forest Resources and Timber Utilisation Act*. In the case of all land, the *Forest Resources and Timber Utilisation Act* prohibits felling trees or removing timber from any land without a license.[62] This is subject to some minor exceptions, such as firewood or un-milled timber.[63]

The Act provides that a person wishing to acquire timber rights on customary land must obtain the Commissioner of Land's consent to negotiate with, amongst others 'the owners of such customary land'.[64] This is done according to the following process:

- A meeting is held with stakeholders including 'the customary land 'owners'' to discuss and determine the application. [65]
- The application must be rejected if 'no agreement is reached between the applicant and the customary land 'owners''.[66]

The purpose of the process is to identify the named representatives of the 'the customary land 'owners''. Once these people have been identified, that process sets in stone a list of those entitled to grant timber rights. However, in practice those identified as 'landowners' may not be the true customary land 'owners' but may only be those who have the right to grant timber rights and, because of the multiple level of customary interests that may exist in customary land (multiple usufructs), they may not be the same people as those with more pervasive interests in the land.

This has set up a serious dilemma between customary land 'owners' and those who assert the customary right to control the forest resource, as the *Forest Resources and Timber*

[62] *Forest Resources and Timber Utilisation Act* s 4(1).
[63] *Forest Resources and Timber Utilisation Act* s 4(1)(a).
[64] *Forest Resources and Timber Utilisation Act* s 7(1).
[65] *Forest Resources and Timber Utilisation Act* s 8(1) and (3).
[66] *Forest Resources and Timber Utilisation Act* s 9(1).

Utilisation Act may permit those with a restricted interest in land to dispose of the most valuable fruit of the land.

In *Tovua v Meki*[67] Ward CJ said:

> *The procedure identifies persons to represent the group as a whole. Once the procedure has been followed, the people named by the area council are the only people entitled to sign an agreement to transfer those rights and that are clearly, as the parties to the agreement, the people to whom the royalties should be paid. … I have no way of knowing, on the evidence before me, whether the persons identified by the Area Council [now Provincial Executive] as entitled to grant timber rights have that entitlement because they are landowners or because they have some secondary rights and neither can I question their decision on that.*

In addition to the difficulties described above in resolving competing claims under customary law to land 'ownership' and control of the forest resource on that land, there are also problems in identifying who are the legitimate representatives of the customary land 'owners' with the customary authority to represent the tribe or clan.

In decision-making on 'ownership' and use, the community is generally represented by the customary chiefs. However, given the changes in customary society and practices, difficulties have arisen in identifying exactly who the chiefs are.

In *Lauringi v Lagwaeano Sawmilling and Logging Limited,*[68] for example, the plaintiffs had been determined to be the customary land 'owners' by the Marodo Council of Chiefs and this decision had been confirmed by the Malaita Local Court. However, the defendants refused to accept the decision of the Local Court and challenged the jurisdiction of the Marodo Council of Chiefs on the basis that the members did not meet the definition of Chiefs in the area where the land was situated. An interim injunction was granted by the High Court to restrain the defendants from continuing a logging operation on the land while the matter went on appeal to the Customary Land Appeal Court. There is no record of how the matter was decided.[69]

[67] [1988/89] SILR 74, 76.
[68] (Unreported, High Court, Solomon Islands, Lungolo-Awich J, 28 August 1997) available via www.paclii.org at [1997] SBHC 61.
[69] (Unreported, High Court, Solomon Islands, Lungolo-Awich J, 22 February 2000), available via www.paclii.org at [2000] SBHC 6.

4.2.2 *Forests on alienated land*

The position in relation to forest carbon on alienated land appears to be that, where no fixed-term estate or lease has been granted, the forest carbon is 'owned' by the registered estate holder. However, if a fixed-term estate has been granted, the position is less clear.

In the following two instances, the Minister may make declarations conserving public land.

- **State Forests**

The Minister may declare public land (land registered in the name of the Commissioner) to be a state forest.[70] Use of a state forest for any of the broad list of purposes listed in the Act, including felling timber, requires a permit from the Commissioner of Forest Resources.[71] No interest or licence in a state forest may be granted without the prior written consent of the Commissioner of Forest Resources.[72] This restriction must be noted on the land register, providing notice to third parties that they must not interfere with the forest.

- **Forest Reserves**

The Minister may declare a forest to be a forest reserve but only to protect the forest or other vegetation in any rainfall catchment area for the limited purpose of conserving water resources. The notice declaring a forest reserve must specify rights which may be exercised in the forest reserve.[73] In the case of a forest reserve the rights to use the forest are determined by the Minister's declaration.[74]

4.3 Who 'owns' the forest carbon in planted trees?

4.3.1 *Customary land*

Rights relating to trees planted on customary land are determined by customary laws. As stated above, this differs from place to place and without empirical evidence, the position cannot be stated with any certainty. However, as a general rule, it would appear that those who plant trees are the most likely to have the rights to use them.

4.3.2 *Alienated land*

As a general rule, the registered estate holder will 'own' trees planted on land, as registration carries with it 'all implied and express rights and privileges belonging or appurtenant' to that

[70] *Forest Resources and Timber Utilisation Act* s 20.
[71] *Forest Resources and Timber Utilisation Act* ss 22, 23.
[72] *Forest Resources and Timber Utilisation Act* s 21.
[73] *Forest Resources and Timber Utilisation Act* s 24.
[74] *Forest Resources and Timber Utilisation Act* s 24.

estate.[75] Further, a fixed-term estate holder is specifically entitled to use and enjoy both the land and its produce, for the period of the fixed-term.[76]

In the absence of an express term in the lease transferring to the lessee 'ownership' of trees planted by him or her, the position of a lease-holder is not so clear. There is no specific implied right to the produce of the land, but the implied right for the lessee to be allowed to 'peaceably hold and enjoy the leased premises'[77] during the term of the lease could be taken to include such a right. However, registered title is subject to certain overriding interests. These include 'profits' subsisting at the time of first registration[78] and the rights of a person in actual occupation of the land or in receipt of 'profits'.[79] This is particularly pertinent, as 'a profit' means a right to go onto someone else's land to take something from it, specifically including 'soil or the products of the soil'.[80]

Accordingly, in the case of trees planted at the time of first registration, if customary land 'owners' or another third party can establish a right to trees existing at that time, they will 'own' the trees, as opposed to the estate holder.

4.4 Who 'owns' the carbon in the soil?

The *Constitution* does not state specifically who 'owns' the soil, but, by implication from the declaration that all natural resources are vested in the people and the government of Solomon Islands,[81] it would appear that the soil is 'owned' by the people and the government of Solomon Islands.

4.4.1 Customary land

As with forest carbon, it is unclear as to who currently 'owns' the soil carbon as, in the case of customary land, the question is governed by customary laws. There does not appear to be any limit on the depth of soil 'owned' by the customary landholder.

4.4.2 Alienated land

In the case of alienated land, the common law applies, which provides that land includes subsoil.[82] However, the extent of the control which a landowner may exercise over subsoil is

[75] *Land and Titles Act* s 109.
[76] *Land and Titles Act*s s 113(1).
[77] *Land and Titles Act* s 147(b).
[78] *Land and Titles Act* s114(a).
[79] *Land and Titles Act* s114(g).
[80] *Land and Titles Act* s 2(1).
[81] *Constitution* preamble.
[82] LexisNexis, *Halsbury's Laws of Australia,* vol 22 (at 25 September 2008) 355 Real Property, '1 Introduction' [355-20]. This is based on the maxim *cujus est solum, ejus est usque ad coelom ed ad*

uncertain; at the least, a landowner has the right to use the soil to the extent necessary for the ordinary use and enjoyment of the land.[83] This view is supported by the *Land and Titles Act*, which only excludes from the definition of land (which is capable of being held) minerals and 'any substances in or under land which are of a kind ordinarily worked for removal by underground or surface working'.[84]

The position in relation to who 'owns' the soil carbon on alienated land appears to be that, where no fixed-term estate or lease has been granted, and in the absence of a pre-existing profit or occupier entitled to profits, at the time of first registration the soil carbon is 'owned' by the registered estate holder. However, if a fixed-term estate or lease has been granted, the position is less clear.

4.4.3 Reservation of mineral 'ownership' to the Crown

The *Mines and Minerals Act*[85] vests all minerals 'in or under all lands' in 'the people and the Government of Solomon Islands'.[86] This has been held by the High Court to mean that minerals, including gold, vest in the Crown.[87] The use of phrase 'all lands' makes it clear that mineral deposits 'in or under' customary land are included. However, this is not accepted by customary communities, which regard such deposits as part of the customary land.

'Minerals (including oils and gases)' are excluded from the definition of land in the *Land and Titles Act*.[88]

4.5 Who 'owns' the carbon in the mangroves?

Significant amounts of carbon are stored and sequestered in coastal ecosystems of tidal marshes, mangroves and seagrass meadows. This is often referred to as 'Blue Carbon'.[89] Under some REDD+ mechanisms, mangroves can be the subject of forest carbon projects (Box 4.3). Mangrove forests in Solomon Islands are estimated to cover approximately

infernos, meaning that ownership of land extends below that land to the middle of the earth: *Re Lehrer and Real Property Act 1900* [1960] NSWR 570.
[83] *Di Napoli v New Beach Apartments* [2004] NSWSC 52.
[84] *Land and Titles Act* s 2.
[85] [Cap 42] ('*Mines and Minerals Act*').
[86] *Mines and Minerals Act* s 2.
[87] *Knight v Attorney General* (Unreported, High Court, Solomon Islands, Palmer CJ, 6 May 2005).
[88] *Land and Titles Act* s 2(1).
[89] For a discussion of the emerging international policy frameworks for Blue Carbon, see: Dorothée Herr, Emily Pidgeon, and Dan Laffoley, *Blue Carbon Policy Framework: Based on the discussion of the International Blue Carbon Policy Working Group* (International Union for Conservation of Nature & Conservational International, 2012)

49,805 hectares.[90] It is therefore important to determine who 'owns' the carbon in tidal marshes, mangroves and seagrass meadows.

Conclusion: In Solomon Islands, 'ownership' of the foreshore below high watermark is uncertain. Accordingly, the 'ownership' of carbon in mangroves is also uncertain. Because of the uncertainties in this area, the issue is the subject of a Solomon Islands Law Reform Commission Report, which is awaiting release.

The legal reasons for this conclusion are set out below.

The *Land and Titles Act* [91] states that, 'The manner of holding, occupying, using, enjoying and disposing of customary land shall be in accordance with the current customary usage applicable thereto, and all questions relating thereto shall be determined accordingly'.[92] However the legislation does not expressly state the position regarding land below high water mark and the case law on this is conflicting.[93]

At one time the High Court regarded the issue as governed by the common law, and these areas were regarded as belonging to the Crown.[94] However, according to the latest High Court decision, reefs and foreshore may be under customary management if it can be proved that this was the case prior to 1 January 1969. [95] This means that if customary 'owners' have undisputed evidence that they 'owned' the mangrove area before that date they should be able to establish a legal right to 'ownership'. Because of the uncertainties in this area have the issue is the subject of a Solomon Islands Law Reform Commission Report, which is awaiting release.[96]

[90] This figure is based on FRIS data from the 1994 National Forest Inventory. The current figure, therefore, is likely to be lower.
[91] *Land and Titles Act* s 239(1).
[92] *Land and Titles Act* s 239(1).
[93] Compare *Allardyce v Laore* [1990] SILR 174 with *Waleilia v Totorea* (Unreported, Magistrates Court (Auki), Solomon Islands, 1992).
[94] *Allardyce v Laore* [1990] SILR 174.
[95] *Combined Fera Group and Others v Attorney General* (Unreported, High Court, Solomon Islands, Palmer J, 19 November 1997), available via www.paclii.org at [1997] SBHC 55.
[96] See further Jennifer Corrin, 'Customary land in Solomon Islands: A victim of legal pluralism' in Anthony Angelo and Yves-Louis Sage (eds), *Droit Foncier Et Gouvernance Judiciaire Dans Le Pacifique: Land Law and Governance in the South Pacific* (Revue Jurique polynesienne, 2011) 361, 231-232; Jennifer Corrin, 'Ownership of foreshore, reefs and seabed in Solomon Islands' 5 *newSPLAsh* 18.

Box 4.2 Mangroves and opportunities under REDD+

Although it is possible for countries to include mangrove specific activities in their national REDD+ strategies, it is not yet clear whether the emerging UNFCCC framework for REDD+ will include such activities.[97]

In the meantime, it is possible to generate carbon credits from projects to restore and conserve wetlands and mangroves under the following mechanisms and standards:

- **CDM Afforestation/Reforestation projects**, for which the Executive Board has approved a large-scale[98] and small-scale[99] methodology concerning mangroves
- **Verified Carbon Standard** (VCS), which recently recognised Wetlands Restoration and Conservation as an eligible project category (October 2012), covering areas including mangroves, salt marsh and seagrass meadows.[100]

5. Could the State take 'ownership' of forest carbon rights?

Conclusion: The State cannot take 'ownership' of forest carbon rights unless compensation is paid. The legal reasons for this are set out below.

An alternative to forest carbon being 'owned' by landowners is for the State to assume 'ownership' of forest carbon rights. Under this option, the rights (and liabilities) in forest carbon would be reserved exclusively for use by the State, in a similar way in which the rights to mineral resources and crude oil is reserved to the State. [101] This is sometimes described as the 'nationalisation' of forest carbon rights.

Given that carbon is a natural resource, the statement in the preamble of the *Constitution* that 'the natural resources of our country are vested in the people and the government of Solomon Islands' suggests that 'ownership' of forest carbon may vest in the Crown on behalf of the people of Solomon Islands. The difficulty with this proposition is that, under the

[97] For a discussion on the potential for this, see Dorothée Herr, Emily Pidgeon, and Dan Laffoley, *Blue Carbon Policy Framework: Based on the discussion of the International Blue Carbon Policy Working Group* (International Union for Conservation of Nature & Conservational International, 2012) 13 – 14.
[98] See the methodology: Afforestation and reforestation of degraded mangrove habitats, AR-AM0014, Ver. 01.0.0.
[99] See the methodology: Simplified baseline and monitoring methodology for small scale CDM afforestation and reforestation project activities implemented on wetlands, AR-AMS0003, Ver. 02.0.0. Small-scale projects are defined as removing less than 16,000 tonnes of CO2/year and are developed or implemented by low income communities.
[100] Verified Carbon Standard, *Agriculture, Forestry and Other Land Use (AFOLU) Requirements* (VCS, Version 3, 2012) <http://v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%20v3.3_0.pdf> 23 – 30.
[101] *Mines and Minerals Act* s 2(1).

common law, the preamble cannot create a right, but is only available as a guide to interpretation.[102] The preamble has been interpreted broadly by the Court of Appeal. For example, in *Maetia v Reginam*,[103] natural resources were held to include birds.

Given the conclusion in Section 4 above that customary land 'owners' appear to hold the property rights in forest carbon under customary law, a legislative act by the Government to reserve all forest carbon rights to the State is likely to encounter the following difficulties:

- The *Constitution* guarantees the right to protection from deprivation of 'property of any description' and of any 'interest or right over property of any description'.[104] This broad provision is likely to include carbon rights as a right attracting compensation. There is currently no Solomon Islands case law on this. Such compensation, could, however, be paid under the terms of a national REDD+ benefit-sharing plan, assuming that the provisions of the scheme effect fair and equitable payments.
- While the Constitution allows for compulsory acquisition of land, this power may only be exercised in the public interest and subject to the following conditions:-

  (a) the taking of possession or acquisition is necessary or expedient in the interests of defence, public safety, public order, public morality, public health, *town or country planning* or the *development or utilisation of any property in such a manner as to promote the public benefit*; and

  (b) there is reasonable justification for the causing of any hardship that may result to any person having an interest in or right over the property.[105]

  Where any land is compulsorily acquired, any rights in the land are converted into claims for compensation. Given the sensitivity of land acquisitions, the power to compulsorily acquire land is seldom used. For this reason, use of this option is not pursued further in this paper.

- 'Nationalisation' of carbon rights would probably be contrary to the Safeguards set out in the Pacific Islands Regional Framework for REDD+.

[102] *Minister for Provincial Government v Guadalcanal Provincial Assembly* (Unreported, Court of Appeal, Solomon Islands, Kapi, P, Williams Goldsborough JJA, 11 July 1997), available via www.paclii.org at [1997] SBCA 1.
[103] (Unreported, Court of Appeal, Solomon Islands, Los JA, 21 October 1994), available via www.paclii.org at [1994] SBCA 4.
[104] *Constitution* s 8(1).
[105] *Constitution* s 8(2).

5.1 'Deeming' State 'ownership' of carbon rights

Must the State 'deem' 'ownership' of forest carbon rights in order to participate in any emerging UNFCCC carbon trading mechanism for REDD+? No. It is not necessary for a State to 'deem' itself 'owner' of carbon rights on behalf of the domestic 'owners' of those rights in order for the State to participate in intergovernmental or other international carbon finance transactions that require a national level counter party, such as Solomon Islands Government.

By way of comparison, all carbon units created under the Kyoto Protocol are created by an act of international law, namely the ratification of the treaty. All credits are therefore 'owned' and held by governments under international law between the countries that ratified the treaty, with the carbon credits (Certified Emission Reductions) that are generated, being 'owned', held and traded by the State Parties. No 'deeming' of 'ownership' is required for this to occur. However the Kyoto Protocol clearly envisages that States may transfer their rights (credits) down to the sub-national actors who carry out CDM projects. This is done by the State Party authorizing, through its Designated National Authority, the private entities to hold, 'own' and trade the Certified Emission Reductions generated by the project.[106] However, it should be noted that it is not yet clear whether UNFCCC will adopt the same approach in its emerging REDD+ regime.

6. Proposal: Allocate carbon rights based on land 'ownership'

6.1 What should the definition cover?

The first step in developing a legal framework for carbon rights is to define by legislation exactly what is being 'owned'.

The statutory definition should be comprehensive and should address both:

- stored forest carbon: whose emission will be avoided); and
- carbon sequestration rights: the carbon that will be sequestered (absorbed) by carbon sinks (forests and soil) in the future.

[106] *Kyoto Protocol* art 12(9). For a discussion on this point, see Leo Peskett and Gernot Brodnig, *Carbon Rights in REDD+ - Expoloring the Implications for Poor and Vulnerable People* (World Bank, 2009) 7. See also Charlotte Streck and Matthew Wemaere, 'Chapter 3: Legal Ownership and Nature of Kyoto Units and EU Allowances' in David Freestone and Charlotte Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms* (Oxford University Press, 2005)..

6.1.1 Carbon pools

The definition of forest carbon rights should also address who 'owns' the carbon contained in the five carbon pools:[107]

Where voluntary REDD+ projects are concerned, the particular methodology to be used will usually specify which of these five carbon pools the Project Proponent must include and measure as part of its REDD+ project.[108]

It is therefore suggested that the legislative definition of 'forest carbon rights' includes each of the five carbon pools so that the position as to who 'owns' the carbon in each of these carbon pools is clear.

6.1.2 Consistency across Melanesian countries

Melanesian countries should consider whether it is possible to have a consistent definition of forest carbon rights across PICs in order to facilitate a regional approach to REDD+ and the management of forest carbon rights, including bundling, under the Pacific Islands Regional Policy Framework for REDD+.

6.2 Amend the definition of 'land' to include 'forest carbon rights'

Linking forest carbon rights to land 'ownership' has the following advantages:

- Simplicity, as land 'owners' will 'own' the carbon
- Land 'owners' would retain control of their land and the carbon.

To make it clear that land includes forest carbon rights, the *Land and Titles Act* (section 2) could be amended to:

- insert a definition of 'forest carbon rights' (see Box 6.1 below); and
- alter the current definition of land by inserting the underlined words in the existing definition:

> 'land' includes land covered by water, all things growing on land and buildings and other things permanently fixed to land, <u>and forest carbon rights,</u> but does not include any minerals (including oils and gases) or any substances in or under

[107] As discussed above in Section 2, the IPCC has identified five carbon pools that constitute forest carbon under the forest land use category. Under the UNFCCC framework, countries should measure and report against each of these carbon pools when reporting on the greenhouse gas emissions from their Agriculture, Forestry and Other Land Use (AFOLU) sector.
[108] For example, this is a requirement under the VCS: Verified Carbon Standard, *Agriculture, Forestry and Other Land Use (AFOLU) Requirements* (VCS, Version 3, 2012) <http://v-c-s.org/sites/v-c-s.org/files/AFOLU%20Requirements%20v3.3_0.pdf> [4.3.1].

land which are of a kind ordinarily worked for removal by underground or surface working.

The existing definition of customary land need not be amended as it incorporates the definition of land referred to above.

Box 6.1 Proposed definition of 'forest carbon rights'

'Carbon sequestration' means the process by which land, trees or forest absorb carbon dioxide from the atmosphere.

'Forest carbon rights' in relation to land means the exclusive legal right to obtain the benefit (whether present or future) associated with the stored forest carbon and any carbon sequestered in the future, by any existing or future tree or forest on the land, and includes the carbon contained in:

- above-ground biomass
- below-ground biomass
- dead wood
- litter, and
- soil organic matter.

'Land' includes forest carbon rights.

'Soil organic matter' means the organic matter found in soil to a depth of [insert number] metres.

Inserting a definition of 'forest carbon rights' into the *Land and Titles Act* would create a consistent definition that could apply across all categories of alienated land. However, the situation is more complex with customary land, where 'ownership' and/or control of land and forests can be held by different groups or clans.

This statutory definition could also be referred to for consistency in different land transaction instruments, such as in REDD+ contracts and leases.

7. Identifying and recording the 'owners' of forest carbon rights

Section 4.2 described the difficulties of identifying who 'owns' the carbon in the forests under the existing legal framework for customary land because the land and forest can be 'owned' by different groups under customary law. One way of overcoming this problem is by using

the Customary Land Records Act to identify and record which customary group 'owns' the forest carbon rights in a particular land area.

7.1 Recording 'ownership' of forest carbon rights under Customary Land Records Act

The *Customary Land Records Act*[109] could provide a useful mechanism for recording the 'ownership' of forest carbon rights in customary land. The was enacted in 1994 to provide a mechanism for recording customary land boundaries and the names of land-holding groups and their representatives for the purposes of any dealing with recorded land. The Act provided for the establishment of an office of National Recorder, a Central Land Record Office and provincial Land Record Offices. In the late 1990s an office was established, some appointments made and some initial awareness-raising carried out.

However the Act is currently inoperative as the delegated legislation required to give effect to the Act has not yet been made.[110] In order for it to become operative, regulations are required to provide the standard forms referred to in the Act and the machinery for the administration of the Act needs to be put in place. The Central Land Record Office was burnt down during the tensions in about 2000, and never re-established.

Table 7.1 sets out the advantages and disadvantages of recording 'ownership' of forest carbon rights under the *Customary Land Records Act*.

Table 7.1 Advantages and disadvantages of recording 'ownership' of forest carbon rights under *Customary Land Records Act*

Advantages	Disadvantages
The process of recording customary 'ownership' of forest carbon rights does not result in land registration or a registration of property interests, but only in 'recording'. Land will therefore remain in customary tenure.	There is some uncertainty regarding 'ownership' as recording does not create an indefeasible or formal title on any individual or group
The process identifies the leaders with authority to deal with the land	A 'record' is not transferable to non-Solomon Islanders, as it is still customary land and therefore subject to the bars on dealings referred to above

[109] [Cap 132] ('*Customary Land Records Act*').
[110] *Customary Land Records Act* s 21.

Advantages	Disadvantages
The process delineates agreed boundaries and tribal links	A 'record' seems unlikely to be accepted by a lender as security
The Act gives an option for the representatives identified under the recording process to apply for the recorded land to be registered	

7.2 Adopt the model under the Forest Act to identify forest carbon rights 'owners'

An alternative option would be to follow a procedure similar to that provided for the identification of timber rights in Solomon Islands. In other words, to enact a process for the identification of the members of the customary community entitled to represent the community as a whole as 'owners' of carbon rights. This would require legislative amendment. Form 4 of the Standard Logging Agreement could serve as a model for this purpose.

One problem that would have to be dealt with would be the conflict between these statutory rights and existing timber rights granted under the *Forest Resources and Timber Utilisation Act*. If existing arrangements under that legislation are to be respected, this should be specifically provided for in the amending Act.

7.3 Incorporating landowner bodies to hold forest carbon rights

Where there are multiple groups of landowners with customary land tenure, forest contracting structures often require landowners to form a collective 'Sellers Entity' which can enter into a contract with the buyer of the emission reductions/removals. There are a number of other options for association, such as establishing charitable trust, none of which are entirely satisfactory. These options are set out in Annexure 2.

Box 7.1 North New Georgia Timber Corporation Act 1979

There is also the model provided by the *North New Georgia Timber Corporation Act 1979,* which was enacted to bypass a specific problem in North New Georgia. Disagreements as to 'ownership' of customary land and representation of the *butubutu* (the traditional kinship groups) in logging negotiations with Levers Pacific Timbers, had resulted in protracted litigation in the High Court, involving nearly 2000 claimants. The Act divided part of North

New Georgia in accordance with customary boundaries and transferred timber rights, but not land 'ownership', to the Corporation. The Corporation's Board of Directors, consisting of representatives chosen by tribal leaders, was empowered to grant logging concessions and receive and distribute the resulting royalties.

Whilst the Act allowed the timber licence to be granted to Levers, it did not resolve the underlying disputes. Divisions still existed as to who were the appropriate tribal leaders to choose directors and how the timber royalties should be divided up. In 1982 this resulted in the local Solomon Islanders setting fire to the logging camp and causing damage estimated at one million dollars. For this reason, this type of legislation does not seem to offer a practical option.

8. How to overcome the restrictions on customary land?

Customary land 'owners' may not be legally able to enter into forest carbon contracts with REDD+ Project Proponents or buyers (unless the transferee is a Solomon Islander), as these contracts may be declared void under the *Land and Titles Act*. This is because s 241 provides that only Solomon Islanders can hold or enjoy interests 'in over or affecting' customary land, and that any contract or agreement affecting interests in customary land will be void and of no effect. Further, ss 239 and 240 of the *Land and Titles Act* require customary land to be held and all dealings to be made in accordance with current customary usage. **Forest carbon contracts not in accordance with customary usage would contravene the Act.**

The options identified for releasing the customary land from its restrictions are:

1. Amending the *Land and Titles Act* to permit REDD+ projects on customary land by allowing landowners to sell the carbon emission reductions and/or removals from their customary land; or
2. Alienating the customary land by sale to the Commissioner or leasing to the Commissioner or provincial government.

8.1 Amending the *Land and Titles Act*

The *Land and Titles Act* could be amended to permit customary land 'owners' to enter into forest carbon contracts over their customary land by inserting a new s 241 (4) in the following terms:

Nothing in this part shall be taken to invalidate the creation or transfer of carbon emission reductions and removals associated with the forest carbon rights in that land from approved forest carbon projects.

8.2 Alienating the land

The other option would be to alienate the land.

There are two ways of doing this under existing law:[111]

- Selling to the Commissioner of Lands
- Leasing to the Commissioner of Lands or a provincial government

The first method is not a desirable option, as the effect is to permanently deprive the customary community of their customary interest in the land.

In the case of a lease, after the acquisition process specified in the Act has been followed, the land is registered as perpetual estate in the name of the identified land 'owners'. If the lease exceeds two years, the Commissioner of Lands or the provincial government must be registered as lessee.[112] Once the land registered as perpetual estate is registered as perpetual estate it is no longer customary and is free from the restrictions on alienation. A shorter lease does not have to be registered and would leave the perpetual estate 'owners' free to enter into a lease or contract directly with a REDD+ project proponent.

8.2.1 Permitting a REDD+ project under a lease

As stated above, there is no specific or implied right to the produce of the land in leases. Although the implied right for the lessee to be allowed to 'peaceably hold and enjoy the leased premises'[113] during the term of the lease could be taken to include such a right, this appears unlikely. One reason for this is that the rights of the lessee are subject to pre-existing rights to produce of the land, which as 'profits' (which are defined to include the rights to soil or products of the soil)[114] constitute overriding interests.[115] Whilst the definition of profits is broad, it does not appear broad enough to include carbon rights. However, the fact that profits do not pass to a lessee make it even more unlikely that carbon rights would do so. It seems more likely that these would remain with the superior estate holder.

[111] *Land and Titles Act* s 60.
[112] *Land and Titles Act* s 146.
[113] *Land and Titles Act* s 147(b).
[114] *Land and Titles Act* s 2.
[115] *Land and Titles Act* s 114.

The standard form of lease[116] does not make any provisions in relation to forest carbon rights. The Second Schedule containing the form of the lease is to be completed by the parties, so specific provision regarding 'ownership' of carbon rights could be included in any lease by agreement.

The table below sets out the advantages and disadvantages of alienating customary land in order to facilitate REDD+ projects.

Advantages of Alienating	**Disadvantages of Alienating**
Certainty, as the registered 'owners' of the perpetual estate have an indefeasible title	The land is alienated
The land and carbon rights are freely transferable	The registered 'owners' may dispose of the land

9. Should third parties be able to 'own' forest carbon rights?

If Solomon Islands wishes to allow third parties such as logging companies and project proponents to hold or 'own' forest carbon rights, this is likely to require legislative change.

The discussion in this Section is based on an important distinction between the *transfer or sale of forest carbon rights*, and the *transfer and sale of the verified carbon emission reductions/removals* that are generated by a REDD+ project. This important distinction is explained in Box 9.1 below.

Box 9.1 What is the difference between selling forest carbon rights and selling the emission reductions and/or removals?

If a landowner sells or transfers their **forest carbon rights**, they are, in effect, selling part of their property rights, or part of their natural resources. The person who buys the forest carbon rights is buying the right to exploit that resource. The buyer may or may not choose to develop that resource (e.g. by undertaking a REDD+ project).

This is different to a landowner keeping the forest carbon rights, but **selling the carbon emission reductions and/or removals** that they generate by exercising their forest carbon rights. In a typical REDD+ project, it is the verified carbon emission reductions and/or removals that are sold to a Project Proponent (or carbon broker) as part of carbon trading, not the underlying resource, the forest carbon, which remains with the landowner.

[116] Form 9, Legal Notice 122/1968, issued under *Land and Titles (General) Regulation* s 3(1).

9.1 Customary land

There are two means by which forest carbon rights could be transferred to a third party:

- By amending the legislative restriction on dealing in customary land to allow customary land 'owners' to transfer or sell their forest carbon rights; or
- By amending the Forest Resources and Timber Utilisation Act to allow forest carbon rights to be held by logging companies along with timber rights

Each of these options is discussed below.

9.1.1 Releasing land from restriction prohibiting sale of interests in customary land

Under the current law, forest carbon rights in customary land constitute an interest 'affecting customary land' and therefore can only be transferred to a Solomon Islander according to customary law.[117] Due to this statutory provision, which prohibits non-Solomon Islanders from holding interests in customary land, legislative amendments would be required if the State wishes to enable customary land 'owners' to transfer or sell their forest carbon rights to third parties, such as to Project Proponents or carbon brokers.

In particular, an amendment would be required to create an exemption from s 241 of the *Land and Titles Act* to allow carbon rights to be transferred to a non-Solomon Islander. This could be achieved by adding a sub-section to s 241(1) of the *Land Titles Act* in the following terms:

> *Provided that nothing in this section shall be taken to prohibit the transfer or holding of a forest carbon right by any person whether or not they are a Solomon Islander.*

If transfer of forest carbon rights to third parties were permitted, it would also be necessary to create a mechanism by which the new 'owner' of the forest carbon rights could register their interest on the title of the land, which will be difficult because customary land is not registered in Solomon Islands and there is no title to register the interest against.

9.1.2 Amend Forest Act to allow a third party to purchase carbon rights along with timber rights

In the same way that third parties (such as logging companies) can hold timber rights over customary land, as permitted under the *Forest Resources and Timber Utilisation Act*, Solomon Islands needs to decide whether it wishes to permit third parties to hold the rights to forest carbon. To enable this to happen, the *Forest Resources and Timber Utilisation Act*

[117] *Land and Titles Act* s 241.

could be amended to provide that 'timber rights' include 'forest carbon rights'. The person/company who holds the timber rights in an area would therefore be entitled to exercise their timber rights, forest carbon rights, or a combination of the two.

9.2 Alienated land

To enable third parties to hold the forest carbon rights over alienated land will require the creation of a separate and transferable property forest carbon property right. This is the approach taken in Australia under which all States and Territories have introduced legislation allowing carbon rights to be sold or transferred as a separate property right. The major advantage of this option is that REDD project developers may prefer the certainty of holding a separate property right to the forest carbon.

It is much easier to create a separate property right to forest carbon where alienated land is concerned because alienated land does not have the same restrictions on title, and the new interest can be registered over the title.

Legislation could be introduced which identifies forest carbon as a separate property right, either as a statutory right, or by declaring forest carbon rights to be an easement or a *profit a prendre* under Part XV of the *Land and Titles Act* . Either option would need to be supported by the landowner granting the holder of the forest carbon rights a covenant to enable the holder of the forest carbon rights to manage and conserve the forest resource.[118]

If carbon rights are to be created as a separate property right and traded, there will also need to be a system which enables the 'owner' of the carbon rights to be clearly identified. This is necessary in order to minimise the risk of fraud and to avoid the carbon being sold to multiple buyers.

9.2.1 Recording carbon rights on land title

It may be possible to record 'ownership' of carbon rights on the Register of Titles under the current law.[119] In addition, the *Land and Titles Act* allows for a caveat to be entered on the register by any person entitled to an interest in registered land.[120] The caveat prevents the registration of any dealing affecting the interest, including a change of 'ownership'.[121] This process has a parallel in the recording of mining leases on the land register, pursuant to s 39(1) of the *Mines and Mineral Act*.

[118] *Land and Titles Act* pt XVII.
[119] *Land and Titles Act* s 116.
[120] *Land and Titles Act* s 220.
[121] *Land and Titles Act* s 21.

It should also be noted that a fully functioning land registry is essential for this option to be effective. The capacity of the current land registration system should therefore be reviewed before any decisions are made. In 2006, there was a 12-month backlog of documents awaiting processing in the Registry. Best practice is a process taking 1 to 2 days.

9.3 Advantages and disadvantages of creating a separate property right to carbon

Advantages	Disadvantages
Certainty for carbon investors where such rights are registered on a land title	Unnecessarily complicated and is likely to be difficult for customary land 'owners' to understand
	Culturally inappropriate as it does not fit well with the communities' approach to land
	Separation of carbon rights from land 'ownership' creates opportunities for bribery, fraud and corruption to 'register' the transfer of forest carbon rights
	The discontent and flood of litigation caused by the separation of timber rights from land rights under the *Forest Resources and Timber Utilisation Act* should serve as a warning against this option

10. Resolving competing claims to forest resources

Where a landowner seeks to exercise their forest carbon property rights, e.g. by participating in a REDD+ project, they may be unable to do so if another person (a third party) holds a pre-existing right to use the same land or forest resource, such as a timber permit, mining licence or lease. This Section considers how these competing interests could be reconciled.

The general principle in Solomon Islands is that permits and licences remain valid during the currency of their term, provided that they have been duly issued, unless grounds for suspension of revocation, such as breach of the conditions of the licence exist. Section 8 of the *Constitution,* which provides for freedom from deprivation of property, covers 'property of any description' and would appear broad enough to cover permits and licences. However the

Constitution also provides that if the property is acquired as a consequence of a breach of law this is not unjust deprivation.[122]

10.1 Timber rights agreements and timber licences

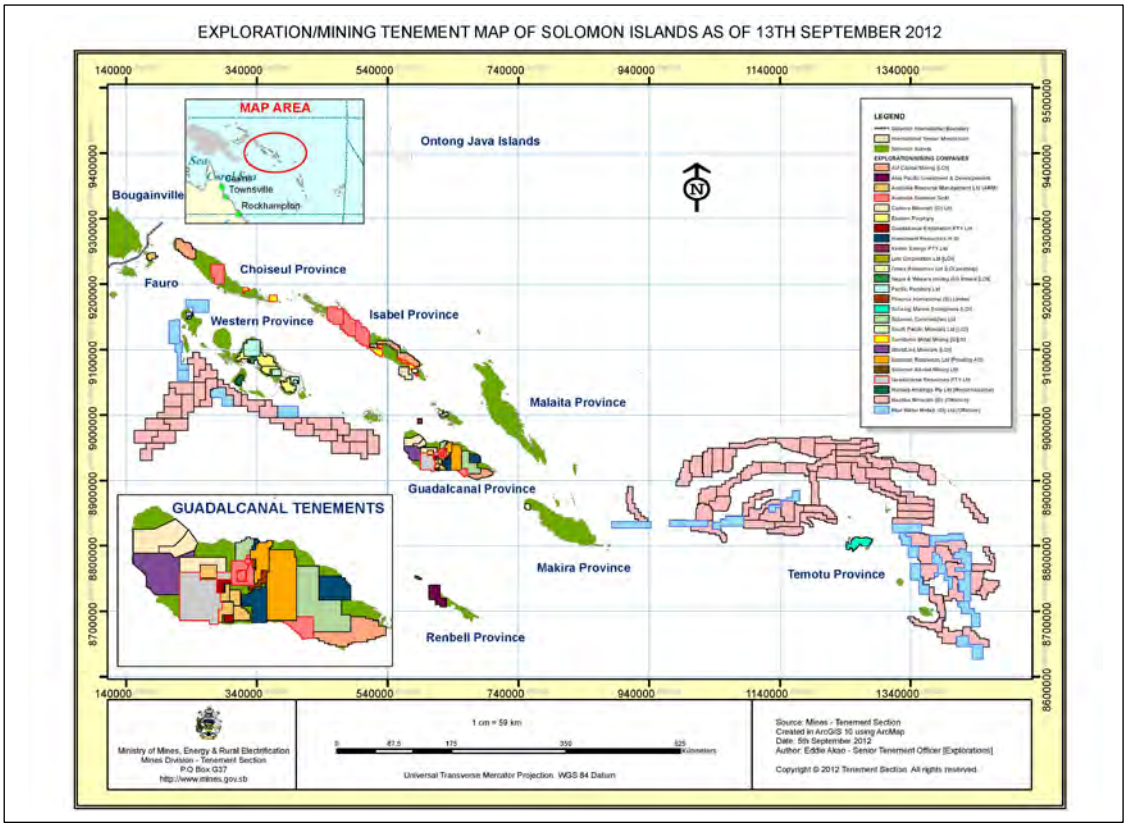
In Solomon Islands, the main driver of deforestation and forest degradation is planned deforestation, driven primarily by commercial logging, sometimes coupled with the prospect of converting logged land to agricultural use, such as for oil palm. Large areas of the forest resource in Solomon Islands are already under logging concession (see Annexure 3). When designing its national legal framework for carbon rights, Solomon Islands should therefore consider whether it is appropriate to allocate carbon rights to logging companies to create an incentive to reduce deforestation. Such an approach could be implemented by allowing particular categories of timber licences to be converted to REDD+ licences, under specified conditions.

Timber rights agreements and timber licences cannot be cancelled unilaterally. Where the Commissioner of Forest Resources is satisfied that the holder of a timber licence has contravened the Act or is in breach of a licence term, he may give written notice suspending or cancelling the licence. The licence holder must first be given an opportunity to be heard.[123] The implication of this is that where a customary landowner wishes to exercise their forest carbon rights and there is an existing timber rights agreement or timber licence in place, the landowner will need to negotiate with the holder of the logging concession or timber licence to surrender their interest, presumably in return for an agreed share of the REDD+ revenues.

10.2 Mining laws

Large areas of land in Solomon Islands are subject to a reconnaissance permit, prospecting licence or mining lease (Map 10.2).

[122] *Constitution* s 8(2)(a)(ii).
[123] *Forest Resources and Timber Utilisation Act* s 39.



Map 10.2 Existing Exploration/Mining Tenements

(source: Ministry of Mines, Energy and Rural Electrification, Mines Division - Tenement Section)

There is no express provision in the *Mines and Minerals Act* for compensation to be paid on cancellation of a Mining Licence. This is not surprising as cancellation is predicated on fault on the part of the holder. Section 8 of the *Constitution,* which provides for freedom from deprivation of property, covers 'property of any description' and would appear broad enough to cover a mining licence. However, as mentioned above, if the property is acquired from a property holder as a consequence of his or her breach of the law, this is not unjust deprivation.[124]

The *Mines and Minerals Act* establishes a Minerals Board[125] which regulates mining licences, permits and leases.[126] There is a three stage procedure for carrying out a mining operation in Solomon Islands:

1. Obtaining a reconnaissance permit;
2. Obtaining a Prospecting licence; and then
3. Obtaining a Mining Lease.

[124] *Constitution* s 8(2)(a)(2).
[125] *Mines and Minerals Act* s 10.
[126] *Mines and Mineral Act* pts III (permits), IV (licences), V (leases).

The application for a Mining Lease must include an environmental assessment. The *Environment Act* requires a mineral sector developer to obtain a Development Consent from the Director of the Environment and Conservation Division before it is allowed to carry out a 'prescribed development'.[127]The *Environment Act* states that the developer must submit a development application to the Director of the Environment and Conservation Division, together with either a public environmental report or an environmental impact statement.

A Mining Lease must be registered on the Lands Register[128]and may not exceed twenty five years, with a renewal of ten years. A Mining Lease may only be transferred, assigned, mortgaged, dealt with or disposed of with the approval of the Board.

The only agreement that the customary chiefs may enter into is the grant of surface access rights, which give permission to third parties to enter onto customary land to access minerals from the surface.[129]

The Minister may suspend or cancel a permit, licence or mining lease on the advice of the Board if the holder contravenes the Act; commits a material breach of the permit, licence or mining lease; or becomes insolvent.[130] The holder must first be asked to show cause why holder's rights should not be suspended or cancelled.[131] There is an appeal against the Minister's decision to the High Court.[132]

10.3 Other relevant laws

There are already in existence provincial ordinances which might form an option for dealing with carbon rights. Some provinces have already passed ordinances which provide for areas to be set aside for conservation purposes.

These include the following:

- *Choiseul Province Resource Management Ordinance 1997*
- *Guadalcanal Province Wildlife Management Area Ordinance 1990*
- *Isabel Province Conservation Areas Ordinance 1993*
- *Temotu Province Environmental Protection Ordinance 1994*
- *Western Province Resource Management Ordinance 1994.*

[127] *Environment Act 1998* s 19(1)(b) ('*Environment Act*')..
[128] *Mines and Minerals Act* s 39(1).
[129] *Mines and Minerals Act* s 21.
[130] *Mines and Minerals Act* s 71(1).
[131] *Mines and Minerals Act* s 71(2).
[132] *Mines and Minerals Act* s 71(3).

These ordinances have not been examined in detail, but some of them, e.g. the *Western Province Resource Management Ordinance*, provide a model for identifying customary land boundaries and 'owners', which might be useful for identifying the holders of carbon rights.

Additionally, Guadalcanal Provincial Assembly has enacted the *Moli Wards Chiefs Council Ordinance 2010*. This Ordinance recognises the hereditary chiefs in the Ward and establishes the Moli Ward Chiefs Council. Most relevantly, the Ordinance provides for sustainable harvesting of land resources.[133] It also obliges the Council to encourage a reforestation campaign.[134] The Ordinance requires non-citizens to obtain development approval from the Council[135] and provides a dispute resolution procedure for land disputes.[136]

11. Options for recording 'ownership' and/or use of carbon rights

If carbon rights are attached to land, then the existing system of registration may be utilised to register 'ownership' of carbon rights. In the case of customary land, this would involve devising a scheme to include such land on the Land Registry. If carbon rights are separated from the land, then some other means of registration must be devised. In any event, if forest carbon rights are to be created and carbon credits traded, there will need to be a means of systematically recording who has exercised their carbon rights, and where, in order to avoid forest carbon being sold twice (double counting): see **Box 11.1** on the VCS and double counting.

Box 11.1 VCS and double counting of emission reductions and removals

The Verified Carbon Standard has rules on Double Counting. In non-Annex B countries (developing countries) double counting can occur as double selling. 'Double selling' occurs when a single greenhouse gas emission reduction or removal is sold to multiple buyers.[137] For example, a carbon credit might be sold twice, or a singular emission reduction might be certified under two different REDD+ programmes (e.g. a national programme and a voluntary project) and sold under each.

National REDD+ programmes can address this risk through oversight procedures, e.g. clear regulatory structures to register REDD+ projects.

[133] *Moli Wards Chiefs Council Ordinance 2010* s 15.
[134] *Moli Wards Chiefs Council Ordinance 2010* s 18.
[135] *Moli Wards Chiefs Council Ordinance 2010* s 17.
[136] *Moli Wards Chiefs Council Ordinance 2010* s 19.
[137] See Verified Carbon Standard, *Program Definitions* (VCS, Version 3, 2012) < http://v-c-s.org/sites/v-c-.org/files/Program%20Definitions%2C%20v3.4.pdf> 5, definition of Double Counting, and Verified Carbon Standard, *Double Counting: Clarification of Rules* (VCS, Policy Brief,1 February 2012)..

REDD+ projects must also be registered on a database which tracks all forest carbon emission reduction programmes, including national measures and REDD+ projects. In addition, an approval process is required to ensure that proposals for REDD+ projects are properly vetted prior to their commencement.

12. Land conservation mechanisms

Given that REDD+ projects will involve land 'owners' undertaking long term obligations to conserve their forest, consideration should be given to whether there are any options available to them which would give some legal protection to conserve the forest resources.

Five options have been identified:

- Establishment of protected area
- Declaration of conservation areas
- Declaration of sanctuary
- Declaration of state forest.
- Declaration of forest reserve

12.1 Protected Areas Act

The *Protected Area Act 2010*[138] empowers the Minister, on the recommendation of the Director of the Environment and Conservation Division, to declare any area as a protected area of biological significance if it:

> *(a) possesses significant genetic, cultural, geological or biological resources;*
> *(b) constitutes the habitat of species of wild fauna and flora of unique national or international importance;*
> *(c) merits protection under the Convention Concerning the Protection of World Cultural and Natural Heritage; or*
> *(d) requires special measures to be taken to conserve biological diversity*[139]*.*

Before making any recommendations to the Minister, the Director must carry out a consultation process with all stakeholders.[140] However, the Act does not set out a detailed regime for the identification of those stakeholders. The Act provides for the establishment of a register of protected areas.[141] It also provides for the establishment of management committees consisting of 'owners' of the protected areas, public officers, provincial

[138] *Protected Area Act.* The Act came into force in May 2012.
[139] Section 10(1).
[140] *Protected Area Act* s 10(2).
[141] *Protected Area Act* s 11(1).

government officers and any other persons to manage one or more protected areas.[142] This Act might form a model for benefit sharing.

12.2 Declaration of conservation areas

As mentioned above, some provinces have already passed ordinances which provide for areas to be set aside for conservation purposes. However, this is a complex process and the delineation of land boundaries is a contentious matter.

12.3 Declaration of a Sanctuary

The Minister may, by regulation, declare any land, including customary land, as a 'sanctuary for the purpose of conservation of flora and fauna, and prohibiting felling of any tree or removal of any timber from such sanctuary'.[143] The land must be compulsorily acquired under the *Land and Titles Act*, as specifically amended by the *Forest Resources and Timber Utilisation Act* to apply in this situation. [144]

12.4 Declaration of state forest

The Minister may declare public land, that is, land in which the Government holds a freehold or leasehold interest, to be a state forest.[145] Use of a state forest for any of the broad list of purposes listed in the Act, including felling timber, requires a permit from the Commissioner of Forest Resources.[146] No interest or licence in a state forest may be granted without the prior written consent of the Commissioner of Forest Resources.[147]

12.5 Declaration of forest reserve

As discussed above, in any rainfall catchment area the Minister may declare a forest to be a forest reserve, but only to protect the forest or other vegetation for the limited purpose of conserving water resources. The notice declaring a forest reserve must specify rights which may be exercised in the forest reserve.[148]

13. Conclusion

Having regard to the relative advantages and disadvantages of each of the options, it is suggested that the following mechanism be considered to facilitate REDD+ projects on customary land in Solomon Islands:

[142] *Protected Area Act* s 12.
[143] *Forest Resources and Timber Utilisation Act,* s 44(1)(s).
[144] *Forest Resources and Timber Utilisation Act,* sch 2.
[145] *Forest Resources and Timber Utilisation Act,* s 20.
[146] *Forest Resources and Timber Utilisation Act* ss 22-23.
[147] *Forest Resources and Timber Utilisation Act* s 21.
[148] *Forest Resources and Timber Utilisation Act* s 24.

1. Recording of forest carbon rights under the *Customary Land Records Act.*
2. Landowners enter into a REDD+ agreement with a project developer to sell their verified emission reductions and removals (an amendment to the *Land and Titles Act* is required to permit this).
3. Landowners consent to a conservation covenant of some description over the forest to be protected, with sufficient flexibility to manage the forest sustainably.

ANNEXURE 1: Legislation on land tenure

PROPOSED AMENDMENTS AND ADDITIONS TO LEGISLATION RELATING TO LAND TENURE		
Proposed Enactment	**Status**	**Purpose**
Land and Titles (Amendment) Bill 2005	Endorsed by Cabinet under previous government to be put before Parliament.	Provides for customary land disputes to be resolved through traditional systems
Land and Titles (Amendment) Bill 2006	Yet to be placed before Parliament (*Supersedes Land and Titles (Amendment) Bill 2003*)	Provides for a Land Board to take over responsibilities of Commissioner of Lands and for periodical revision of land rents.

RELATED LEGISLATION ON LAND		
Name	**Status**	**Purpose**
Forest Resources and Timber Utilisation Act	Came into force 1 October 1970	Area Council (now Provincial Executives) to determine the timber rights 'owners' and willingness to negotiate for the disposal of their timber rights.
Forests Act 1999	Passed by Parliament but not brought into force.	Landowners agreement to log to precede agreement with loggers; introduces National Forestry and Provincial Forestry policies and plans.
Forests Bill 2012	To go before Parliament in June 2013 (Supersedes Forests Bill 2004, and other earlier versions)	Introduces 'Determination of Potential Forest Uses' and 'Statement of Customary Ownership' as prerequisites to 'Forest Access Agreements', National and Provincial Forest Policies and Code of Practice. Aims to introduce a methodical approach to resource management.
Mines and Minerals Act	Came into force on 1 March 1996. Amended by *Mines and Minerals (Amendment) Act 1996*. Repeals the *Mining Act* [Cap 91].	Regulates mining licences permits and leases; establishes Minerals Board

ANNEXURE 2: Options for incorporating customary landowner bodies

Where there are multiple groups of landowners with customary land tenure, forest contracting structures often require landowners to form a collective "Sellers Entity" which can enter into a contract with the buyer of the emission reductions/removals. This Annexure identifies the existing legal structures that customary land 'owners' could use to form a Sellers Entity in Solomon Islands.[149]

Recorded Customary Land Groups

The *Customary Land Records Act* was enacted in 1994 to provide a mechanism for recording customary land boundaries and the names of land-holding groups and their representatives for the purposes of any dealing with recorded land. This is covered in Section 7.1 and is not repeated here.

As the *Customary Land Records Act* is not in operation, there is currently no general legislation providing for the legal recognition or registration of landowning groups in Solomon Islands. However, there are a number of other options for association, which are set out below.

Community Companies

The *Companies Act 2009* ('*Companies Act*') introduced a new type of association called a community company. It is in essence a private company, but the members must have something in common, such as coming from the same area, and the object of setting up the community company must be to promote the community interest. 'Community interest' means anything that benefits the community, including preserving the environment.[150]

Advantages	**Disadvantages**
Can enter into contracts and 'own' property	Cannot pay money (distributions or dividends) to shareholders
Can sue and be sued in its 'own' name	Establishment of a community company is as expensive as the establishment of a normal company
Has a wide variety of ways to raise capital	Community Company structures are

[149] A more innovative option would be to make provision for the registration of group titles in customary land. This option would require review of existing research on this topic in Solomon Islands and the region, to identify the feasibility of amending the law to introduce a new scheme for registration of group titles in customary lands. This is outside the boundaries of this Paper.

[150] *Companies Act* s 166.

Advantages	Disadvantages
	regulated by the *Companies Act* and subject to onerous reporting requirements
Has perpetual existence, independent of its members and shareholders	Limited to 50 members
Assets of a community company may only be disposed of in the ordinary course of business; or for full consideration and with the approval of 75% of all registered shareholders.	
Offers limited liability	
Control lies with the community company's board	

Companies

This is the most complex and formal option, as it requires incorporation under the *Companies Act*. A company is a separate legal entity in which there are directors and shareholders. The directors control the company and may utilise the company structure as a vehicle for tax planning and shielding personal assets.

Advantages	Disadvantages
Can enter into contracts and 'own' property	Company structures are highly regulated and subject to many rules
Can sue and be sued in its 'own' name	*Companies Act* controls company formation
Has a wide variety of ways to raise capital	Establishment of a company is more expensive than most other forms of business structure
Perpetual existence, independent of its members and shareholders	
A company offers limited liability	
Control lies with the company's board	

Members Association

This is the least formal option, and is governed by common law. It allows a group of people to join together for a particular purpose, ranging from social to business, and is usually intended to be a continuing organization. It can be formal, with a constitution or rules and membership requirements, or it can be a collection of people without structure.

Advantages	**Disadvantages**
Simple and flexible organization structure	No continuity of existence
No government regulation	Unlimited liability of members (particularly committee members)
Simple to establish	No legal recognition of the association as an entity separate from its members
Administration costs low	Capital raising is limited

Charitable Trusts

An option lying somewhere between these extremes to is to set up a trust. Essentially, a trust means holding property for the benefit of another. If the trust qualifies as charitable under the *Charitable Trusts Act*,[151]it can be registered. However, charitable purposes listed in the Act are limited and would not appear to include conservation purposes. However, these purposes have been liberally applied by the Registrar in the past and the Minister may add to the list of purposes.[152]

Advantages	**Disadvantages**
The register confers some certainty. A trustee has power to deal with the Trust assets	Must be for charitable purposes and qualification depends on the discretion of the Registrar.
Subject to very little government regulation	Complex business structure that requires on-going legal and accounting expertise
Fewer formalities than a company	Expensive to establish
It is quite easy to wind up a trust	Does not have continuity of existence
Offers some tax advantages	

[151] [Cap 55] (‘*Charitable Trusts Act*’).
[152] *Charitable Trusts Act* s 2.

Cooperative Societies

The *Cooperative Societies Act* provides for the establishment of a society established to promote, 'the **economic interests** of its members in accordance with co-operative principles'.[153]

Advantages	Disadvantages
Simple and flexible organization structure	Must be formed to promote economic interests of members
Legal recognition of the association as an entity separate from its members no government regulation	Uncertainly arising from the fact that this structure has not been used previously for this purpose
Simple formalities to establish	
Administration costs low	

Registration as Joint 'Owners'

The *Land and Titles Act* permits registration of a number of individuals as co-owners.[154] Where more than one Solomon Islander is involved, the application for registration must be accompanied by a statutory declaration by each joint owner showing the beneficial interests that they represent. Any transfer of the interest requires a statutory declaration that all beneficial 'owners' have been consulted and that a majority are in favour.

Advantages	Disadvantages
Certainty for those dealing with registered 'owners'	Necessitates alienation
Requires 'beneficial' interests to be identified	Limited to five individuals
Provides for consultation	No legal recognition of the group as an entity separate from the registered individuals
	Statutory declaration is not sufficient to guard against fraud
	Capital raising is limited

Registration as Timber Rights 'Owners'

[153] [Cap 164] s 4.
[154] *Land and Titles Act* s 195.

As discussed above, the *Forest Resources and Timber Utilisation Act* sets up a process for determination of the persons entitled to grant timber rights to third parties and for the negotiation and finalisation of a timber rights agreement.

Advantages	**Disadvantages**
Certainty for those dealing with registered timber rights 'owners'	Designed to allow the land to be logged
Requires 'beneficial' interests to be identified	Divorces land 'ownership' from the right to negotiate and dispose of timber
Provides for consultation	No provision for division of proceeds other than through common law trust mechanism which is unsuitable for customary land

ANNEXURE 3: Statistics on logging concessions in Solomon Islands

Table A Estimates of remaining merchantable forest area

Province	Remaining merchantable forest area (hectares)		No. of timber licences
	2010	2011	
Guadalcanal	26,681	26,681	23
Choiseul	98,477	98,415	14
Western	49,544	46,235	53
Malaita	52,372	60,339	35
Makira	14,628	14,408	20
Isabel	70,556	61,684	35
Central	7,003	7,003	4
Temotu	30,380	30,380	1
Rennel	49,963	35,672	3
Total	**399,604**	**380,817**	**188**

Source: Adapted from Ministry of Forestry & Research Licencing Section data, 2011

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INDIGENOUS CARBON PROPERTY RIGHTS

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INTRODUCTION

The commodification of forests to permit carbon sequestration and hence trading in the resultant carbon rights is examined through the lens of customary and traditional owners' rights and interests. Indigenous property rights in biota are often an important incident of customary and traditional title, and the disregard of such ownership by national States when creating marketable freestanding legal rights to carbon raises the twin issues of extinguishment, and liability for compensation.

As industrialised nations move towards carbon offsets and decarbonisation, the unforeseen cost of such responses to climate change is increasingly being borne by indigenous peoples throughout the world. Unsurprisingly, carbon property law is now developing rapidly, and the following section of this paper briefly canvasses this matter through the lens of Australian native title law..

CARBON PROPERTY LAW

Tom Holland in his seminal narrative history of the collapse of the Roman Republic observes:

…[r]espect for private property had always been one of the foundation-stones of the Republic, but now, with the Republic superseded, private property could be sequestered on a commissar's whim. Farmers, evicted from their land without recompense… [1]

Holland's sobering analysis of the importance of property rights 2000 years ago resonates in the powerful silence of colonial and post-colonial legislation on indigenous property rights which arguably has continued even beyond the recognition of customary title in nation states such the Solomon Islands, and

[1] Holland, Tom (2004) *Rubicon: The Triumph and Tragedy of the Roman Republic* (London: Abacus), 364.

notably native title by the Australian High Court in *Mabo & Ors v Queensland (No 2) (1992)* 175 CLR 1 (*Mabo*).

Paradoxically, since *Mabo* there have also been Australian court decisions which have greatly settled native title law such as *Western Australia v Ward (2002)* 191 ALR 1 (*Ward)* and *Yorta Yorta v Victoria (2002)* 194 ALR 538, which position native title as a multifarious "bundle of rights" markedly susceptible to extinguishment. There has been a marked understanding of the ambit of the indigenous property rights and interests that may comprise a particular native title in a specific locality. It is this complexity which draws attention to the notion of indigenous property in carbon, a subset of indigenous biota property rights.

Recent research as to how carbon property rights as a sub-class of biota property rights, indigenous or non-indigenous, sit within the bundle of rights in land has revealed the "inherent susceptibility"[2] of many rights within the bundle, of which native title is arguably one of the least robust. If emergent rights such as carbon are also less favored over other rights, the position of indigenous carbon rights would seem parlous in the extreme.

This view contrasts with the decision in *Yanner v Eaton (1999) 201 CLR 351* which revealed that indigenous property rights can exist in biota, specifically wild fauna such as crocodiles. Similarly, flora is an intrinsic part of indigenous rights and interests, and indeed management of country by traditional owners is highly sophisticated. Ross, Young and Liddle observed shortly after the enactment of the Australian *Native Title Act 1993* that:

[a]boriginal classification of land units, based on combinations of topography, soils and vegetation is a practical demonstration of this [traditional] ecological knowledge. These land classifications help Aboriginal people to predict the availability of different bush foods and manage them accordingly.[3]

Further, they point out that:

[a]boriginal ecological knowledge is embedded in cultural explanations and symbols, a characteristic which has perhaps obscured the inherent sophistication of their understandings. It has been suggested that Aboriginal sacred sites may often have been conservation areas in which resource use was prohibited through supernatural sanctions. Food taboos similarly may have formed part of conservation strategies.[4]

[2] Boydell, Spike, Sheehan, John, and Prior, Jason (2009) "Carbon Property Rights in Context" *Environmental Practice* (11), 113.
[3] Ross, Helen, Young, Elspeth, & Liddle, Lynette (1994) "Mabo: An Inspiration for Australian Land Management *Australian Journal of Environmental Management* (1) 1 (July), 29.
[4] Ross, Young & Liddle.

Given the strength of Australian (and other) indigenous rights and interests in flora, the creation of freestanding property rights in carbon arguably represent a subsequent stage in the ongoing interaction between Indigenous and colonial (and post-colonial) property law

The following section of this paper describes how freestanding property rights in carbon are currently being (or can be) crystallised out of the inchoate land property right.

RECOCOGNISING INDIGENOUS RIGHTS TO CARBON PROPERTY

If freestanding property rights in carbon are to be crystallised out of the inchoate land property right held by the state, recognition of the prior claim by traditional and customary land holders to some or all of these new rights should occur. Any land-based carbon offsets regime should by designed to recognize customary and traditional property rights in carbon.

The answer lies in balancing market freedoms and modern accountable government with traditional and customary land tenures. Experience suggests that judicial recognition of ancient land ownership is yet to resonate with the actual experience of indigenous people in Australia, and indeed throughout the world. Colonial and post colonial societies in particular have always struggled with the issue of whether property rights liberalism really extends to indigenous land tenures in any country.

The emergence of carbon property rights in vegetation in response to decarbonisation, and broader international obligations to adapt to climate change subsequent to Australian Federal government ratification of the Kyoto Protocol in December 2007 provided an opportunity to test the genuineness of existing recognition of indigenous property rights. Given the remarkable complexity of Australian indigenous tenures, it is almost certain where native title is determined by the Courts to have survived colonisation, indigenous carbon property rights will also have survived in many parts of Australia.

The establishment of free-standing carbon property rights regimes by State, Territory and Commonwealth governments will in many situations extinguish *ab initio* any underlying indigenous interests. Hence, the price of carbon gained from sequestration in vegetation must include an allowance for compensation for the indigenous interests extinguished. The methodology for assessing this compensation is a task yet to be understood.

Such questions now being raised in Australia are also important for those nations who have indigenous property rights within their borders, or those nations who will be seeking carbon offsets sourced from such countries.

The following section of this paper explores briefly such emerging issues.

EMERGING ISSUES

Indigenous land rights have not ranked highly in global debates on climate change. Beyond perfunctory recognition, little interest has been expressed in the implications for customary and traditional landowners of global resource exploitation for sequestration on the scale needed to achieve significant decarbonisation. The quantity of land which will need to be given over to reafforestation for the purpose of sequestering carbon from the atmosphere is currently not fully understood, however it is certain to involve many billions of hectares of land.

As the FAO World Summit on Food Security in November 2009 revealed, a balance will need to be achieved between protecting increasingly scarce arable land to ensure food security, and the anticipated demands of land-based carbon sequestration. Notwithstanding, much sequestration will still of necessity occur in developing countries with high levels of customary or traditional land tenures, and as a result the six key policy issues are:

- Genuine recognition of indigenous land rights with carbon related components to avoid the imposition of environmental costs on indigenous peoples;
- The provision of a non-price dominated carbon management environment where carbon sequestration occurs on customary or traditional lands;
- Where carbon sequestration occurs on customary or traditional lands, the regime should as much as possible be consistent with traditional or customary land management practices;
- The impact of land based sequestration on customary or traditional communities should be carefully assessed in order for support to occur prior and subsequent to such impact occurring;
- Preferably carbon offset trading generated from sequestration on customary or traditional lands should rest with the land owners, albiet within a national trading framework; and
- Opportunities exist for leasehold carbon sequestration on customary or traditional lands, but on terms and conditions acceptable to the landowners, gained with their genuine consent.

CONCLUSIONS

In attempting to distil any conclusions from the above discussion, the stark irony is that indigenous peoples throughout the world have probably always been aware of the value of biota, notably vegetation as an integral component of their various customary or traditional land tenures.

In some countries such as Australia, judicial recognition of such incidents of native title has already occurred as in the High Court decision *Yanner*. However, just as customary and traditional land owners seem poised to gain substantial financial rewards for carbon imbedded in their biota, many nation States are unwilling to recognise this component of customary and traditional land rights. Comprehensive strategies are urgently needed to ensure that such landowners are not again marginalised as industrialised nations seek carbon offsets in land-based sequestration projects notably in Pacific island nations.

The key policy issues listed in this paper provide a framework which applies to any country with customary or traditional land ownership, and requires of the State meaningful dialogue with the customary and traditional communities who will be impacted by carbon sequestration projects. Market freedoms and modern accountable government need to achieve a balance with traditional and customary land tenures. The framework proposed in this article identifies the policy tools to achieve this aim.

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