

Common Property Models of Sea Tenure: A Case Study from the Roviana and Vonavona Lagoons, New Georgia, Solomon Islands

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In recent decades, Pacific Region indigenous sea tenure regimes have received considerable attention from social scientists who believe that marine-localized common entitlements and fishing practices can aid modern littoral fisheries management. The endorsement of sea tenure institutions as managerial tools, however, has proceeded without adequate consideration of their vulnerability to social and economic changes. The general view held by researchers is that Pacific Island sea tenure regimes are generally undermined by the influence of exogenous forces resulting in an open-access commons. In this article, it is argued that the contemporary transformation of sea tenure regimes emerges not only from exogenous agency, but from a complex set of autochthonous processes. A case study from New Georgia, Solomon Islands, is presented to show how sea tenure regimes can vary within an ethnically and culturally homogeneous region. Three tenure models are presented to show how different pre- and post-European contact regional settlement patterns, localized processes of political expansion and contraction, and dynamic indigenous sociocultural principles have resulted in institutional differences between each sea tenure model. The effect of the market economy on the organizational structure and managerial outcomes of each model also is discussed.

KEY WORDS: common property; sea tenure models; Roviana and Vonavona Lagoons; Solomon Islands.

INTRODUCTION

Discussion of Pacific Island customary sea tenure and its modern role in coastal resource management has come to the fore recently with the

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publication of several anthologies (Akimichi, 1996; Peterson & Rigsby, 1998; Ruddle, 1998a; South *et al.*, 1994) and ethnographies (Hviding, 1996). The general belief underpinning academic interest in Pacific Island sea tenure regimes is that they can aid modern littoral fisheries management in resource sustainable use and conservation. This effort, however, has ensued mostly without the proper consideration of biologic, ecologic, and socioeconomic evidence to support such a notion (Ruddle, 1998a; Aswani, 1998).

The relationship between sociocultural, economic, political, and ecologic transformations and sea tenure's institutional managerial responsiveness also needs to be explored further. The general commentary among researchers is that although Pacific Island sea tenure regimes are highly dynamic (Ruddle *et al.*, 1992), they are institutionally and managerially eroded by the influence of exogenous forces such as colonialism, neocolonialism, economic development, technological innovation, and indigenous sociocultural change (Graham & Idechong, 1998; Johannes, 1981; Mantjoro & Akimichi, 1996; Ruddle, 1994, 1998b). Such transformation is deemed linear and generally results in an open-access commons. Consideration of inter- and intraregional variation of sea tenure regimes and the multiple managerial repercussions of such diversity also generally is discussed vaguely.

In this article, it is argued that the contemporary transformation of sea tenure regimes emerges not only from exogenous agency including colonialism, economic development, technological change, and governmental neocolonialism, but also from a complex set of historical² autochthonous intraregional processes that result in different sea tenure configurations. This tenurial variation encompasses a gradient of managerial outcomes and repercussions ranging from the efflorescence of sea tenure regimes to their continuing institutional breakdown. A case study from the Roviana and Vonavona Lagoons, New Georgia, Solomon Islands (Fig. 1) is presented to show a spectrum of sea tenure regimes within an ethnically and culturally homogeneous region.

The processes of (a) regional pre- and post-European contact settlement patterns, (b) localized processes of political expansion and contraction, and (c) dynamic indigenous sociocultural principles are illustrated to show how the sea tenure models of territorial-enclosed entitlement, mosaic-entitlement, and transitory-estates have developed to produce organizational differences that are managerially altered when faced by extrinsic

²By historical processes is meant a period expanding from several generations before European-sustained contact (circa 1830) to the present (as extrapolated from oral traditions and historical records).

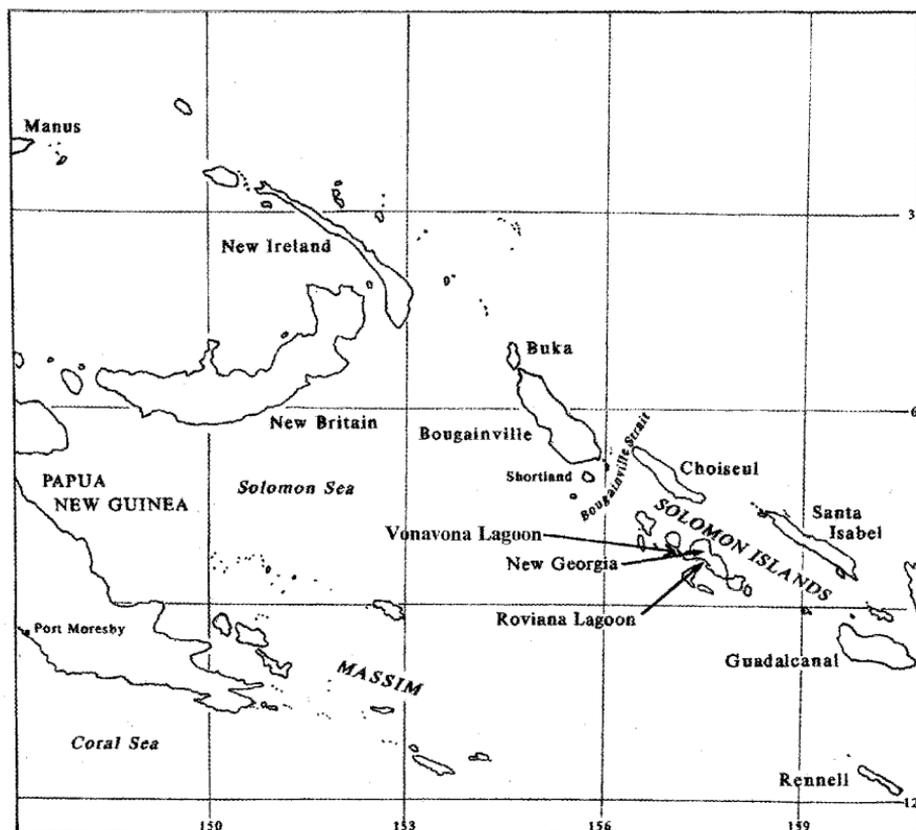


Fig. 1. The Solomon Islands.

forces. Such changes affect the fishery sustainability outcomes of each tenure regime. The *territorial-enclosed entitlement* model of sea tenure presents a condition in which territorial boundaries are circumscribed, jurisdictional power over estates is centralized, and sea entitlements are regionally recognized. The *mosaic-entitlement* model represents a situation in which territorial boundaries are contested, jurisdictional control over estates is decentralized, and entitlements are regionally dispersed and claimed by different groups. Finally, the *transitory-estates* model incorporates organizational elements of both the territorial-enclosed and mosaic-entitlement models of sea tenure (Aswani, 1997a, 1997b).

The case study shows that each of these models suffers to various degrees from internal regulatory instabilities, which result from the three outlined processes in tandem with extrinsic influences. Key to this discussion

is each model's historical development (i.e., the historical institutional transformations animated by indigenous and extrinsic agents that have resulted in a complex set of forces and diversity of consequences). Indeed, transformational processes have been exacerbated by the influence of exogenous agency. But the widely held notion that the only venue for Pacific Island sea tenure regimes confronted with exogenous political, social, and economic interference is institutional decay ultimately evolving into an open-access commons is rejected in this article. Also rejected is the assumption that the open access commons is the result of either institutional breakdown caused by the market economy or imposition of an open access regime by national or colonial authorities.

The illustrated case study is an ethnohistorical and ethnographic analysis of the historical and cultural processes that contribute to the formulation and reformulation of sea tenure regimes. Ultimately, this example suggests that recognizing forms of sea tenure and their multiple managerial, economic, political, and social outcomes is an *a priori* requirement for an understanding of their modern role in fisheries management. Before each of the aforementioned processes and models are examined, some key issues in common property and sea tenure research, and the conceptual framework employed in this paper are summarily reviewed.

COMMON PROPERTY AND SEA TENURE RESEARCH

In 1968, Garrett Hardin's "tragedy of the commons" proposed that unregulated access to common property resources, such as littoral fisheries, results in unhindered resource exploitation and environmental degradation. Such an idea, as recognized by Hardin himself (Hardin & Baden, 1977) was hardly new, because W. F. Lloyd had propounded such a notion as early as 1833 (Douglas, 1991; McCay & Acheson, 1987).

A multitude of scholars studying common property resource rights have commented on the analytical fallacy and attendant social and economic repercussions of assuming that all common property regimes, notably those in the developing world, are conducive to natural resource mismanagement (Feeny *et al.*, 1990; Quiggin, 1988; Runge, 1992). The basic criticism against Hardin faults his analytical failure to distinguish common property from open-access resources (Berkes, 1989; Ciriacy-Wantrup & Bishop, 1975; Feeny, 1994; Feeny *et al.*, 1990; McCay & Acheson, 1987). Simply put, the former is a situation in which participants in the commons preclude nonmembers from accessing resources while enforcing some type of resource use limitations on its participants. The latter, conversely, is a situation in which people cannot be excluded

from accessing and harvesting resources. Other critics have argued that the "free-rider" dilemma (an essential assumption in Hardin's argument), or a situation in which individuals obtain the benefits of their harvest but pass the environmental cost of their actions to other members of the group, is not an intrinsic component of all common property regimes (Oakerson, 1992; Raghupathy, 1995; Runge, 1992).

Bromley (1992) and other resource economists (Oakerson, 1992; Quiggin, 1988; Thomson *et al.*, 1992) have argued that the success of common property regimes is measured by their ability to adapt to exogenous pressures while retaining a measure of communal managerial control. Yet, these same researchers have cautioned about the dangers of essentializing the managerial outcomes of common property regimes. Like private property and state property, common property can be effective in regulating resource use and access in some cases but cannot in others. This rather crucial hindsight, that community-based systems can have multiple managerial outcomes, has not been properly documented by a number of anthropologists studying Pacific Island sea tenure (Dahl, 1988; Foster and Poggie, 1993; Johannes, 1978, 1981). Criticisms against the assumed regulatory nature of sea tenure institutions have been brought to attention by the work of Carrier and Carrier (1983) and that of Polunin's (1984). More recently, this concept has been revisited through the analysis of empirical case studies by several authors (Aswani, 1997a, 1998; Foale, 1998; Ruttan, 1998).

Considerable work on sea tenure has focused on the important issue of its relation to governmental policy and indigenous practice such as property rights, transfer rules, and means by which right holders control access to and use of resources (Hviding & Ruddle, 1991; Ruddle, 1998b; Sims, 1990; Wright, 1990). Interest in Pacific Island sea tenure also has led to the documentation of a range of informal and formal common property regimes including corporate sea tenure (Akimichi, 1984; Aswani, 1997a; Hviding, 1989, 1996; Nietschmann, 1985), rights to specific fishing techniques (Carrier & Carrier, 1983; McCutcheon, 1981), and property rights to particular marine species (Emory, 1965; Otto, 1997). The recognition of this diversity while important, requires an adequate analysis of each tenurial arrangement's vulnerability to endogenous and exogenous historical and socioeconomic changes, and the examination of their localized structural differences and concomitant managerial repercussions. Although such variation has been acknowledged by various authors (Hviding, 1998; Johannes, 1998; Pollnac, 1984; Sudo, 1984), empirical case studies delineating the influence of historical indigenous and extrinsic forces on the configuration of tenure regimes are few (Hviding, 1996).

CONCEPTUAL FRAMEWORK

Rappaport's (1984) distinction between a "cognized" and "operational" environment is useful in distinguishing ways that people perceive and actually behave (i.e., which can be measured) in a given environmental and social context. Applied to property rights, the terms "cognized entitlements" and "effective entitlements" are used to distinguish between people's perceptions of their rights to access and exclude others from using a commonly held resource and the actual or physical enforcement of those rights through the control of participating members and the exclusion of noninclusive ones.³

Bromley (1992) argued that "property is a claim to a benefit (or income) stream," albeit meaningless if no "correlate duties" are instituted to control access and use of the claimed resource (p. 4). Ingold (1986) aptly illustrated the difference between property rights that are area cognized (i.e., tenure) and those that are effectual or exercised (i.e., territoriality) (p. 169). "Tenure . . . constitutes persons as productive agents and directs their purposes," whereas territoriality "is an aspect of the means through which those purposes are put into effect under given environmental circumstances" (Casimir, 1992, p. 7).

The relevance of the distinction between "cognized" and "effective" entitlement to sea space here pertains to the way common property rights are exercised in a cultural and legislative context wherein people's entitlement to land and sea space are locally conceived as inalienable and mostly uncontested externally (e.g., government).⁴ Competing groups (e.g., lineages, villages, polities) having layered property rights over land and sea estates may choose either to enforce access limitations (i.e., implement control strategies against their own members and/or outsiders) or not, depending on (a) the social, economic, and political costs and benefits of defending an estate, (b) their ability to legitimize their territorial claims through validation by neighboring groups, and (c) the actual capacity either via formal or informal means to enforce their claims. In this scenario, people do not perceive their respective sea estates as open-access regimes and have developed various control strategies, or the lack thereof, depending on a number of transformations including internal political strife and the incursion of the market economy.

At a more profound level, however, the inception of people's contem-

³These concepts are somewhat comparable to Acheson's (1975) "perimeter-defended" and "nucleated territories" models.

⁴In most Melanesian countries, indigenous rights to hold and transfer sea (mostly to inshore waters) and land entitlements are in principle upheld by customary law sanctioned by national statutory law.

porary tenurial views and the means by which those views are set into motion originate in the settlement patterns of different groups and their subsequent social, cultural, and political entanglement. Such an indigenous process in tandem with exogenous agents creates a complex set of forces that result in different sea tenure configurations, each having different managerial outcomes.

Placed within the framework of theory, the distinction between cognitive and effective entitlements pertains to the development of human territoriality as a product of resource spatiotemporal variability, abundance, and predictability. From this standpoint, or what is known as the "economic defendability" model, territorial behavior is expected to follow when its benefits outweigh time and energy used to defend a territory (commensurate with territorial size), the opportunity cost of territorial behavior, the benefits of relying on a spatially bounded area, and the risks associated with defending a territory (Dyson-Hudson & Smith, 1978).

An alternative model, or the "social boundary defense," suggests that the more unpredictable and scarce the resources are, the firmer social controls are on interlopers (Cashdan, 1983). In either case, the socioeconomic value of a scarce resource or one perceived to be scarce becomes instrumental in the development of human territoriality. Yet, territorial behavior does not occur in a political vacuum. Various forms of territorial behavior emerge from the political mechanisms (e.g., within and between group competition) that regulate distribution, access, and use of terrestrial and marine resources (Smith, 1988). Political diversity and the ability of authorities to impose resource use and access restriction on inclusive and outside members are key aspects in determining whether resource access controls actually can be implemented.

Participants in the commons may exclude interlopers from accessing and using a resource, yet may themselves become the worst exploiters if political leaders cannot impose and enforce coercive measures. Bromley (1992) argued that if no "unit of coercion" is instituted (either locally or externally), common property regimes suffer from the same managerial problems as open access regimes do. Potential conflict of interests between individuals and their respective social groups can lead to what game theorists term the "prisoner's dilemma" (Maynard Smith, 1982). The dilemma suggests that in a two-person game, rational individuals will act in their self-interest to the detriment of their mutual benefit. Hence, in a collective context, unless members of a group keep tabs on outsiders and each other, or use a tit-for-tat strategy (Axelrod, 1984), individuals will tend to free ride by hoarding resources to the detriment of the collective well-being (Boone, 1992; Hawkes, 1992).

Runge (1992) and Raghupathy (1995), among others, contested this

idea by arguing that a free-rider strategy need not be dominant, particularly in village-level common property regimes wherein decision interdependence and a set of specified engagement rules can assure members of the group that others will cooperate rather than defect (i.e., free ride). This assertion is generally applicable for sparsely populated communities in which a tit-for-tat strategy is more likely to work. Under conditions of rapid population growth and economic transformation, community-based management institutions can be, but not always are, undermined by their member's shift to a free-riding strategy as suggested by the "prisoner's dilemma."

Free riding can, to some extent, be avoided if informal or formal regulatory measures are instituted and enforced. Resource availability and spatiotemporal predictability, as previously mentioned, become crucial factors in determining the cost-benefit ratio of territorial behavior. Under conditions of abundant resources, members of a common property regime may allow members and nonmembers alike to exploit resources freely, or to practice what is known as "tolerated theft" (Blurton Jones, 1987). Resource surplus causes each individual in a group to have diminishing marginal use for an extra unit of resource, and therefore to find that the costs of defending that additional unit from other group members, or even outsiders, are too great (Hawkes, 1992, 1993). Conversely, as a resource is deemed scarce or valuable, the cost-benefit ratio of territorial excludability may warrant the development of a control strategy and the subsequent possibility of resource management. Any control strategy, however, must be accompanied by enforceable sanctions of one type or another to subvert free riding and to ensure cooperation (Feeny *et al.*, 1996).⁵

In most areas of the Solomon Islands, population regional mobility via settlement patterns, intermarriage, and other historical processes such as warfare and missionization has determined whether entitlement holders to an estate are geographically nucleated or dispersed. Where they are nucleated and adjacent to their estates, political authority over territorial matters tends to be centralized; territorial boundaries are clearly demarcated; and control strategies can, in part, be effectively implemented. Members freely exploit resources, and nonmembers generally are allowed to use resources for subsistence purposes only (i.e., tolerated theft). When commercial pressures increase, local authorities usually become territorial and may impose access and use restrictions on members and nonmembers alike. Commercialization then can result in the efflorescence of tenure

⁵Cooperation in human populations originates from evolutionary mechanisms such as kin selection (Hamilton, 1964) and reciprocal altruism (Ostrom, 1990), particularly in small populations.

regimes (Aswani, 1997a). This situation is referred to here as the territorial-enclosed entitlement model. Where entitlement holders are geographically dispersed, or mosaic authority over an estate is more decentralized, boundaries while demarcated are contested, and control strategies are harder to implement. Both members and nonmembers are freely allowed to exploit resources for subsistence purposes. As in the nucleated case, fishery commercialization impels local authorities to impose control strategies, but porous boundaries, political dissension and contest, and jurisdictional ineffectualness result in free riding by members and nonmembers alike.

Notwithstanding people's cognized inalienability of their customary rights, dispersed entitlements allow for a *de facto* open-access regime. This condition represents the "mosaic-entitlement" model. The "transitory-estates" model displays organizational elements of the other two sea tenure models. This discussion suggests that sea tenure's institutional responsiveness to exogenous agency is not linear (i.e., a guaranteed evolution toward an open-access regime). Before studying each of the models, we examine how (a) distinct regional pre- and post-European contact settlement patterns, (b) localized processes of political expansion and contraction, and (c) a set of dynamic indigenous sociocultural principles have given rise to different sea tenure blueprints.

REGIONAL CONTEXT AND SETTLEMENT PATTERNS

The Roviana and Vonavona Lagoons in the New Georgia Group, Solomon Islands, extend contiguously over a large section of southwestern New Georgia Island and the elevated limestone islands of Parara and Kohinggo in the northwest (Fig. 2). Roviana encompasses an area of several hundred square kilometers and extends more than 50-km southward from Munda to Kalena Bay. The adjacent Vonavona Lagoon is smaller and has a topography similar to that of Roviana (Aswani, 1997a). Rain forests pierced by gardens and coconut plantations cover New Georgia's mainland littoral fringe and the raised coral islands forming the lagoons. Several thousand people sharing cultural and linguistic affinity live scattered across the barrier islands and the New Georgia mainland.

In the Roviana Lagoon, the larger tribal polities are the chiefly districts of Saikile and Kalikoqu, followed by the smaller Nusa Roviana-Kokorapa and Munda area districts of Dunde, Kekehe, Lodu Maho, and Kindu. In the Vonavona Lagoon, the major chiefly districts are in Madou, Repi, Barasipo, Buni, and Rarumana at the extreme end of Parara Island, with other smaller settlements on the Kohinggo side of the lagoon (Fig. 2). These groups, although contemporarily autonomous, share kinship ties

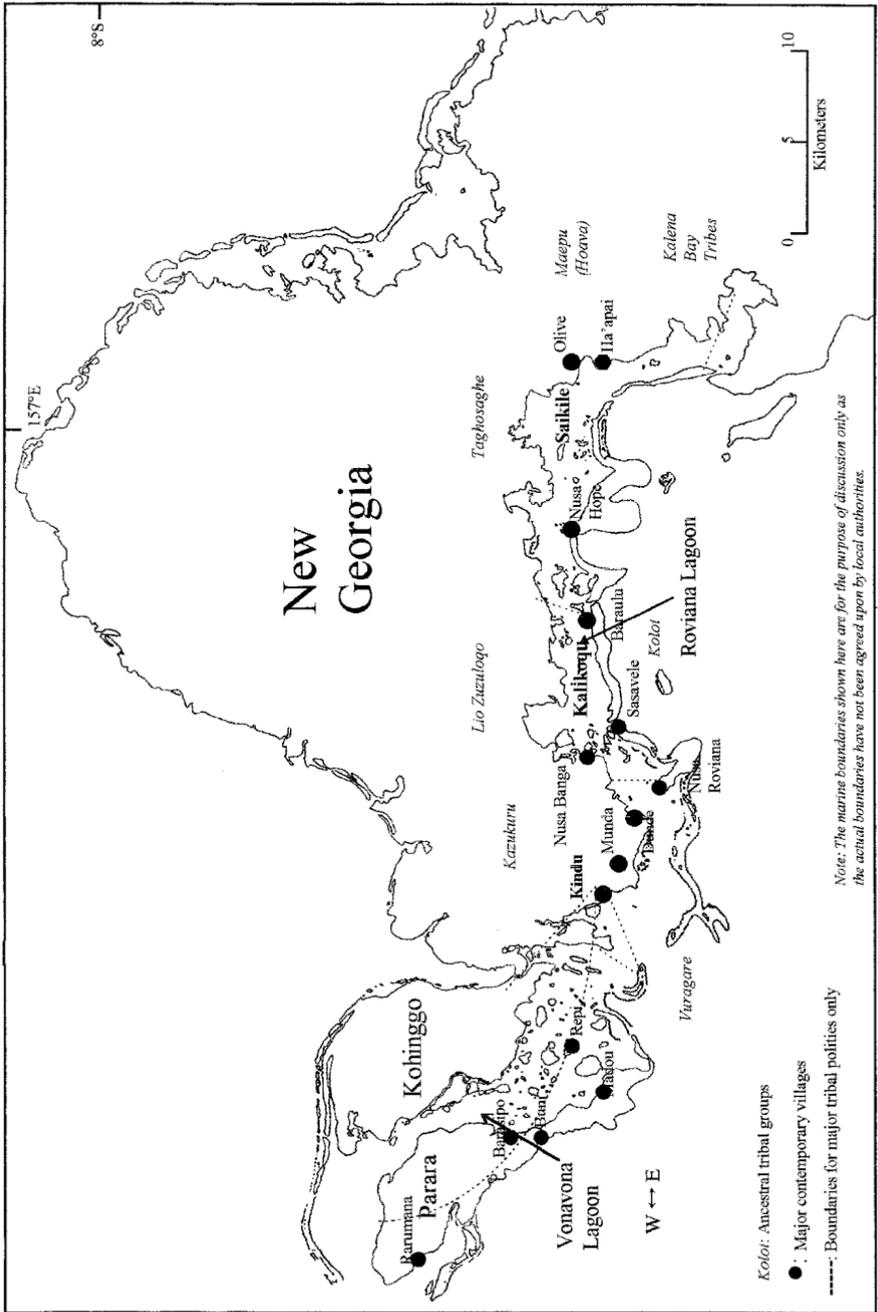


Fig. 2. The Roviana and Vonavona Lagoons.

originating from a common ancestry and a long history of tribal intermarriage. Kinship relationships also extend interregionally to include bonds with other islands in the Western Solomon Islands and, in recent years, increasingly with the Eastern Solomon Islands. The Roviana vernacular, a language belonging to the northwestern and central Solomon Island branch of Austronesian languages, is spoken from Koqu Kalena at one end of the Roviana Lagoon all the way to Rarumana at the tip of Vonavona Island. Linguistic and sociocultural homogeneity in the region originates from the fusion over the last four centuries of inland non-Austronesian, Austronesian-speaking, and coastal Austronesian populations.

Roviana⁶ oral tradition is full of references to population movements within and beyond New Georgia Island, movements crucial to an understanding of Roviana present-day sociocultural configurations and territorial distribution. The oral accounts presented herein are a general narrative of Roviana ethnohistory. The reliability of this abbreviated account comes from comparative ethnohistorical research in the region carried out over 27 months and includes the analysis of parallel accounts as told by numerous informants belonging to different clans and tribes. Consistency between narratives likely reflects original events and/or processes (Vansina, 1985; Wiessner & Tumu, 1998).

Before their coastal radiation, several inland groups inhabited the mountainous interior of southwestern New Georgia. These tribes included the Taghosaghe, Lio Zuzuloqo, Hoava, Hoeze, and Kalena Bay tribes on the eastern side of the Roviana Lagoon, and the larger polity of Roviana-Kazukuru⁷ at the western end. These populations progressively intermarried and moved to the coast before and during European contact.⁸ Approximately 13 generations ago, Roviana-Kazukuru bush-dwellers descended from the interior of New Georgia to settle the barrier island of Nusa Roviana at the western end of the Roviana Lagoon. On their arrival at Nusa Roviana Island, Roviana-Kazukuru bush-dwellers found that although the island was uninhabited, the eastern end was regularly visited by the Kolo

⁶Here "Roviana" is used also in reference to Vonavona people because these originate from the Roviana area.

⁷Some informants, particularly in the Munda area, claim that these were different tribes remaining so until the late nineteenth century. Most respondents in Kalikoqu and Saikile, however, maintain that the Kazukuru and Roviana, which were two different tribes, amalgamated before descending to the coast. Although the author concurs with their account, it is probable that some Kazukuru speakers remained in inland Munda and retained some autonomy until their final absorption by Roviana-Kazukuru groups resettling New Georgia from Nusa Roviana Island in the early to midnineteenth century (Aswani, in press; Aswani & Sheppard, 1999).

⁸Migrations continued after Western contact. In fact, Hoava groups descended to the coast as late as the 1920s.

tribe, and the western side was used by the Vuragare⁹ coastal peoples (Fig. 2). The Roviana-Kazukuru people eventually formed alliances through intermarriage with the Vuragare and Koloï¹⁰ people, extending their territorial rights to cover the western end of the New Georgia mainland and all the reefs extending from Nusa Roviana Island to Patu Parao near Gizo.¹¹ Their descendants became a major military polity in the region and the feared nineteenth century headhunters of Roviana (Aswani, in press).

After the initial radiation, and several generations before Nusa Roviana Island and the Munda area were attacked by a cutter launched from the British naval warship *Royalist* in 1891,¹² numerous Nusa Roviana inhabitants had spread eastward to occupy several Roviana Lagoon barrier islands and westward to the New Georgia mainland. After the *Royalist* attack, resettlement east and west accelerated.

Before this event, Nusa Roviana Island had been divided into three subsections: Kali-Koqu¹³ in the east, Kokorapa-Kazukuru in the center, and Vuragare in the west, all of which had intermarried and seemingly had been under the rule of a sole chief in the late eighteenth till early nineteenth centuries. Possibly because of overcrowding, political conflict, and the eventual confrontation with the British administration, those people who had acquired tribal rights elsewhere were able to disperse. Although almost all Nusa Roviana inhabitants were genealogically linked through their Roviana-Kazukuru ancestry, they did not all share the same assortment of entitlement rights. Some Kokorapa and Vuragare descendants radiated toward Munda, Parara, and Rendova, as they had Kazukuru-inherited rights in the New Georgia mainland and Vuragare rights in coastal Rendova and Parara. The Kali-Koqu inhabitants of Nusa Roviana progressively moved

⁹It should be noted that although the Vuragare polity is treated as an ancestrally bound coastal group, a faction opposing their present reef claims suggests that the "Vuragare" are only Kazukuru ("bush") people who settled the sea-facing section of Nusa Roviana and, therefore, should not be treated as a distinct people. Even if the "Vuragare" were only Kazukuru descendants, they can claim that they alone settled the coastal fringe, and that they alone acquired rights to coastal Parara through their intermarriage with the original Parara inhabitants, who were mostly annihilated by Kindu-Kohinggo warriors.

¹⁰Eventually, conflict between Koloï and Kazukuru pushed the former back into the inner Roviana Lagoon.

¹¹This account, while generally accepted, is not entirely endorsed by all informants. Numerous discrepancies arise in indigenous ethnohistorical accounts as a result of different groups trying to establish their social, economic, and political hegemony over opposing groups. The goal here is not to identify accurate historical events, but rather to show settlement processes in the region.

¹²Most accounts of this attack suggest that Nusa Roviana was shelled (Bennett 1987). According to the Sydney Morning Herald of December 10, 1891, cutters launched from the *H.M.S. Royalist* attacked Nusa Roviana.

¹³Here the term Kali-Koqu is used in reference to a "bay-side" settlement on the eastern side of Nusa Roviana Island.

east, as they had acquired rights through their intermarriage with the lagoon barrier island dwellers of Koloï and the Taghosaghe and Lio Zuzuloqo bush peoples of New Georgia.

Taghosaghe and Lio Zuzuloqo inland groups had initiated their descent to the Roviana Lagoon possibly during the early to mid 1700s, and had intermarried with the barrier island tribe of Koloï. Kali-Koqu inhabitants intermarried with the Lio Zuzuloqo, Taghosaghe and Koloï people, and these groups eventually fused into what today comprises the chiefly district of Kalikoqu. The chiefly district of Saikile was formed from Nusa Roviana settlers in the late eighteenth century in a fashion similar to that of Kalikoqu. The movement and fusion of some Nusa Roviana populations with inner lagoon people has led the Kalikoqu and Saikile polities to dominate large portions of land and sea in both the New Georgia mainland and the lagoon barrier islands (Fig. 2).

The settlement of the Vonavona Lagoon can be divided into two major migratory events. The first occurred in precolonial times when Kazukuru people living in Kindu moved north into Kohinggo Island, and during the first half of the twentieth century when Kekehe and Dunde (Munda area) people progressively moved to Parara Island (Aswani, 1997a).

It is important to remember that political integration in the region was not a linear process, but rather a process of expansion and contraction, with each radiation from Nusa Roviana indicating the political breakup and eventual reconstitution of regional polities into smaller and sometimes larger units. The illustrated ethnohistorical events, although complex, are significant because the political and social organization underlying each sea tenure model arise, in part, from these events. Tribal movements to Kalikoqu and Saikile were the incipient processes giving rise to sea tenure regimes that locally are "territorially enclosed" and simultaneously "mosaic" beyond their estates. Roviana populations remaining at Nusa Roviana and Munda, and the subsequent movement of some of these people to western Vonavona, respectively engendered the mosaic-entitlement and transitory-estate models

The chiefly districts of Kalikoqu and Saikile are characterized by nucleated entitlement holders. Tenurial control is centralized, and territorial boundaries are clearly defined and uncontested.¹⁴ Constituent polities within each political enclave have, after several generations of intermarriage, pooled their land and, particularly, their sea entitlements under the jurisdiction of each respective chief. Entitlement holders are nucleated in various villages and live adjacently to their collective reefs.

¹⁴Some boundary disputes between Saikile and Kalikoqu emerged during the 1970s. These have been tentatively resolved.

The Nusa Roviana and Munda area, on the other hand, is presently composed of several decentralized tribal groups that have traditional political authority over relatively smaller land and sea territories. Marine boundaries project seaward from each village, and marine entitlements are not jurisdictionally pooled as in Saikile and Kalikoqu, but remain under each village's control. The political organization of Vonavona Lagoon is similar to that of Munda and Nusa Roviana, where each major village is a chiefly enclave, an exception being Repi and some smaller villages in Kohinggo (eastern Vonavona) that are under the jurisdictional umbrella of the Kindu chief in a fashion similar to that of Saikile and Kalikoqu.

Key to this discussion is the process of tribal amalgamation and subsequent schism. Members of Kalikoqu and Saikile have extensive rights in Roviana-Kazukuru and Vuragare because they, in part, originate from Nusa Roviana Roviana-Kazukuru and Vuragare groups. But they also have inner lagoon tribal rights accrued from Koloï and other inland population intermarriages that the Nusa Roviana and Munda people do not have. Conversely, entitlements of Nusa Roviana and Munda area inhabitants are less extensive because of fewer intermarriages with regional polities and more intermarriages with foreign groups lacking rights in New Georgia (e.g., Malaita). Similarly, because present-day Vonavona inhabitants are recent immigrants (two to three generations) from the Nusa Roviana, and principally the Munda area, with the possible exception of some eastern Vonavona hamlets, their rights are also localized to Vonavona and Munda. The mean number of descent affiliations of each polity, Kalikoqu having 7.3, Saikile 5.4, Nusa Roviana and Munda 4.9, and Vonavona hamlets 4.9, reflect this.¹⁵ Kalikoqu and Saikile descent from apical Roviana-Kazukuru and Vuragare ancestors have allowed these people to pursue territorial expansionism westward toward Nusa Roviana, Munda, and even Vonavona while maintaining their own territorial integrity. Most Nusa Roviana, Munda, and Vonavona inhabitants, however, cannot claim rights to Kalikoqu and Saikile because they lack filial bonds to inner lagoon groups, and, in fact, must keep their increasingly besieged boundaries from Kalikoqu and Saikile territorial claims. The common bond linking all these groups is their collective Roviana-Kazukuru and, in part, Vuragare ancestry.

Church affiliation is another significant element differentiating each tribal group in Roviana and Vonavona and influencing tenure practices. The larger political blocks of Kalikoqu and Saikile in Roviana are mainly adherents to the Christian Fellowship Church (CFC), with smaller pockets

¹⁵Note that some of these affiliations are from other areas in the western Solomon Islands, including Marovo, Simbo, Vella Lavella, and so forth. Eastern Solomon relations are more prevalent in the Munda and Nusa Roviana areas.

of United and Apostolic Church followers at Saikile. At Vonavona, all major hamlets, with the exception of Rarumana, are predominantly CFC.

The CFC, an indigenous religious secessionist movement, was officially established in 1961 as the first independent church of the Solomon Islands. The dogma of the CFC is a syncretism combining traditional beliefs of ancestral worship with Methodist doctrine (Harwood, 1971, 1978). The church administrates its own schools and is involved in development projects such as logging and cocoa plantations.

The importance of the CFC church cannot be overstated because the church is the major player in the cultural, social, political, and spiritual life of many lagoon inhabitants. The Munda and Rarumana areas are riddled with competing religious denominations ranging from the United Church (former Methodists) to smaller evangelical groups such as Rhema. Significant to this discussion is the CFC's doctrinal impact on contemporary tenure practices. Because CFC adherents are institutionally and communally unified, control over its members in matters of resource management can be accomplished through traditional and church authorities, particularly in Kalikoqu. In the case of Nusa Roviana, Munda, and Rarumana, religious heterogeneity and dissension between component denominations have made any collective managerial efforts channeled through churches harder to implement.

PROCESS OF POLITICAL CONTRACTION AND EXPANSION

Roviana political organization and integration are not a linear, but rather a process characterized by epochs of political expansion and contraction. Population movements and intermarriages in the region over the past few hundred years, as discussed earlier, have resulted in the tribal amalgamation of diverse cultural traditions. But the formation of a pan-Roviana cultural tradition has not eliminated a measure of cultural diversity in each composite group, particularly in regard to territorial claims and related tribal histories. Such differences afford the composite parts of the Roviana cultural mosaic the opportunity for schism and expansion through the reaffirmation of their own cultural identities. Such a dynamic process is geared to the social, historical, and economic context of the time and renders everchanging political configurations.

After the radiation of Roviana-Kazukuru, Taghosaghe, and Lio Zuzulo inland populations to the coast and their progressive fusion with coastal groups sometime between the sixteenth and the seventeenth centuries, a central Roviana polity developed on Nusa Roviana Island. Ethnohistorical and archaeological evidence (Aswani, in press; Sheppard *et al.*, 1998) sug-

gests that after coastal settlement, Roviana politics spirally became involved in raiding and trading. Head-hunting evolved as the central form of ritualized warfare in unison with interisland trading, which established an economic base and extended collateral alliances. During this turbulent period, the system of social differentiation was transformed from a system of "lateral expansion" to one of "apical demotion" (Fox, 1995, pp. 214-225), whereby genealogical imperative replaced place of origin as a vehicle for constructing social identity and rank.

Roviana land and sea entitlement generally is reckoned by a group's shared kinship ties to a founding ancestor who, through original occupation, warfare, and/or exchange, settled a given portion of land and/or reef and built shrines as signatures of his occupation and recognition of his ancestors. Oral traditions of the time suggest that for inland groups, shrines were not territorial markers per se nor specific indicators of land transactions or appropriation, but rather places of ancestral worship.

After coastal radiation, the transformation of kin-reckoning as suggested by Fox's (1995) model of Austronesian social differentiation, required chiefs to seize focal shrines and, by extent the land and reefs beneath and contiguous to them, to attain the necessary ancestral efficacy to validate their genealogical rights to power. Chiefly, widening control over matters of land access and distribution resulted in the construction of shrines along territorial boundaries as markers of chief political hegemony. This period is marked by the rise of genealogical reckoning as a vehicle to attain leadership and land control. Political dissension and territorial schism thereafter resulted in the constant reshuffling of territorial boundaries.

Frequently, resettlement of a group, as discussed in the previous section, was triggered by the political struggle of Roviana chiefly lineages. Whereas detailed ethnohistorical analysis of Roviana political processes and events are too complex and lengthy to review here, it is worth summarizing some major changes in the Roviana political landscape.

During the late eighteenth and early nineteenth centuries, Roviana's centralized power at Nusa Roviana Island began to wane, with the ensuing political breakup of several lineages. One Roviana faction moved to Saikile where it established its own chieftainship. Soon thereafter, several groups broke off and established their own chiefly lines in the New Georgia mainland at Munda. All these splinter groups were consanguinially related to the central chiefly lineage at Nusa Roviana and continued being allied to the central chieftainship. Resettlement ensued because dissenting lineages had primary rights to the mainland via their apical Kazukuru filiation and collateral rights elsewhere attained through intermarriages with other regional groups. Toward the end of the century, political dissension and conflict with Europeans resulted in further splintering from Nusa Roviana,

with groups moving toward the east and west and establishing their own chiefly polities.

Before and shortly after World War II some Munda area groups settled in Western Vonavona. These movements again rearranged the political and territorial landscape of the region. Today this process persists and, in fact, has been exacerbated by the intrusion of development schemes such as logging and baitfishing. Composite members of each regional polity are attempting to dissect each estate by asserting their own political and territorial autonomy. This intraregional political mosaic, with its ever rearranging political configurations, has had a tremendous influence in the contemporary formulation of sea tenure regimes. Such dynamism is afforded, as described in the following section, by the underpinning cultural and social fluidity of the Roviana kinship system.

THE DYNAMIC ROVIANA KINSHIP SYSTEM

Family units in the Roviana and Vonavona Lagoons generally live in extended compounds including many of their closest relatives. Basic to Roviana social organization is the concept of *butubutu*, or kindred groups that share consanguine ties. The term *butubutu* does not refer to a specific consanguine condition, but rather represents multiple kin social relationships that range from extended families to full sociopolitical units. Hviding (1996) defines a *butubutu* as “the term used variously for any variety of cognatic or unilineal ‘descent’ groups based on apical ancestors, for the more narrowly defined, corporate descent groups living in and controlling a specific area, for ego’s own bilateral kindred, for small localized lineages, and for large extended families”(p. 136). The defining characteristic of a *butubutu* is its attachment (*soto*) to a specific or set of land and sea estates (*pepeso*).

Roviana social organization resembles what Hviding (1996) described at nearby Marovo Lagoon and Scheffler’s (1962) description of Simbo Island. Affinity with a descent group is bilateral (cognatic descent), membership being acquired either by matrilineal or patrilineal descent. In Roviana, as with other groups in New Georgia, bilateral descent is cumulative. That is, an individual can theoretically amass filial links through his or her genealogical association to various maternal and paternal ancestors, potentially blurring boundaries between social groups. Generally, however, affiliation by descent does not manifest in an individual’s participation in all of his or her consanguine kindred groups. Propinquity to a group usually depends on place of residence, strength of filial links, and the possible advantages in terms of resource accessibility

and social prestige. But an individual's affiliation with other estates remains ever present, offering that person the chance to resettle if ever required to do so.

Roviana and Vonavona inhabitants access land and sea resources by virtue of their birthrights, spousal affiliation, and location of residence. Individuals usually have binding rights to a certain estate (*pepeso*) by virtue of their birth to the controlling descent group. The proportion of an individual's jural strength (*tinago*) over an area depends on the number of times he or she is linked to that lineage.

Usufructory rights to use and access a territory need to be distinguished from decision-making rights. The polysemic nature of Roviana kinship relations conceptually allows an individual to redefine his or her kinship alliances at any time (Keesing, 1972). But an individual's affiliative choice requires the recognition of his or her kin to attain social validation. For instance, if an absentee returns to his ancestor's area of origin two or three generations removed, he or she may be allowed to establish in the area, but may be denied jural control over land matters unless the genealogical link to the group is of importance (e.g., to a chiefly lineage).

The bilateral descent rule is not universally binding because there is a tendency between some groups in Roviana (e.g., Kalikoqu) to stress female over male filial links in matters of land authority and distribution. Men frequently will refer to their genealogical association to central females in their decent line (*podo pa varikaleqe*, or "born to a woman") to accent the preeminence of their territorial claims over other members. Individuals who can trace, or inconspicuously modify, their descent to an unbroken line of females, or what Hviding (1996) terms "cumulative matrification" (p. 150), in general, have stronger decision-making rights in matters of a tribe's estates than those that trace their descent through patrilineal descent. Strength in one's claims to land through matrification is particularly binding for communally held undisturbed forest (*muqe*), because rights to individual shares of land (*hinia*) and garden plots (*emata*) can be claimed with equal strength through either the father's or mother's lineage. In addition, ties to chiefly lines (*tuti bangara*) from either the maternal or paternal side also constitute a powerful genealogical link in land and authority matters.

Critical to this discussion are the fluidity and dynamism of Roviana kinship and tenure principles. Cognatic descent and the culturally sanctioned practice of amassing tribal filiations (Hviding, 1996, p. 150) allows for the development of a very dynamic system, particularly, as pointed out in the previous section, for political schism and redistribution of populations throughout the landscape.

ROVIANA AND VONAVONA SEA TENURE: THREE MODELS

To conceptualize the Roviana tenure system, one needs to juxtapose land and sea tenure regimes. For Roviana inhabitants, a *pepeso* is a property domain that extends from the mountain peaks of South New Georgia (*tutupeka*) to the barrier islands that form the Roviana Lagoon (*toba*) and beyond to the open sea (*lamana*) midway between the channel separating South New Georgia and Rendova Island.¹⁶ People recognize their tribal entitlements over land and sea as integral, but economically and jurisdictionally distinguish between these two domains. Land is a physical realm that can be worked and transformed. Most significantly, it can be claimed through its physical modification. Clearing primary forest (*muqe*) or littoral mangrove stands (*petupetuanana*) and altering the biotic features of the landscape can confer an individual permanent claim to a parcel if sanctioned by the chief and/or village head man.¹⁷ In general, coconut palms or *Canarium* nut trees are planted, although in recent years, avocado and mango trees have been used. Indigenous land tenure rules, particularly in areas not contested by any specific kin-based group but kept as a commons within the main polity, encourage a sort of pioneering land grab, resulting in the clearing of coastal mangroves and forests to make way to coconut plantations (Aswani, 1997b).

Land access and control of corporate estates have to be distinguished from land plots held by individual lineages. Commonly, extended families hold between one and four individual plots of land (*hinia*) that are exclusively used by members of that lineage or family. Nobody has authority over the plot except the family head (*palabatu*) and immediate relatives. The planting of *Canarium* nut trees or palm groves by direct ancestors of a claimant or group (e.g., grandfather) signalizes the exclusive tenure, unless otherwise specified by past granting and receiving parties, to a plot of land.¹⁸ In recent years, chiefs and elder affiliates have laid claim to the timber rights within these "private" estates, resulting in widespread conflict. Besides their respective *hinia*, each family has access to communal plots for gardening usually, situated in proximity to the village. Members of the village's core

¹⁶For West Vonavona inhabitants (Parara side), a *pepeso* includes the land extending from the flat raised limestone island of Parara to its contiguous reefs. For East Vonavona inhabitants (Kohinggo side), a *pepeso* extends from the interior low peaks of Kohinggo Island to the adjacent lagoon reefs.

¹⁷Note that this process does not include usufruct rights to communal garden land near villages.

¹⁸In the past, such transactions required the payment of *poata* shell-ring valuables for garden land and *bak iha* shell-ring valuables for larger tracks. Some informants maintain that allowing someone to plant *Canarium* trees constitutes only an usufructory transaction unless otherwise specified. Generally, but not always, usufruct arrangements were mostly negotiated with slaves (*pinausu*) taken during headhunting raids or their descendants.

group having stronger or primary rights to the village communal estate can hold these plots (*emata*) in perpetuity and those having weaker or secondary rights use of the land have only usufructory rights, unless otherwise specified by the village senior men and women.¹⁹

Conflict and land expansionism occurs at two levels: intra- and inter-kindred levels of competition. The former entails competition between siblings to seize their parents' *hinia* by clearing a section of the land and transferring its entitlement, albeit such transaction can sometimes be permanent, and at other times only usufructory. The latter takes place when various descent groups within the larger polity compete to access communal land, particularly primary forest (*muqe*) under the chief's control that has never been cleared or appropriated by any specific descent group.²⁰ Conflict between siblings within *hinia* are more prevalent in the Munda area where garden areas are increasingly limited, whereas clearing of virgin forest and coastal mangroves occurs with more frequency at Kalikoqu and Saikile where there is more available land.

The sea, conversely, remains a comparatively unalterable property domain, which relative to land does not provide the same kind of sustenance and income benefits. The key aspect is that the sea cannot be claimed through its physical modification as land can, and therefore remains in the public domain.²¹ Although the Roviana tenure systems allow individuals *de jure* control to waters contiguous to their coastal land estates (*hinia*), chiefs assert *de facto* communal tenure and access to all lagoon marine habitats and do not recognize such claims. In any case, people generally ignore individual attempts to regulate access based on the rationale that marine habitats are a common property asset under chiefly jurisdiction. Exceptions to this rule occur when prominent landowners ask people to avoid their adjacent reefs temporarily to husband resources for a special upcoming social event (e.g., marriage), or when people "plant" shells (usually *Tridacna* or *Pinctada* shells) in their immediate waterfront and ask others not to poach their shells.

Surrender and subsequent chiefly entrustment of localized entitlement

¹⁹Schneider (1998) objects to the use of terms such as "strong" or "primary" rights and "weak" or "secondary" rights on the basis that these concepts did not exist in autochthonous Roviana. The author's work in the area in 1992, 1994-1995, and most recently in 1998 and 1999 made it clear that people categorically distinguish the strength of an individual's tenure rights according to his or her cumulative filiations to the group. Therefore, these terms remain heuristically useful to define people's land use and access rights (Hviding, 1996; Scheffler, 1962).

²⁰In recent years, various decent groups competing with each other to access communal land for small-scale timbering ("walk-about" saw-milling) have heightened this process (Aswani, 1997a)

²¹In the past, fish weirs were built on top of reefs. Today, their remains indicate the maritime presence of coastal groups and a signature of their previous tenure.

to sea space is best illustrated by the Taghosaghe tribe case (a component of the present-day Kalikoqu polity). After Taghosaghe's movement from the interior of New Georgia to settle the Roviana Lagoon, each of his three grandchildren was allotted an entitlement domain, these being the interior expanses of forested land, the rivers, and the reefs and islands. To prevent future conflicts, trusteeship (*kinopu*) of communal land and reefs was entrusted to the chief. Today, descendants of these three lineages share tenure rights to the three aforementioned entitlement spheres through their apical Taghosaghe bond in addition to the other tribal affiliations that constitute the larger polity of Kalikoqu. However, myriad plots of land remain under the jealous control of smaller groups in each chiefly district because land entitlements have been progressively carved out from the general entitlement pool through the discussed processes.²² The sea, in contrast, remains a common good shared and exploited by all members of the large sociopolitical enclaves.

On a larger scale, this process is illustrated by the diminished role of the "bush" and "salt-water," or "coastal" dichotomy in the Roviana Lagoon, designations that have not held preeminence in the region since the beginning of the century. "Bush people" are those whose historical roots tie them to the island's interior, whereas "salt-water people" are those associated with the coastal zones. This differentiation is, in part, inconspicuous in contemporary Roviana. With the successive movement of inland groups into the Roviana Lagoon, commencing some 13 generations ago and lasting well into the 1920s, a certain degree of homogenization occurred as inland groups settled in the coast and intermarried with sparsely populated coastal groups. Notwithstanding that the "bush" and "salt-water" lexicon still remains in the daily discourse of Roviana, particularly in the context of land and sea disputes, the great majority of lagoon inhabitants are both. Therefore, it is difficult to use these reified distinctions to set oneself apart from others. This homogenization process, as previously mentioned, does not entail the loss of localized tenure rights, but creates a situation in which individuals can associate themselves with the predominant lineages, whether bush or coastal, through various kin ties, depending on the impinging social and/or economic context and their concomitant social validation (Aswani, 1997b).

The amalgamation of coastal and bush tribal identities is an essential process for understanding the development of sea tenure rights in the region. The union of entitlement spheres between bush and coastal polities— in which former bush groups now share rights in the barrier islands

²²Land also was acquired by other means including its granting by chiefs to warriors for their prowess in battle.

and reefs, and in which former coastal groups now share rights in the forested interior and littoral mangroves and estuaries—have rendered tenure to the ocean, particularly within the lagoon waters, an entitlement crossroads, a nexus in the larger commons. Entitlement to the ocean is extremely fluid because jurisdiction remains as a “commons” in the hands of chiefs and elders, and reefs are not privatized by the outlined indigenous mechanisms that disjoin garden and plantation property from the larger commons. Principles of bilateral kinship and cumulative filiation allow individuals easier access to numerous sea estates than to their genealogically entitled land areas that are jealously guarded by their own kinsmen or are eternally contested.

Movement of people in the last centuries has allowed some groups to settle in areas where they are the sole holders of the land and contiguous reefs. For other groups, particularly coastal-reef-owning groups, intermarriage with inland groups and resettlement away from their marine holdings has resulted in a mosaic of entitlement and claims across the Roviana and Vonavona seascape. The following sections illustrate the sea tenure models of territorial-enclosed entitlement, mosaic-entitlement, and transitory-estates to show how the outlined processes have resulted in organizational and managerial differences between models.

The Territorial-Enclosed Entitlement Sea Tenure Model

The territorial-enclosed entitlement model of sea tenure (Fig. 3) presents a situation in which territorial boundaries are circumscribed, jurisdictional power over territorial matters is centralized, and sea entitlements are regionally recognized. This model consists of various tribal groups dispersed in several villages under the administrative umbrella of one authority. Members within the polity jointly use and manage common-property marine resources. Territorial perimeters are well defined, and participants in the commons conceptualize their tenure rights as inalienable. Entitlement enclosure results, as previously argued, from cumulative intermarriage and subsequent pooling of entitlement rights. This relates back to the outlined historical settlement processes that lead to the nucleation of entitlement holders in inner lagoon. In Roviana two such areas fit this model, Kalikoqu and Saikile, whereas in Vonavona only the eastern side of the lagoon approximates this pattern. Kalikoqu and Saikile, constituting polities, have relinquished a portion of their localized territorial control to passages, reefs, other marine habitats, and have vested each of their respective chiefs (*bangara*) with jurial authority. To understand this model, it is

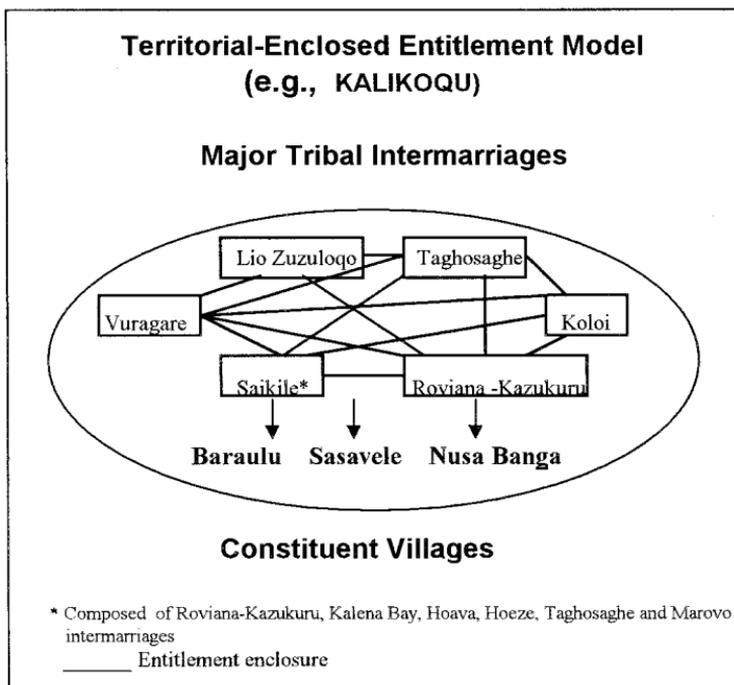


Fig. 3. Territorial-enclosed entitlement model of sea tenure (modified from Aswani, 1997b).

necessary to understand the inception and centralization of chiefly authority (Aswani, 1997b).

Six critical processes bestow chiefs with custodianship of land and sea territories. First, pre-European contact population movements and transformation of the Roviana polity conferred chiefs with great authority over land and sea, as illustrated previously. Second, chiefs' multiple cognatic filial links accrued over many generations of intermarriage with each landowning group in the major polities have magnified chiefly authority over traditional territories. If, for instance, a chief is linked to various descent groups but attached (*soto*) to Taghosaghe tribal members five times across his descent line, the accrued filial links to Taghosaghe, particularly links to prominent ancestors, will allow the chief to exercise great control over the Taghosaghe territorial holdings. Third, chiefs can have direct "ownership" of reefs within the larger pool of common entitlements, as is the case with the Kolo Lavata reef of Saikile. Fourth, in recent decades, major court decisions have awarded chiefly lineages legal entitlement to timber rights within communal tribal land in each of the chiefly districts, hence empowering chiefs beyond their traditional role as caretakers. The government's legal

empowerment has been extended *de facto* to sea tenure, particularly in Saikile where the chief and the chief's committee have appropriated all tenural rights to sea space. Fifth, the CFC church's stress on unity affords chiefs control over its members in matters of resource management. Finally, the effectual division of people between land and sea spheres and their associated managerial strategies grant chiefs jural trusteeship (*kinopu*) of sea space. It should be noted that whereas chiefs have a high measure of authority over the ocean commons, waters proximate to each village are still cosupervised by local leaders (*palabatu*). If a fisherman wants to fish or dive for income at a given spot outside his village, whether he is consanguinially entitled to access the area or not, he is customarily required to ask or inform the local headman. Large-scale commercial activities, however, require the authorization of the polity's chief and elders.

Kalikoqu and Saikile fishers frequently say that chiefs "own" or "possess" (*taqo*) the reefs. Most people, however, are cognizant that chiefs do not own the sea *per se*, but particularly among younger people, the concepts of trusteeship (*kinopu*) and ownership (*tinaqo*) are commonly misconstrued. For elders, past intratribal boundaries and their associated localized rights are still binding. The role of the chief, they contend, is to "keep" the *butubutu* and not to appropriate each descent group's jurisdictional autonomy over land and sea estates (*pepeso*). In addition they argue that statutory access for all polity members does not equate with corresponding entitlement rights. By virtue of their filial association to apical ancestors, some individuals have entitlement preeminence over others, and thus can categorically impose weaker proprietors' user and/or access restrictions. In recent years, dissension against chiefly control over territorial waters, particularly in Saikile, has resulted from counterhegemonic attempts by chiefs' closely related kin to oppose their authority.

Unlike their elders, younger fishers view all territorial waters within their chiefly district and even beyond as a "public" good supervised and legislated exclusively by chiefs. This creates some regulatory problems within and beyond each polity. Within a polity, difficulties in regulating the fishery relate to a dialectical process between fishers and traditional authorities. Fishers await chiefly regulatory measures before restraining their harvest practices, whereas chiefs, with some exceptions (see below), see no urgency in establishing regulatory measures that could encumber their constituent members. Beyond their estates, younger fishers are increasingly exploiting adjacent territorial seas. Interloping generally is acceptable under two circumstances: when a fisher can invoke kin relations to the visited area's proprietors, or when there are prior customary agreements between the fisher's group and that of the visited territory.

When outsiders visit another territory for commercial purposes, rules are not as lax, and the visitors, even if kin related, are encouraged to ask chiefly permission.²³

Recent heightening of commercial demand for marine products has led many younger fishers to proclaim that a shared Roviana ancestry licenses them to fish and dive anywhere. The use of a "kinship rationale" to access numerous estates for commercial exploitation, although common, has not yet led to rampant breaching of customary law. This tolerance relates back to the concept of "tolerated theft" (Blurton Jones, 1987). Perceived resource surplus, particularly in the case of finfish and its subsistence or even small-scale commercial capture, leads chiefs to regard the protection of resources as marginal because they find that the social, economic, and political costs of defending them from group members, or even outsiders, are too great. For instance, Saikile is known for its rich fishing grounds, and no serious marine resource shortage has taken place in recorded history. Kalikoqu fishers from Baraulu Village are increasingly encroaching on Saikile waters because their own fishing grounds are becoming resource poor. Saikile authorities and members tolerate the incursions of Baraulu fishers and their lack of reciprocity because many Baraulu fishers have rights at Saikile, and also because it would be too costly socially and economically to defend resources that are not yet perceived as scarce and valuable.

This situation, however, changes when resources become economically valuable and perceived as scarce. After the departure of a logging company operating in Saikile in 1994, local economic opportunities suddenly disappeared, forcing local communities to intensify shell-diving activities to access cash. The greater reliance on a shell called *bangapodu* (*Nassarius camelus*)²⁴ has led local authorities and participating divers to develop control strategies against interlopers. People from other villages including Baraulu are now finding it harder to access reefs that in the past were open to them for subsistence and small-scale commercial activities. This example raises the significant issue of whether indigenous tenure systems flourish or decay as they are pervaded by the market economy. The Saikile example suggests that when sea entitlement holders are nucleated, political authority over estates is centralized, territorial boundaries are clearly demarcated, and control strategies can be implemented, then exogenous influences can actually strengthen sea tenure regimes.

The territorial-enclosed entitlement model's centralization of chiefly

²³In Kalikoqu, permission is required to net commercially and to collect fish for the Asian live fish trade. But there are no restrictions on commercial diving and angling for local markets. In Saikile, shell diving requires chiefly permission.

²⁴This shell is sold to buyers in Roviana and Honiara who in turn sell them to the Tolai of New Britain, Papua New Guinea, for their use as a traditional currency.

power in concert with the localized administrative patterns of each village can, notwithstanding the mentioned regulatory problems, offer a viable framework for establishing effective regulatory measures. Traditional authorities in Kalikoqu and Saikile have staved off large-scale development and, to some extent, have imposed regulatory measures including gear restrictions (e.g. dynamite fishing) and temporal closures of certain reefs and shell beds. A note of caution should be raised, however. If past historical processes are a foresight, it is conceivable that the large polities of Kalikoqu and Saikile eventually will splinter into autonomous districts, as did the past schisms of the Nusa Roviana chiefly polity. Such splintering would create a problematic situation because the control strategies afforded by the territorial-enclosed model become more difficult to institute when competing polities do not recognize each other's enclosure of the commons, and when traditional authorities are unable to legitimize their territorial claims over highly disputed areas.

The Mosaic-Entitlement Model of Sea Tenure

The mosaic-entitlement model of sea tenure poses a condition in which territorial boundaries are disputed, authority over estates is decentralized and contested, and entitlements are regionally scattered across several polities. Participants in this sea tenure model conceptualize their entitlements as incorporating other regional claimants' subsistence usufructory rights, but assert exclusive custodianship over their sea space (Fig. 4). This model occurs in Nusa Roviana, in the Munda area, and in western Vonavona settlements (see transitory-estates model). Tenure to a reef complex named Vuragare stretching northward from Nusa Roviana to Patu Parao near Ghizo Island has, over the past century, been carved into an entitlement mosaic by bordering villages and dispersed communities. The Nusa Roviana and Munda area villages of Dunde, Kekehe, Lodu Maho, and Kindu unambiguously demarcate their territorial boundaries and jurisdictional control over waters projecting seaward from their villages across the barrier reefs to include sections of the Vuragare reef.

Other Vuragare reef-owning descendants living at Kalikoqu, Saikile, Parara, and Rendova, and some at Nusa Roviana,²⁵ however, do not recognize claims to Vuragare reefs within each of these districts and counterclaim user and sovereignty rights over them. This situation relates back to the historical settlement processes that led to the dispersion of sea entitlement

²⁵Many of the village inhabitants are Vuragare descendants who have allied themselves with Kalikoqu.

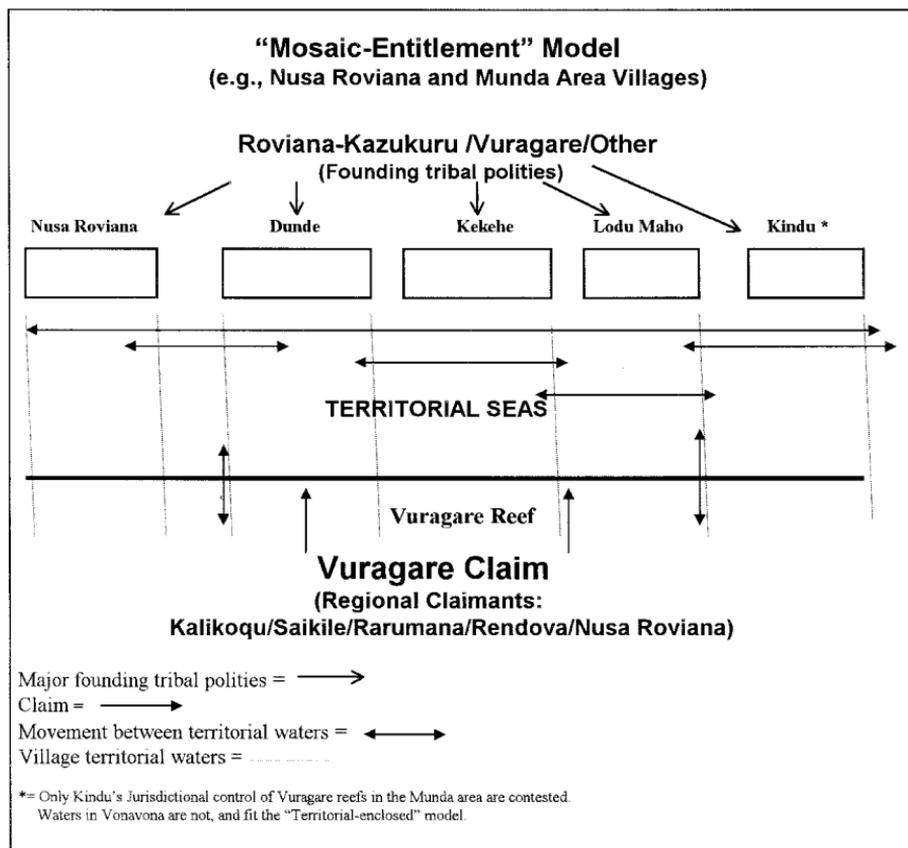


Fig. 4. Mosaic-entitlement model of sea tenure (modified from Aswani, 1997b).

holders throughout the region. Tenurial uncertainty engendered by increasing jurisdictional demands of surrounding communities renders this model of sea tenure very unstable, particularly as developmental pressures in the area increase.

Vuragare tribe descendants presently residing throughout southwestern New Georgia and Rendova have been absorbed into the larger regional polities. The Vuragare tribal appellation has been partially subsumed in favor of other neologisms such as Kalikoqu and Dundee, in part because Vuragare descendants are of mixed “bush” ancestry. Ethnic coalescence, however, does not entail ceding ancestral rights. Within this entitlement mosaic, cumulative genealogical links to apical Vuragare ancestors vary among descendants. Various kin-based groups scattered around the region, particularly those of chiefly descent, can claim entitlement preeminence

over others by virtue of their cumulative Vuragare links. Dispersion of entitlement rights has created a complex and volatile situation in the region. Two dominant opposing views have developed since the early 1970s: (a) the emphatic claim over all Vuragare holdings made by Kalikoqu, Saikile, Parara (mostly in Rarumana), Rendova, and some Nusa Roviana Vuragare descendants, and (b) the assertion of statutory entitlement to the reefs by the inhabitants of the Nusa Roviana, Munda, and some Vonavona villages.

Vuragare descendants, spearheaded by Kalikoqu, argue that most people living in Munda and Vonavona have only usufructory rights to exploit the Vuragare reefs and cannot claim permanent control over reefs reckoned as Vuragare holdings. To show their resolve in reclaiming control of the Vuragare reefs, Vuragare descendants have established the Vuragare Tribe Chiefs' Committee and the Vuragare Tribal Association, asking Vuragare descendants living throughout the region to join. A chief of Vuragare was appointed symbolically in the early 1990s to assert Vuragare autonomy. The association's objective is not to disaffect Munda area fishers from using the reefs, but to ensure that any benefits reaped from economic development in the area will be distributed evenly among all Vuragare descendants, regardless of their area of residence.²⁶ The association maintains that although many Munda area inhabitants are themselves Vuragare descendants, their genealogical links are not as cogent as those of the committee's senior men. Therefore, they may participate in the association but not claim control over the reefs. Association members believe that Munda area non-Vuragare and dissenting Vuragare lineages want to do away with the Vuragare designation to claim local hegemony over the reefs and keep all present and future revenues.

On the other hand, Munda area communities view the steps taken by Kalikoqu and other self-proclaimed Vuragare groups at Rendova and Parara as a fraudulent and dangerous attempt to misappropriate "what does not belong to them." To Munda inhabitants, regardless of kin origin or location of residence, the disputed reefs are inalienable. The contested reefs, they believe, have long been under their jurisdiction due to direct rights acquisition via their intermarriage with Vuragare tribe members and through prior agreements with Vuragare chiefs. Munda area elders maintain that Vuragare descendants living elsewhere are, in essence, trying to reestablish jurisdictional control over the tribes' ancient holdings for "greed only."

Volatility in this sea tenure model occurs at two levels: minor disputes for petty commodities and major regional conflicts catapulted by the intro-

²⁶Currently, Taiyo, an industrial fisheries conglomerate associated in a joint venture with the Solomon Island government since the early 1970s, pays royalties for the use of bait-fishing grounds. In addition, "diving fees" are paid by some of the hotels in the area. The prospect of tourist development in the area further instigates conflict.

duction of large development schemes. First, conflict arises when various tribal groups interlope into the territorial seas of others. These disputes generally do not entail subsistence fishing because customary and church beliefs encourage sharing, but the commercial use of resources. In the Munda area, dwindling trochus and bêche-de-mer stocks have heightened community verbal disputes. Boundary transgressions in Munda are intrinsic between local communities, and extrinsic to Rendova and Kalikoqu divers. Divers from Nusa Roviana, Dundu, Kekehe, Lodu Maho, and Kindu encroach on each other's territories either because they have cross-boundary kin relations or can claim descent from the Vuragare tribe (Fig. 4). The former is an acceptable rationale for interloping; the latter is not. Recognizing the Vuragare claim as a rationale for moving between local territories would, in substance, validate the Vuragare Tribal Association's claims. To elders, it is Munda area Roviana-Kazukuru genealogical affinity that warrants access to each other's estates. Recourse to the Vuragare kinship rationale by Kalikoqu and predominantly Rendova commercial divers to transgress customary boundaries is even a more, albeit unresolved, contentious issue.

The second, and perhaps more destabilizing, tribal dispute eventuates from the introduction of large exogenous development schemes. An ongoing dispute concerning installment distribution has developed between Munda area hamlets and the Vuragare Tribal Association since the early 1970s establishment of an industrial bait-fishing operation in Munda to support a nascent tuna fishery in the Solomon Islands. The hamlets assert their exclusive tenure of bait-fishing grounds and view Vuragare claims as illegitimate, whereas the Association demands control of the operation's cash proceeds. The Vuragare Tribal Association has cleverly split Munda communities by inviting their Vuragare members to defy local alliances and join the association. Consequently, Vuragare descendants in Munda have been caught in a dilemma: accruing economic benefits versus challenging their Munda kinsmen. A nonconfrontational resolution has been attained between the Association and Munda area elders, although discontent is evident in both camps because no single community has been able to appropriate the entire profits.

In general, tribal leaders in the Munda area have failed to sanction interlopers and forestall internal abuses because of the erosion of chiefly authority²⁷ nourished by continuous political and internal territorial strife, and the tenural uncertainty engendered by Vuragare territorial expan-

²⁷ Currently, several Munda area communities (e.g., Dundu) do not recognize their appointed chiefs and are controlled by a council of elders. Conflict also originates from an old dispute over timber rights.

sionism. In Munda and Nusa Roviana, various developmental pressures over the decades have resulted in an increased reliance on cash forecasting as in the Saikile case, the development of control strategies in response to greater dependency on marine products. The opposite has occurred. Notwithstanding people's sustained tenure claims, they are *de facto* pursuing an open-access regime. The serious implication here is that if entitlement holders are geographically dispersed, political authority over estates is decentralized or contested, boundaries are porous, control strategies are difficult to implement, and sea tenure regimes actually can decay.

The Transitory-Estates Model of Sea Tenure

The transitory-estates model delineates organizational elements of the territorial-enclosed and the mosaic-entitlement models of sea tenure. Roughly, western Vonavona Lagoon fits the mosaic model, whereas eastern Vonavona conforms to the territorial-enclosed model of sea entitlements. Vonavona can be conceptualized as a transitory model because jurisdiction to sea space is being conveyed and renegotiated as eastern and western polities continue to intermarry, changing the flow of entitlements and claims (Fig. 5).²⁸ The eastern sector of Vonavona, comprising the greater number of inner lagoon islands and the waters contiguous to Kohinggo Island, is under the jural control of the Chief of Kindu in a fashion similar to the larger polities of Saikile and Kalikoqu. The western side of the lagoon, composed of Parara Island and some inner lagoon and barrier reef islands, is controlled by individual chiefly villages as in the Munda area. Western Vonavona is subject to a mosaic of claims, including the Vuragare outer reef claims to Parara Island, the Kekehe and Munda area claim to numerous islands in the Munda Bar and southern Parara areas, the Rarumana-Vuragare claim to Parara barrier reefs, the Kindu-Barasipo claim to northwestern Parara, the Kalikoqu chiefly claims to Buni in central Parara, and the claim of the Kolobangara people to north Parara reefs, among others. Kindu's entitlement to eastern Vonavona, in turn, is not contested.

Territorial asymmetries between Vonavona and the Roviana Lagoons result from distinct settlement histories. People have occupied Vonavona intermittently for hundreds, if not thousands, of years, but the current political configurations, particularly in western Vonavona, and the establishment of jural control over land and sea emerge from the precursory hundred years of colonial history. Kindu's control over eastern Vonavona is perhaps

²⁸ Contemporary intermarriages between Kalikoqu, Saikile, and Munda area communities have not yet had the same jurisdictional effect as in the smaller Vonavona Lagoon.

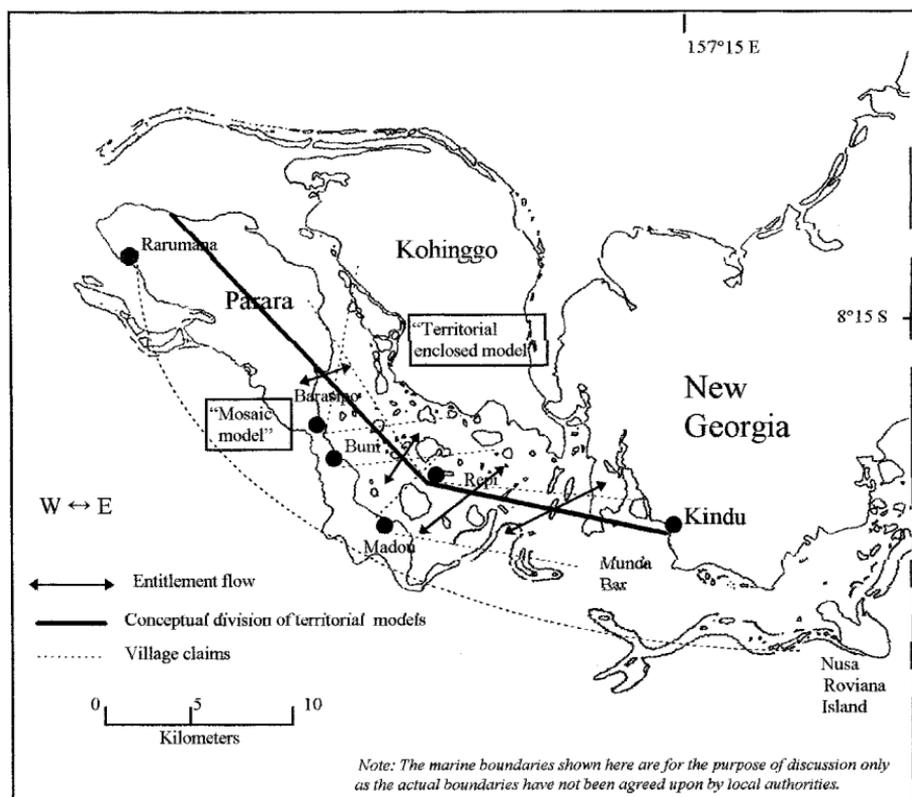


Fig. 5. Transitory-estates model of sea tenure.

older and, in part, jurisdictionally similar to Kalikoqu and Saikile. The distinguishing element is that although Kindu still holds title to numerous islands within the Vonavona Lagoon, it exercises only sporadic jural control over reefs, and instead delegates individual villages in the eastern lagoon to control all Kindu holdings. The western lagoon is divided into different jurisdictions centered along individual village lines including Madou, Buni, Barasipo, and Rarumana.

People in Vonavona attest their affinity with the rest of Roviana through their Roviana-Kazukuru tribal descent—notionally tantamount to a pan-Roviana “singularity.” This pan-Roviana awareness evinces in people acquiescence toward cross-boundary interloping. Permissibility, however, does not entail a total lack of territorial divisions because villages nominally control access to their adjacent waters. Intrusions are noticed readily, although people are often, but not always, reluctant to evict friends or likely

relatives found fishing outside their villages. As a general rule, older men and women tend to stay in their own jurisdictional waters to avoid needless embarrassment. This apparent harmony is deceptive, however, because many young fishers transit throughout all territories during commercial forays without asking any kind of permission.

Galvanized by dwindling resources, particularly commercial species such as trochus, green snail, and *bêche-de-mer*, some people throughout Vonavona have called for access limitations to fishers from neighboring villages. Elders, particularly those in western Vonavona, who stress the historical singularity of all Roviana inhabitants, reject this idea and continue to sanction a *de facto* open-access regime for all Roviana descendants. This permissiveness most likely reflects the inability of chiefs to control boundary transgression rather than their altruism. Unlike Saikile and Kalikoqu, where centralized power and jurisdictionally secure territorial entitlement has allowed chiefs to impose effective managerial measures when faced by developmental pressures, western Vonavona chiefs and elders lack the customary authority to impose such restrictions. Such powerlessness has resulted from political dissension and from tenurial uncertainty engendered by increasing claims and counterclaims.

The eastern Vonavona case is similar, except that chiefly centrality in Kindu and uncontested entitlement²⁹ has allowed, to some extent, the imposition of use and access restrictions, especially to *bêche-de-mer* grounds. Ethnic homogeneity and a transient settlement history in the area, particularly in western Vonavona, have resulted in jurisdictionally incipient sea tenure rules. Albeit people are becoming increasingly aware of interlopers and their concomitant resource abuse.

It is conceivable that further intermarriages between eastern and western Vonavona hamlets will lead to the fusion of inner lagoon polities and to the formation of large territorially enclosed chiefly districts such as those of Kalikoqu and Saikile. Another possibility, is that increased fishery commercialization will result in the radicalization of territoriality, thus strengthening village-centered territories. A final prospect is a total collapse of the system, resulting from sustained boundary transgression and disputes, and the establishment of a *de facto* open-access regime. The transformation and transitory conjuncture of the two sea territorial modes, the mosaic in western Vonavona and the territorial-enclosed in the eastern sector, is engendering an uncertain tenurial outcome for Vonavona hamlets as the flow of entitlements continues to muddle.

²⁹ Kindu's hegemony over eastern Vonavona is not contested. But the Vuragare Tribal Association disputes its Munda Bar holdings.

CONCLUSION

In this article, it is shown that the contemporary transformation of Roviana and Vonavona sea tenure are animated by a complex set of autochthonous processes as well as exogenous agency. Such forces give rise to different sea tenure configurations encompassing different outcomes and repercussions. The outlined three processes of (a) regional settlement patterns, (b) localized processes of political expansion and contraction, and (c) dynamic kinship and tenure principles are the underpinning historical and sociocultural axioms engendering sea tenure asymmetries in a region that today is ethnically, linguistically, and culturally homogeneous. Each outlined sea tenure model delineates the social tenets that determine the feasibility of common property institutions instituting control strategies as a response to fishery commercialization. More profoundly, the models reject the view that open-access commons emerge only from the breakdown of local institutions caused by government imposition of an open-access regime and a market economy. In addition, they reject the notion that the only possible venue for sea tenure institutions faced with an encroaching market economy are decay and an eventuating open-access commons.

The examples show that the participation Roviana and Vonavona Lagoon dwellers in global economic networks does not entail a linear process of domination by foreign practices, but rather a dialectical process in where things foreign are recontextualized within the indigenous social economy. In this fashion, asymmetries between the common property regimes outlined in this article, engendered from diverse endogenous and exogenous processes, give rise to different organizational and managerial responses.

The policy implications of this discussion are significant. Roviana and Vonavona Lagoon dwellers are no doubt increasingly entangled in global economic networks in ways that surpass the past 200 years of foreign interactions. The case study suggests that intensification of maritime commercial activities against an indigenously animated backdrop can fundamentally alter the structure of sea tenure institutions. If commercialization expands under conditions wherein entitlement holders are nucleated, boundaries are regionally recognized, and jural control of estates is centralized, indigenous peoples can, to a certain extent, strengthen their sea tenure regimes by effectively instituting and enforcing managerial measures. However, where entitlement holders are dispersed, boundaries are porous and contested, and when traditional authority erodes nurtured by political dissension and tenurial uncertainty, indigenous peoples have serious difficulties in constituting and enforcing control strategies to subvert free riding. In this situation, sea tenure progresses towards a *de facto* open-access

commons. This case study ultimately suggests that recognizing forms of sea tenure and their multiple managerial, economic, ecological, political, and social outcomes is an essential prerequisite to understanding the modern role of Pacific Island indigenous sea tenure in fisheries management.

ACKNOWLEDGMENTS

I am grateful to the people of Baraulu and Roviana and Vonavona Lagoons in general for allowing me to live among them and share their daily experiences for all these years. I also want to thank the National and Provincial Governments and the Roviana Lagoon Area Council for their support. This research was funded by the National Science Foundation (SBR-9320498) and Sea Grant, University of Hawaii (R/MA1 and NA36RG0507). Additional financial and logistical support was provided by the WWF-Pacific, ICLARM, and SIDT. Subsequent support for this work was granted by the Mardsen Foundation, the National Geographic Society, and the University of Auckland through the New Georgia Archaeological Survey project (NGAS) headed by Peter Sheppard, University of Auckland.

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