ANNUAL CONFERENCE ON LAND AND POVERTY

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

SPIKE BOYDELL and **ULAI BAYA**
UTS: Asia-Pacific Centre for Complex Real Property Rights,
University of Technology, Sydney, Australia
spike.boydell@uts.edu.au ; ulai.baya@uts.edu.au

Paper prepared for presentation at the
"ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY"
The World Bank - Washington DC, April 23-26, 2012

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.

6 Acknowledgements

The authors thank John Sheehan and Shaunnagh Dorsett of the UTS: Asia-Pacific Centre for Complex Real Property Rights for their valuable input into earlier versions of this research, together with Franklin

Obeng-Odoom, Ken Chambers, Sara Wilkinson, Nicole Graham and the helpful feedback from participants on an earlier draft discussed at *Land Resource Compensation - a Pacific Regional Symposium* hosted by the UTS: Asia-Pacific Centre for Complex Real Property Rights in association with the International Academic Association for Planning, Law and Property Rights, in Sydney, July 2011.

7 References

Adams, W. M., Brocklington, D., Dyson, J., & Vira, B. (2003). Managing Tragedies: Understanding Conflict over Common Pool Resources. *Science, 302*(5652), 1915.

Ahmed, M., Chong, C. K., & Cesar, H. (Eds.). (2005). *Economic Valuation and Policy Priorities for Sustainable Management of Coral Reefs* (2 ed.). Penang, Malaysia WorldFish Center.

Anderson, T. (2006). On the economic value of customary land in Papua New Guinea. [Focus - Land Titling Issues]. *Pacific Economic Bulletin, 21*(1), 138-152.

API & PINZ. (2008). Australian and New Zealand Valuation and Property Standards. Deakin, ACT: Australian Property Institute.

Arnold, C. A. (2011). Sustainable Web of Interests: Property in an Interconnected Environment. In D. P. Grinlinton & P. Taylor (Eds.), *Property rights and sustainability : the evolution of property rights to meet ecological challenges* (pp. 167-193). Boston: Martinus Nijhoff Publishers.

Arvanitakis, J., & Boydell, S. (2011). New Matilda. *Mineral Rights For PNG Landowners,* (25 August 2011). Retrieved from http://newmatilda.com/2011/08/25/mineral-rights-png-landowners

Benda-Beckmann, F. v., Benda-Beckmann, K. v., & Wiber, M. (2006). *Changing properties of property*. New York: Berghahn Books.

Boydell, S. (2007). Myth, Embeddedness and Tradition: Property Rights Perceptions from the Pacific. In A. Smajgl & S. Larson (Eds.), *Sustainable Resource Use: Institutional Dynamics and Economics* (pp. Chapter 6 pp.109-123). London: Earthscan.

Boydell, S. (2008). *Institutions, Complexity, and the Land*. Paper presented at the Integrating Generations: FIG Working Week 2008, Stockholm, Sweden. <http://www.fig.net/pub/fig2008/papers/ts06a/ts06a_02_boydell_2919.pdf>

Boydell, S. (2010). South Pacific Land: An Alternative Perspective on Tenure Traditions, Business and Conflict. *Georgetown Journal of International Affairs, XI*(1), 27-36.

Boydell, S., & Baya, U. (2010). Review of the iQoliqoli (Fishing Ground) Compensation Policy. In Ministry of iTaukei Affairs - Government of the Republic of Fiji Islands (Ed.), (pp. 119). Suva: Consultancy report prepared by Land Equity International, Wollongong.

Boydell, S., & Searle, G. (2010). *The contemporary urban commons – a case study of Darling Harbour, Sydney*. Paper presented at the COBRA 2010 Legal Research Symposium, Duaphine Universite, Paris.

Bromley, D. W. (1991). *Environment and Economy: Property Rights and Public Policy*. Cambridge, Ma.: Basil Blackwell, Inc.

Bromley, D. W. (2006). *Sufficient Reason: Volitional Pragmatism and the Meaning of Economic Institutions*. Princeton, N.J.: Princeton University Press.

Chan, B. (2011). OFFICE OF THE MINISTER F OR MINING BREAKFAST ADDRESS TO DIVISIONAL HEADS OF MINING DEPT & MRA BY HON. BYRON CHAN, MP AT YACHT CLUB, Thursday, 11th August, 2011. *Namatanai Electorate, Ministerial Blog*. Retrieved from Namatanai Electorate website: http://namatanaielectoratepng.blogspot.com.au/2011/08/give-resource-ownership-back-to-people.html

Cole, D. H., & Grossman, P. Z. (2002). The Meaning of Property Rights: Law versus Economics? *Land Economics, 78*(3), 317-330.

Cole, D. H., & Ostrom, E. (2012). The Variety of Property Systems and Rights in Natural Resources. In D. H. Cole & E. Ostrom (Eds.), *Property in Land and Other Resources* (pp. 37-66). Cambridge, MA: Lincoln Institute of Land Policy.

Creswell, J. W., & Tashakkori, A. (2007). Differing Perspectives on Mixed Methods Research. [Editorial]. *Journal of Mixed Methods Research, 1*(4), pp.303-308.
Crocombe, R. G. (1975). An Approach to the Analysis of Land Tenure Systems. In H. P. Lundsgaarde (Ed.), *Land Tenure in Oceania*. Honolulu: University of Hawaii Press.
Curtis, I. A. (2011). Valuing the Economic Loss of Modification of the Ecosystem Services Provided by the Forest. *Australia and New Zealand Property Journal, 3*(2), 63-73.
Farran, S., & Paterson, D. E. (2004). *South Pacific Property Law*. Sydney: Cavendish Publishing Limited.
Filer, C. (2006). *Pacific 2020 Background Paper: Mining and Petroleum*. Canberra: Australian Agency for International Development (AusAID) - Commonwealth of Australia.
Government of Vanuatu. (2005). *Foreign Investment Advisory Service (FIAS) Pacific Program*. Port Vila, Vanuatu.
Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), pp.255-274.
Griffiths, J. (1986). What is Legal Pluralism? *Journal of Legal Pluralism and Unofficial Law, 1*(1), 1-56.
Hann, C. M. (1998). Introduction: the embeddedness of property. In C. M. Hann (Ed.), *Property Relations - Renewing the anthropological tradition* (pp. 1 - 47). Cambridge, UK: Cambridge University Press.
Hann, C. M. (2007). A new double movement? Anthropological perspectives on property in the age of neoliberalism. [Review Essay]. *Socio-Economic Review, 5*(2), 287-318. doi: doi:10.1093/ser/mwl027
Holland, J. (2007). *Tools for institutional, political, and social analysis of policy reform: a sourcebook for development practitioners*. Washington, DC: The International Bank for Reconstruction and Development / The World Bank.
Hooker, M. B. (1975). *Legal pluralism : an introduction to colonial and neo-colonial laws*. Oxford: Clarendon Press.
Hughes, R. (2003). Legal Pluralism and the Problem of Identity. In A. Jowitt & T. N. Cain (Eds.), *Passage of change: Law, Society and Governance in the Pacific* (pp. 329-352). Canberra: Pandanus Books.
IVSC. (2011). *International Valuation Standards 2011*. London: The International Valuation Standards Council.
Korovulavula, I., O'Garra, T., Fong, P., & Ratuniata, R. (2008). Economic Valuation - iQoliqoli - Tourism Study Support (Fiji). In CRISP Coordinating Unit (Ed.), *Coral Reef InitiativeS for the Pacific (CRISP)* (Vol. Component 2A - Project 2A2, pp. 50). Noumea, New Caledonia: Secretariat for the Pacific Community (SPC).
Maine, H. S. (1861). *Ancient Law: its Connection with the Early History of Society, and its Relation to Modern Ideas*. New York: Charles Scribner.
Max-Neef, M. A. (2005). Foundations of transdisciplinarity. *Ecological Economics, 53*(1), 5-16.
McLeod, H. (2000). Compensation for landowners affected by mineral development: the Fijian experience. *Resources Policy, 26*(2), 115-125.
McNeil, K. (1989). *Common law aboriginal title*. Oxford: Clarendon Press.
Nicolescu, B. (2006). Transdisciplinarity - past, present and future. In B. Haverkort & C. Reijntjes (Eds.), *Moving Worldviews: Reshaping sciences, policies and practices for endogenous sustainable development* (pp. 142-166). Leusden: ETC/COMPAS.
Pascual, U., Muradian, R., Brander, L., Gómez-Baggethun, E., Martin-López, B., Verma, M., . . . Polasky, S. (2010). The Economics of Valuing Ecosystem Services and Biodiversity. In P. Kumar (Ed.), *The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations* (pp. 183-256). London & Washington: Earthscan, on behalf of the United Nations Environment Program.
Paterson, D. E. (2001, 1 - 4 July). *Some thoughts about customary land.* Paper presented at the ALTA (Australian Law Teachers Association) Annual Conference, Port Vila, Vanuatu.
Payne, G. (1997). *Urban Land Tenure and Property Rights in Developing Countries: A Review*. London: Intermediate Technology Publications/Overseas Development Administration (ODA).
PIFS. (2008). *Land Management and Conflict Minimisation - Guiding Principles and Implementation Framework for Improving Access to Customary Land and Maintaining Social Harmony in the Pacific [Executive Summary]*. Suva: Pacific Islands Forum Secretariat Retrieved from

http://www.forumsec.org.fj/resources/uploads/attachments/documents/LMCM synthesis report Executive Summary only COMPLETE.pdf.

Republic of Fiji Islands. (1999). *Mining Policy Fiji*. Suva, Fiji: Unpublished Fiji Government Policy Document.

Rigsby, B. (1998). A Survey of Property Theory and Tenure Types. In N. Peterson & B. Rigsby (Eds.), *Marine Tenure in Australia: Oceania Monograph 48* (Vol. Oceania Monograph 48, pp. 22-46). Sydney: University of Sydney.

Schlager, E., & Ostrom, E. (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land Economics, 68*(3), 249.

Sheehan, J. (2010). [On assessing compensation for native title - Personal Communication (30 July 2010) - Email between Deputy Director and Director of UTS: APCCRPR].

Sheehan, J., & Small, G. (2002). Towards a Definition of Property Rights *Working Paper 01.02*. Sydney: UTS Property Research Unit.

Tom'tavala, Y. (2010). *An analysis of judicial decisions relating to customary marine tenure claims in Pacific Island states*. Paper presented at the Law and culture: Meaningful legal pluralism in the Pacific and beyond, University of the South Pacific, Emalus Campus, Port Vila.

von Benda-Beckmann, F., & von Benda-Beckmann, K. (2006). The Dynamics of Change and Continuity in Plural Legal Orders. *Journal of Legal Pluralism and Unofficial Law, 53-54*, 1-43.

World Bank. (2003). Land Policies for Growth and Poverty Reduction. In K. Deininger (Ed.), *World Bank Policy Research Report*. Washington: Copublication of the World Bank and Oxford University Press.

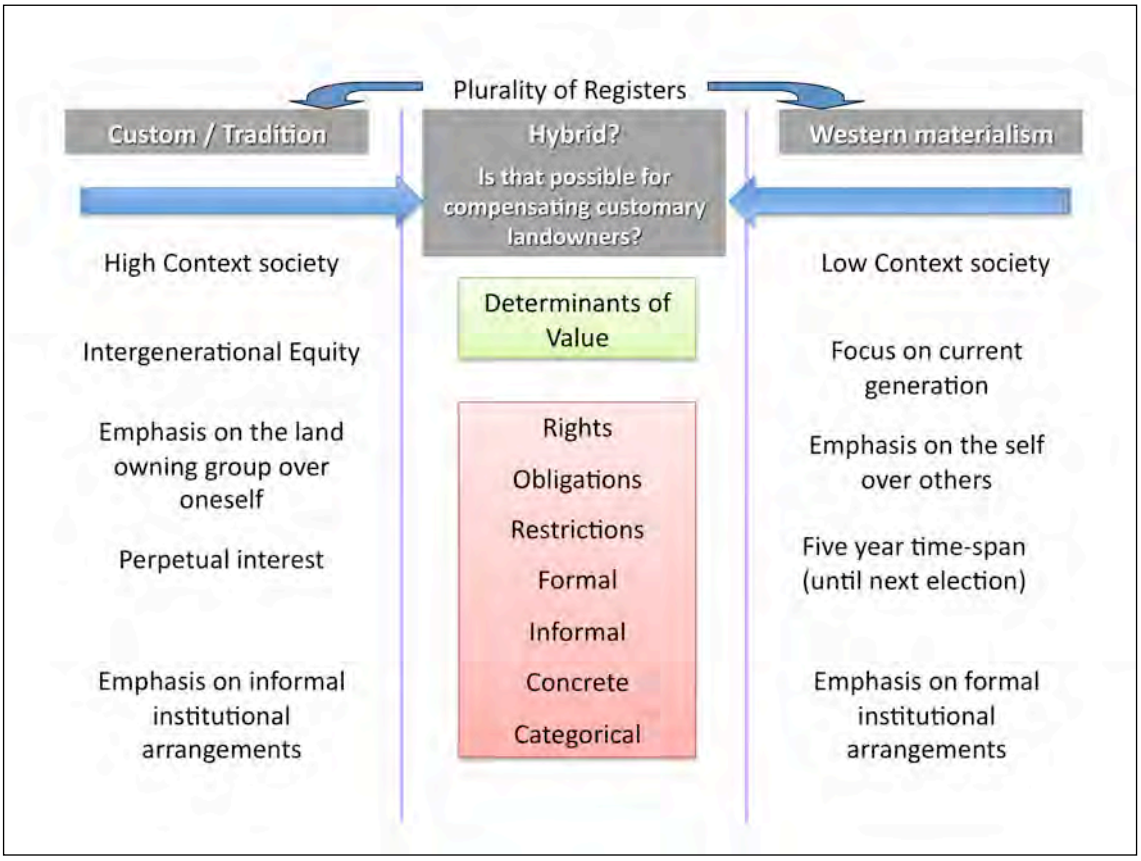

Figure 1: Plurality of Registers
(Source: Boydell & Baya for this research)

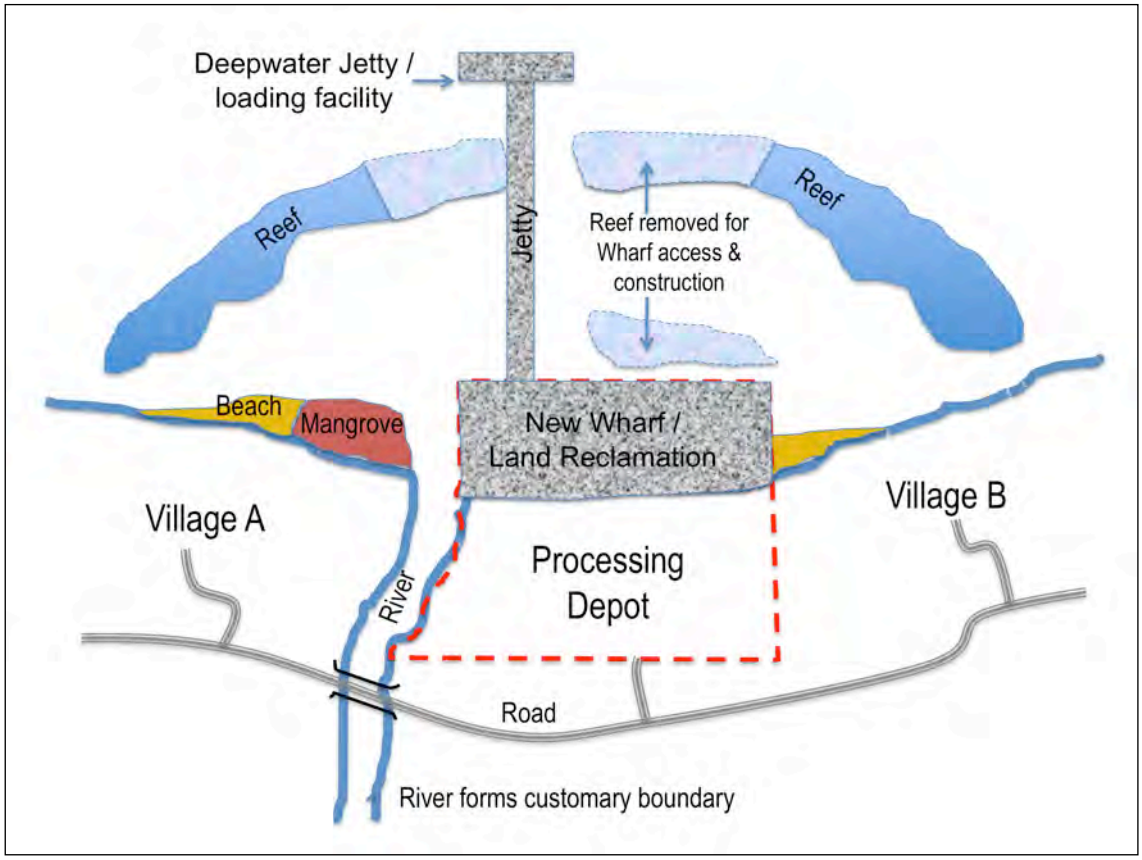

Figure 2: Wharf Scenario
(Source: Boydell & Baya for this research)

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)