Full version published in Palmer, L. 2015 *Water Politics and Spiritual Ecology: Custom, environmental governance and development*, Routledge, London and New York.

Chapter 6: Water Relations: the embodied politics of ritual and irrigated rice production

Across the Baucau Viqueque zone, spring water is critical to the way that people relate to one another and their ancestors. This chapter traces the importance of spring water and associated spirit ecologies to the production of wet-rice and examines the complex political fluidities and continuities in local livelihood practices across time and space. To do this it analyses the foundational moral economy and variously embodied beings under whose auspices irrigated rice production is enabled and local water politics play out.

While most of the anthropological work on agrarian practices in Timor-Leste has focused on swidden agriculture, wet-rice is also crop that has been long produced in the favourable agro-ecological niches of this particular zone. The timeline of the introduction and spread of rice agriculture across Timor has not been determined (but see chapter 3 and also Oliveria 2006), nor have there been any studies of the history of indigenous irrigation practices. A few minor mentions in early twentieth century colonial era sources and a late colonial era study by Metzner (1977) provide only fragmentary evidence about the history and trajectory of indigenous irrigation in the region.

In a paper first published in 1949 [1977] the Dutch anthropologist Onvlee described the customary system of rice irrigation and ritual in an area of Sumba, an island to the immediate west of Timor (see Map 1.3). He noted that in this region of Mangili there were ancient rice paddies and water channels whose management was encompassed in a ritual built around the metaphor of wife-giver and wife-taker relations (or 'fertility-giver' and 'fertility-taker' relations). These irrigation channels were divided into male and female conduits which at two points crossed each other's path. At one of these points a hollow wooden log served as an aqueduct for the female water to channel through. Periodically this log needed to be replaced, necessitating a pilgrimage of the clan houses associated with the rice fields to the forest of a neighbouring wife-giver group. In this forest they would retrieve a suitable 'bride log'. Onvlee writes '[a]quiring this wooden bride thus activates the traffic between two groups whose relationship is significant to the whole society' (1977:155). Symbolising and activating actual marriage relations this

resource and gift exchange ritual also enabled the water to flow down male channels to fertilise the female land of the rice fields below. According to Onvlee this ancient system reproduced not just marriage relations but also 'reflections and manifestations of the interdependencies of cosmic forces which make all life possible—the very forces which give this human activity its background and meaning' (1977: 160). When he wrote this piece in 1949 the system was threatened by the construction of a modern dam in the area. While Onvlee remarked that this might auger well in some respects for economic development, he worried that this would 'also augur the dissolution of a way of life' [which would] 'force us to ask: What other bedrock can this culture now build on? Into what shall it root?' (1977: 163).

While I do not know the answers to these questions in the context of the Mangili Dam in Sumba, the questions are pertinent to the status of similar ways of life linked to practices of irrigated rice production in the Baucau Viqueque zone. As noted in other 'resource' contexts across Timor Leste (see McWilliam & Traube 2011; Palmer & Carvalho 2008; McWilliam 2005; Ospina & Hohe 2001; Carvalho 2011) in the post-independence era a 'renaissance' is occurring in the region in relation to a range of ritual economy and resource regulatory practices, including water sharing and blessing rituals (see also Figure 6.1). Continuing a close reading of the socio-cosmological significance of water, this chapter turns its attention to both the everyday practices and the ritual politics associated with irrigated rice and assesses the past and present challenges facing this mode of production. Tracing the ways in which this suite of rituals evolved as a way for local populations to communicate to themselves about themselves and their relationship to their environment (Rappaport 1999), irrigated rice production practices and their associated ritual politics are shown to be simultaneously ways of encoding and communicating core moral values and of the mediating and negotiating the changing relations which embody them.

<INSERT FIGURE 6.1 HERE>

Aside from the few with the luxury of a public service job and salary, their own business or employment in the Catholic diocese, most of the population of Baucau town and surrounds continue to be semi-subsistence farmers. Focusing in the latter part of the chapter on irrigated

rice production in Baucau's marine terraces, I explore the range of complex socio-ecological variables which impact on the agricultural use and management of water resources in this particular karstic zone (cf. Urich 1989). I argue that even in this urban environment the spiritual ecologies associated with diverse practices of irrigated rice production remain relevant, and demonstrate that along with its agro-ecological salience, it is because of the deeply embodied religious connection between water and all beings that such practices remain to varying degrees extant.

The mixed agricultural economy

While traditional wet-rice production is confined to areas with appropriate agro-ecological conditions across the Baucau Viqueque zone (Metzner 1977), it is integral to the regional subsistence economy and is mixed in with numerous other crops such as maize and tubers and practices of hunting, foraging and fishing (see also Blust 1976; Ormeling 1955; Pannell 2011)[1]. Inter-regional trade and marital exchanges meant historically that the products of this polymorphous economy were in constant state of flow from place to place (Forman 1978). Products such as rice, maize, beeswax candles, woven cloth (*tais*) and palm fibers were important to both indigenous and colonial systems of tribute, exchange and power relations.

Depending on the ecological niche(s) the seasonal livelihood calendar in the Baucau Viqueque zone has traditionally included: successive periods of land clearing and burning followed by the planting and harvest of crops in dry land fields (*toos*); preparation, planting and harvest of irrigated rice and other crops; grazing of livestock; hunting of wild animals such as birds, civet cat, boar and deer; tending to 'plantations' of areca nuts, a variety of palms (for coconut and palm wine harvest and building materials), fruit trees and climbing vines; harvest of forest products including timber, 'wild' root vegetables, bamboo, fruits, and honey; freshwater and intertidal zone fish trapping and marine foraging; and, in some coastal areas, salt production (see Figure 6.2).[2] Both women and men participate to varying degrees in all of these activities[3], which in the past were all 'traditionally' enabled and religiously sanctioned through individual or collective recourse to localized agricultural rituals (Friedberg 1989; Forman 1981; McWilliam

2002; see chapter 6). Under Portuguese rule (1540-1975) there was also extensive inland deforestation of sandalwood, teak and other hardwoods and establishment of coffee, coconut and other plantations. The Portuguese also actively encouraged the increased production of maize, irrigated rice and other vegetables such as cassava, sweet potato, pumpkin and peanut (Shepherd 2013).

<INSERT FIGURE 6.2 HERE>

Local rice farmers from across the Baucau Viqueque zone state that irrigated rice pre-dates the arrival of Portuguese into their region. Across the zone I have been told stories of the first irrigated rice crops which emerged from the ground after two siblings prepared the *natar* (irrigated fields). In these stories, most commonly an old brother ties up his younger sibling and drags him around in the mud until rice emerges from the earth (suggesting that crop germination is dependent on the interaction between the (male) body and the (female) land. Cf. Lazarowitz 1980; Forman 1980, 1981). The first swidden maize fields were prepared in a similar manner (cf. Barnes 2013). It is perhaps because of this that maize and rice are said to be related to each other in an older sister-younger sister (*bin-alin*) relationship, a relationship in which the progenitors are human beings.[4]

As we find in the creation stories of many agricultural communities in the region, in the remote south coast village of Irabi (M: sacred water) in Watu Carabao, Viqueque the creation of the origin community and ruling house is linked to ancestral sacra emerging from the spring (see Map 2.1). According to the spring custodian, Armindo da Silva, in the distant past a woman of this house entered the underground world hidden beneath the spring and married with its crocodile king. The pair had two sons who continue to live in the spring, one who transformed into a fish and the other into a crocodile. As a result of the power of this spring and its associated sacra, waters from Irabi were carried across the region enabling marriage and creating the right to rule in other communities (these stories stretch as far away as Laga on the north coast). At some point a son of Luca, from the south coast sub-kingdom of We Soru (Vessoru), arrived in Irabi and married a daughter of the spring's custodian creating a long term ritual and political

alliance between Irabi and We Soru. While the area is home to both Makasae and Naueti speakers, Makasae is used in the ritual language associated with the spring, suggesting that Makasae has a longer presence in the region[5].

Another story relating to this spring tells of the time when it began gushing forth buffalo (cf. Hicks forthcoming). While the population feared this would create catastrophic flooding eventually a large male buffalo emerged and its body blocked the exit path. These buffalo became a central part of the ancestral inheritance of the people of Irabi[6] and a critical enabler of the wet-rice production associated with the spring. As with other areas in the zone, irrigated rice production is said to precede the Portuguese presence and some indigenous wet-rice varieties, such as a red rice known as '*fuu ga*', are still planted there. The waters from the Irabi spring and the river into which it runs are shared by local rice farmers through a traditional process known as *fiar malu* (trusting in each other/respect). In more recent times, demographic changes and the in-migration of Makasae and Naueti speakers from the surrounding areas has also led to the need for a 'water controller' (M: *ira kabu*) to oversee the process of water distribution between fields.

Farmers carry out sacrificial offerings each rice growing season to the custodians of the spring water. The yield from each harvest determines the type and quantity of animals sacrificed. A highly successful harvest requires the sacrifice of a four animals (a chicken, a dog, a pig and a buffalo) in a ritual known in Makasae as '*diki*'[7]. After the annual rice harvest, the arrival of the monsoon signals the time to plant other crops such as maize, potatoes, cassava and yam (*kumbili*).

The springs of Loi Hunu

North-west of Irabi at the southern base of the Mundo Perdido range is the village of Loi Hunu where the creation narratives of local springs are also linked to the development of irrigated rice production (see Map 2.1). A past Liurai of Loi Hunu, Fransisco da Costa Guterres relayed the following story to me:

> One day an old man called Loi Hunu and his dog called Bui Lua were roaming the forest uplands where the man had been tending to his swidden. He and his dog entered a cave looking for bats to hunt and eat. The old man managed to kill many bats and filled his bag. But his return out of the cave was then blocked by a sudden flow of water. During the next seven days he could not exit and he ate all of the bats and even his clothes. Then a python came along. The python said to the old man: 'Loi Hunu come with me and I will take you to the sea, I will take you out of here'. But a black eel came along and told Loi Hunu not to do this: 'It will eat you on the way,' the eel said of the python. With that the python continued on its way. Then a huge white eel came along and asked Loi Hunu to go with him. The black eel again warned against it, 'It will cast you off on the way' it said of the huge white eel. Then the black eel said 'If you get on my back I will take you back above ground'. They set off on a long journey. They found a small hole leading to the surface and Loi Hunu kicked at it, enough so that the eel's head could emerge. They gave this small hole in the ground the name Bui Lua (the name of Loi Hunu's dog). The man and his dog continued on down through the underground channels until they saw more light. The old man gave a big kick and the water poured forth onto the ground above.
>
> Given the length of time he had spent underground, Loi Hunu's family in the upland area presumed him to be dead and had already carried out his burial proceedings. Meanwhile in the place where he emerged from the ground, a woman from the nearby hamlet of Ira Daba had come to draw water. She saw the man and his dog and became scared. She ran home to tell her family. Prior to Loi Hunu's emergence at this spring, the waters had been only meagre, now it had become a large water source. The people of Ira Daba came and took Loi Hunu home with them. They fed him and gave him something to drink and he recounted his story.

In this story of Loihunu's underground travels, we can see much similarity with the Wai Lia story from Baucau encountered in chapter four. Eventually, a thriving rice growing community grew up around these springs which were known collectively as Loi Hunu. Each year this community would carry out rituals to give thanks to the ancestors of the spring. This spring

water flowed as well into the Viqueque river from where it flowed to irrigate larger rice fields. The rice farmers from these downstream areas would bring rice as offerings for the ceremonies carried out at Loi Hunu springs. In the mid twentieth century, the colonial authorities negotiated with the people of Loi Hunu for the right to pipe water from the smaller spring of Bui Lua to Viqueque town. Following this each dry season the Viqueque authorities would bring sacrificial animals to the Loi Hunu springs.

During the Indonesian occupation the sacred house by the main spring, which had been built in honour of the ancestor Loi Hunu, was burnt down. Also lost in this fire were the sacra, 'the plates and spoons', which were used to 'feed' and activate the power of the ancestral spirits of the spring. Despite this setback the community continued, as best as they were able, to make annual sacrifices at the spring. They requested that the Indonesian authorities in Viqueque pay an annual monetary contribution or '*sumbangam*'(I) to assist with the purchase of animals for these sacrifices. The authorities complied and they too would to attend the ceremony. However, during the turmoil of the independence vote in 1999 and the population upheavals that followed, these ceremonies ceased. By 2008, the water was seriously diminished in the springs and the village head of Loi Hunu decided to organise a ceremony to restore the water's flow. This was done and the water began, at least for a period, to flow again (see below).

In 2012, I interviewed another local elder Filomeno Da Camara, who had as a young boy been adopted by Dom Fransisco da Costa, a famous modernizing ruler of Ossu in the early twentieth century (see Shepherd & McWilliam 2014 for an account of this ruler). He explained that while his own and other local families still made the required offerings at the springs, others did not:

> Before everyone made offerings at their associated springs, but then the war and occupation began. Before when people made their offerings it was because they needed water for their rice fields, they believed in the power of their springs, rocks, trees, metal objects and other sacra. They would offer chickens, pigs and dogs to the spring. At Loi Hunu the names of the water custodians who first made these offerings were Gari Arvo

> and Leki Ruo. It was not [the uplanders from] Osso Rua that came to make these offerings at the springs, but Gari Arvo and Leki Ruo. Now Gari Arvo's descendents make the offerings and have the jurisdiction over Loi Hunu. However Osso Rua wants to dispute this and they say that it is part of their jurisdiction. But they are far away.

The story of the underground travels of an uplander to the springs of Loi Hunu is disputed by this local elder. He stresses that while these uplanders may now be claiming their rights in the area, these people from the neighbouring kingdom have never and do not now come to Loi Hunu to carry out these sacrifices:

> The springs here are not secure. People are fighting over them. Many people have now settled in this area. Legends from the past I don't believe, they tell them to try to take over the place. It was the government (in Indonesian times) who moved people to the roadside areas, now these people are stamping their feet and saying it's their land.
>
> I said to these people, 'people don't dig water from the land'. God gave this gift to the world. It's nature (*natureza*). It wasn't because someone kicked a hole in the ground. The old people just made up stories'[8].

Despite his skepticism toward the local spring creation narratives (particularly in the context of disputed post-independence land rights), Filomeno Da Camara does affirm the need for the local populace to make offerings to these springs whatever the challenges and obstacles:

> At Bui Lua they offer black chickens and black dogs. This was once done four times a year [after the first sowing and then harvest of both rice and maize]. However in the Portuguese times we had to pay too much tax and as a result we only were able to make offerings once a year. We paid all kinds of tax: head tax, livestock tax for buffalo and horses. Sometimes we had to work for free. We would only make our offerings in these circumstances prior to the time of harvesting rice. We would pray and call out the names

> of the ancestral places and rice fields so that the rice would grow well. But now these fields are abandoned. In the past we dug only earthen water channels and in the independence era these have been destroyed by landslides. Now people have moved in and built houses on areas formerly used to plant rice.

As we saw above, despite calling into question the authority of the creation stories associated with particular springs, Filomeno Da Camara makes it clear that this obligation to carry out sacrifices to the ancestors of these springs remains, whatever the difficulties, a crucial element of the right to control land and resources.

Each community will have their own particular customs and ritual practices for their respective springs (and these practices are, like narratives, often contested). Elsewhere in the Mundo Perdido region, some rituals processes entail the 'feeding' of local palm wine to the ancestral eels of the spring. This ensures the ritual cooling of their temperaments ('*fo matak malirin ba sira*') and encourages them to 'open' the flow of water to irrigation channels. Where it is the case that the associated rice fields are extensive these irrigation channels are overseen by water-controllers or *ira kabu*. The role of the *ira kabu* is also said to long precede the Portuguese presence in the area (see below section on irrigation co-operatives in Baucau).

While little has been written about indigenous irrigated rice production in Timor, early twentieth century Portuguese agricultural records are one source of information.[9] For instance in 1914, it was reported in the *Boletím de Comercio, Agricultura e Fomento da Provincia de Timor* (BCAeF) that the expansion of production in the traditional rice producing kingdoms Manatuto, Laleia and Baucau was proceeding apace, connected to a 1912 decree to coercively force the planting of rice, so that the 'import of this cereal may be dispensed with' (BCAeF 1914(7): 478). Production was to be increased through (coercive) attention to 'methods of cultivation, which have to be transformed through the dissemination of the plough', in particular where expanses of land 'are naturally or easily irrigable' and amenable to 'two harvests per year' (BCAeF 1914(7): 478).

There can also be gleaned in this reportage a least some colonial era recognition of a pre-existing indigenous culture of irrigated rice production. For example, it was reported in Baucau in 1914 that '[d]elaying sowing to greater or lesser degrees is a tactic that the *indigenas* use to coordinate with when there is more or less rain and less rats. There are less rats in June' (BCAeF 1914(7): 427). Yet, despite extant indigenous approaches to lessening these attacks by pests, it seems that rats were increasingly a problem for the colonizers. Hence, as well as their efforts to expand rice production, there is some discussion of the high cost of arsenic 'to combat rats' ((BCAeF 1914(7): 44-45, 1915(2): 220). Meanwhile a report from an infantry lieutenant in Baucau in July 1914 concluded that 'the maize harvest is abundant and the rice looks pretty good...but in the last few days the rats have destroyed quite a lot, with some fields unlikely to yield a single grain' (BCAeF 1914(4): 190).[10] In 1915 (2) the same infantry lieutenant reports that 'after so much effort on the part of individual plantation owners, the indigenes and the commanders, rice and coconut were relentlessly attacked… we can't get rid of these plagues'(BCAeF 1915(2): 220). While the causes of these plagues are not stated, they were clearly accompanied by an unprecedented intensification in the production of wet-rice in the northern coastal zones (including an increase from the traditional practice of one crop to two crops of wet-rice per year). Elsewhere in the archipelago, extant indigenous irrigation and rice cropping cycles have been reported to control and denying breeding habitats for pests (cf. Lansing 2007; Winarto 2011; Maat forthcoming; Iskander 2007: 129; Urich 1989). When these practices were replaced with modernizing irrigation and rice growing practices the damage caused by pests to these crops was unprecedented (Lansing 2007). We can only hypothesis that in early twentieth century Timor, the apparent increase in pest blighted crop production was somehow connected to the breakdown of extant local methods of irrigation and cropping cycles (see below).

While colonial irrigation interventions in the period also clearly built on extant indigenous irrigation channels (Correia 1944: 255, 261; Duarte 1930: 312.), the attendant indigenous belief systems regulating the use of these channels were ignored or suppressed. One report from the wet-rice zone of Manatuto noted the recalcitrance of indigenous ritual leaders who sought to

control or suppress the supply of water to a particular irrigation channel (and presumably particular fields).[11] The colonial response in this case was swift, circumventing the ritual intervention by rapidly expanding the extent of the irrigation system so as to 'ensure enough water for the cultivation of all the lands of Manatuto' (BCAeF 1915(2): 229-231). Rice cultivation, it was added would now be 'done properly since the use of the plough is gradually becoming a habit (literally 'entering their customs') of the indigenes' (BCAeF 1915(2): 229-231).

We now return to the north coastal zone of Baucau and examine what clues there are there to the history of the present day irrigated rice production.

Irrigated rice production in Baucau

In chapter three, we encountered stories telling of the arrival of irrigated rice and metalwork to Baucau's coastal area. In chapter two, we traced the journeys of ancestral eels moving through the landscape. In one case, these eels emerged from a spring and transformed themselves into people moving the entire spring from the slopes of Mundo Perdido to Wailili on the edge of the Baucau plateau. In another story from Wai Husu in Baucau town an ancestral eels dug underground channels from Luca to Baucau and emerged from the spring making irrigated rice production possible.

In the ritual poetry recounting these watery journeys the custodians of waters from the inland zones call out to the populations on the coast warning them: 'the controller of the water (M: '*ira kabu*' or W: '*kabu wai*') has descended, when you see him you must not kill him'. The regional hydrosocial cycle is underpinned by ancestral eels who journey from 'the other world' (in many cases said to be enabled by the ritual centre of Luca) and forge subterranean channels crisscrossing the landscape. In cases where these pathways have for some reason become closed, downstream rice growing communities know that they must send their ritual leaders inland to

negotiate with the custodians of these water resources and ask them and their *dai* (the eels) to re-open the waters. In this sense these ancestral eels, which are synonymous as well with *talibere*, are the original '*kabu bee*' (or water controllers).

The development of irrigation channels and new rice terraces

In contrast to these underground journeys of ancestral eels, the above ground irrigation channels now leading from Baucau's Wai Lia spring to the coastal rice fields of Bahu, Caibada, Tirilolo and Buruma are associated with the narratives of three brothers, Wono Loi, Tai Loi and Leki Loi (who as we saw in chapter four, are alternatively autochthonous rulers of Baucau or invaders from the south). However, in Major Ko'o Raku's account of the development of above ground irrigation channels it was three brothers, Leki Sae, Wono Sae and Wali Sae from Makadiki Baka Hoi south of the central ranges, who initiated the construction of a network of irrigation channels stretching many kilometers from Wai Lia and Wai Husu to the sea. The expansive irrigated fields created as a result became the domain of various hamlets and households with each new terraced field being named after the farmer who created the bunds (*kabubu*) of the fields. These larger scale irrigation networks expanded extant small scale irrigation channels connected to particular fields and springs (see Map 4.1 for a depiction of the major irrigation channels currently flowing from Wai Lia and Wai Husu).

In contrast, the Wani Uma telling of development of Baucau's irrigation channels focuses on the arrival of Tai Loi, Leki Loi and Wono Loi and the beginning of Bahu's monopoly over the marine terrace zone's irrigation waters. The story is recounted thus:

> In the beginning Bahu sent the waters down this way. This was done by *marui masara*. *Marui masara* is not a person, it is a snake [from Luca, synonymous here with eel] that married a person. It was he who opened the pathway for water to emerge down here. He tunneled beneath the rocks and so emerged the underground channels. It is him we call

> *marui masara*, he is not a person he is a snake with wings. He dug the underground channels and the water followed his tail down to the sea. We never paid for it to go down to the sea. But things are different now. After they built the irrigation channels we gave Bahu rice fields [to 'pay' for the water]. The *Liurai* (ruler) of Bahu has them until now. He eats and drinks for free. We also gave fields to the *Wai Kabu* (W: water controller) from Boile.

Hence while ancestral eels (*marui masara*) dug the subterranean water channels from Wai Lia to the sea (emerging along the way at smaller springs and creating the possibility of irrigated fields), this free flow of water was impacted on at some point by the construction of above ground irrigation channels leading from Wai Lia and for which Wani Uma were now expected to 'pay':

> Now about the water channels above ground. We call that Tai Laku Wai Dala. This is also about eels and about shrimps. They say this water belongs to Boile and Macadai [Bahu] but it really belongs to Wani Uma and Buruma. Those others were just smarter than us.
>
> After the arrival of Wono Loi, Tai Loi and Leki Loi [who they say arrived in the *tempu monarchia*, the time of Luca] the real custodians of the water were forced to buy our own water. We ignorant and stupid people didn't know. We gave rice fields to them down by the sea. This land belonged to Buruma and Wani Uma. The others lived at the waters source [at Wai Lia and Wai Husu]. But they just took this water, took it over. In ancestral times we all owned the water together, but the others came back smarter and they took over.

While the arrival of rulers from 'Luca' signals a critical development in irrigated rice production, as we have seen in chapter five the Kingdom of Luca's power eventually also declined in the region. In the late nineteenth century, colonial rulers from Vemasse and Laleia increased their influence over the houses of Baucau and three of Bahu's sacred houses (Boile, Macadai and

Wabubo) received their authority in the form of the *rota* (sceptre) from these new rulers. As these irrigation channels developed under the auspices of early twentieth century Portuguese colonialism, another elder tells how the villages of Tirilolo and Buruma demanded that the water flowing from Wai Lia be formally shared with them through the water channeling process. This demand was made with reference to the founding sibling relationship that the three brothers Wono Loi, Tai Loi and Leki Loi had created between the villages.

The history of such changes during this period elsewhere in the Baucau district is demonstrated in the following account from the Wai Daba spring in Berecoli:

> What is important here is water. Our forebears were able to produce fields, rice and plantations because of this water. Our rice fields are old. In monarchical times before the Portuguese arrived we already had them. We had no buffalo or horses, we would prepare the fields by dragging rocks through them. We would make a place and tie a rope to a piece of limestone and drag it around to make the soil muddy. There were no animals. And there were only a small amount of rice fields. These original rice fields were all named. When the Portuguese arrived [in the early twentieth century] they were recorded in a book of tax records, but when our sacred house was burnt down [in the Indonesian era] that book was lost.[12] In the past my aunt who married a Chinese in Baucau would pay the tax for this land. Her husband worked with the Portuguese administrators and he would collect the tax for them. The Portuguese sent only the children of the rulers to school—this was a kind of politics. If this hadn't been the case we would all be smart by now. Berecoli is the heart of the Waima'a lands which stretched from here to the top of Matebian and across to Vemasse. While now these lands are largely dominated by the Makasae, it was the Portuguese that carved up the land.

While in this account an autochthonous connection to the land and waters is asserted, it is also clear that artifacts, such as taxation records, from the colonial encounter are also now a critical part of this story. Similarly although the institution of the *kabu bee* (M: *ira kabu*, W: *wai kabu*) is said (without exception) to precede the Portuguese presence, the term *kabu* is most likely derived

from the Portuguese *noscabo* a lowly ranked military officer (cf. Barnes 2011). Hence in Baucau town in the early twentieth century the figure of *kabu bee* is remembered as a fearsome town crier who brandished a whip and called out the orders of the village heads (*liurai*) regarding the irrigation schedule and the cleaning of the canals. During this period the three *liurai* of Bahu, Caibada and Tirilolo would come together to decide the irrigation schedule over the following three year period. The *kabu bee* would enforce this schedule.

Elsewhere in the 'new world', studies of long standing irrigation communities in the American south west show how the indigenous and non-indigenous *acequia* communities of the region are built on refashioned Islamic irrigation law first brought to the region by the Spanish colonial settlement in the 1500s. As Rodriguez (2006: 3) argues '[a]cequias appropriated and transformed whatever irrigation structures and practices were operating among the Pueblos in the Upper Rio Grande Valley at the time of European contact'.[13] Such examples draw our attention to the inter-relationship and adaptive capacity of customary governance systems which encountered and continue to dynamically co-exist with colonial era practices.

Extant practices of irrigated rice production in Baucau town

By the late 1960s when the geographer Joaquim Metzner carried out fieldwork in the Baucau-Viqueque region, karst springs were the basis of the local rice production in the fields below Baucau town. While Metzner makes no mention of the rituals carried out at these springs he does note that in Baucau and surrounds agricultural production was dominated by what he termed an 'archaic' form of irrigated rice cultivation. In the lands directly below Baucau town he documented a tradition of double cropping terraced fields (*natar*) with an annual crop of rice, followed by one of maize, sweet potato or onion (Metzner 1977; cf. BCAef 1918 (4): 456). These fields were fed by two large spring complexes: Wai Lia located in the centre of the town itself and Wai Husu in Teolale just below the town proper. Metzner's description of the local rice ecology as 'archaic' referred to the following processes: the fields are fed by nutrient poor spring water, with equally poor calcareous soils continually hardened by a field preparation method involving the trampling of mud by horses or buffalo, into these rock prone fields of largely

unimproved soils are planted indigenous rice species returning low yields. Yet despite what he terms an 'archaic' process, Metzner did comment that one cannot fail to be impressed by the local 'display of ingenuity' (1977:136) in regard to the terracing of the rice fields. In addition he writes that:

> Owing to the constant water the terraces from Baucau village down to the sea are intensively cultivated [for a variety of crops] throughout the year. Thus apart from similar sites on the eastern and western escarpment of the Baucau plateau the region around Baucau village is certainly one of the most privileged agricultural zones of the Baucau-Viqueque area which, because of its near level platforms, is particularly suited for wet rice cultivation (Metzner 1977: 25-26).

He reports briefly too on a series of man-made clay and mud water channels which branch out from the town's springs in order to feed the rice fields at some distance to the east and west and down to the sea (see Map 4.1).[14] He mentions in this regard the role of a figure 'assigned' by the 'local peasants' and known in Tetum as the *Kabo-be*, which he translates as the 'village official in charge of distribution of water for wet rice fields' (1977: xix). Despite this he says there are frequent quarrels over scarce water supplies. Rights to *natar* whilst inheritable were, in his opinion, more like a permanent usufruct than ownership and there were sometimes quarrels over seemingly abandoned paddy fields (1977: 147).

These practices described by Metzner are extant, if somewhat precarious, in Baucau today. The agrarian system embedded in the landscape continues to feature a scattered network of individually owned dry and wet agricultural plots transferred through inheritance or marriage. Such agricultural holdings and 'transactions' are recorded via story and specific naming practices and upheld through ritual practice.[15] Collective labour in fields is enabled by house based marriage exchange networks and produce and money are distributed and re-distributed through these inter-linked groups. Communal grazing of buffalo, goats and horses across these lands remains the norm, as does the shared planting and harvest of wet-rice among aligned house-based groups (sometimes for payment and sometimes for meals). Little in the way of state

agricultural support is offered to Baucau's marine terrace rice farmers and they have struggled to maintain their network of irrigation canals and restore their depleted stocks of livestock and machinery in the independence era. These difficulties are compounded by the drift of youth to Dili creating a shortage of agricultural labour, particularly for the planting and harvesting of irrigated rice. Similarly, cheap government subsidized rice imports and an emerging preference for small scale market gardens are shifting farmer's effort away from wet-rice production in this zone. As a result in some years, even when water is available, some fields may not be planted at all.

In the fields that are planted many rice cultivars are now sourced from imported varieties (which are theoretically higher yielding and faster growing). Some indigenous cultivars remain, particularly red rice varieties. In contrast to the river-fed plains around the Seisal River (see Map 4.1), rice in the marine terrace zone rice is usually grown only for household and ritual consumption. Due to the high cost of agricultural inputs it is also mostly produced by organic farming methods. In a few areas, mechanized rice threshing has become more widespread as the machinery has been distributed by international agricultural organizations.

Post-sowing and post-harvest rituals continue to punctuate the rice growing calendar of most (see below). Horses and buffalo are still preferred to puddle fields although there is an increasing use of hand-tractors in some larger less rocky fields (tractors were for a period distributed to farmer's 'co-operatives' by the Timorese Ministry of Agriculture). In some areas there remain in place prohibitions against iron machinery such as ploughs, tractors or threshing machines entering fields. These prohibitions are applied to fields which were first opened by the ancestors and which remain central to a house's ongoing ritual exchanges with ancestral spirits. In such cases machinery may only be admitted to these fields after the permission of the ancestors has been requested and granted at rituals carried out at the relevant sacred house (many of which also continue to be constructed without the use of iron, including nails). The reasons for such prohibitions are twofold: firstly these materials were not used by the ancestors[16] and, secondly, ancestral beings and nature spirits are in general averse to metals (this is why pregnant women

may be advised to place an iron nail in their hair in order to ward of the unwanted attention of malevolent spirits).[17]

Across the marine terrace zone, rice is irrigated by a network of mostly earthen but sometimes lime-lined or concreted canals reaching from major springs while lesser springs have shorter earthen canals feeding smaller areas. In the case of the irrigation channels leading from the Wai Lia and Wai Husu springs there is one annual communal irrigation cycle for rice production. This also enables livestock grazing in the fallowed fields outside of this cycle. In some areas in this zone, two crops of rice may be grown annually. In such cases, the second crop remains outside of the communal irrigation cycle and must be fed by alternative irrigation waters. As described below, the annual irrigation cycle is enabled by the creation of irrigator groups whose individual members usually also have access to smaller springs as alternative, if less reliable, irrigation sources. The water controller and the irrigator groups from Baucau's marine terrace zone have no formal relationship with the district agricultural department who concentrate their limited resources on working with more 'modern' irrigation co-operatives in the plains and river valleys (cf. Thu 2012).

Traditional irrigation co-operatives

To enable their cultivation of the terraced fields around Baucau town, water-sharing farmers come together in cross village co-operatives to appoint irrigated rice water controllers known as *kabu bee* (or *wai kabu* in Waima'a and *ira kabu* in Makasae). These people enforce and police the annual allocation of water between sections of a particular water channel and between the rice farmers themselves. Each land owning village will have several *kabu bee* appointed at a meeting of the community of rice farmers connected to one particular channel. As Bahu is the older brother in the sibling relationship between the villages these irrigation co-operative will meet to appoint the various *kabu bee* at the Bahu village head's office. The water allocation for the annual rice growing season rotates each year between the various channels and villages and is determined by meeting of the village and sub-village heads in consultation with *kabu bee* and the rice farmers.

The position of the *kabu bee* is held until retirement or ousting due to a failure to properly fulfill their responsibilities. Payment for their services is made up by the collective contribution of a small portion of the rice harvest from each of the farmers in that area. The *kabu bee* is responsible for organizing the irrigation cooperative to painstakingly clear and clean the several kilometers of water channels which feed into the shared named blocks of rice fields[18]. These water channels are fashioned from mud, clay, rock, lime and in some places reinforced with concrete. Annual repairs include cleaning away grasses, tree and vegetation roots and rehabilitating channel wash outs with mud, rocks, and whatever other materials are at hand (see Figure 6.3). At the same time the work team will close off the many smaller water diversions to non-rice growing areas.

<INSERT FIGURE 6.3 HERE>

The *kabu bee* also co-ordinates the rituals for water dividing and sharing. Meanwhile water 'opening' ceremonies are carried out by particular ritual leaders at springs and these rituals ensure the ancestral spirits will send the waters down the channels to the rice fields. Immediately or shortly after this ceremony to send the waters, a water sharing/dividing ceremony will take place at the fork in the main water channel above where the rice fields are to be irrigated in that year. During this ceremony, which involve ritual leaders, village and sub-village heads the *kabu bee* and the male and female community of rice farmers, a goat will be sacrificed.[19] The ritual leader will invoke the ancestral names of Wono Loi, Tai Loi and Leki Loi, amongst others, in order to receive and give thanks for the water. The names of other ancestors connected to the named blocks of rice fields below the water division will also be invoked so that they in turn will receive the water. The water in the channel is divided by the placement of rocks in the middle of the water channel. The measuring of this division will be done by the *kabu bee* with the village heads and subheads witnessing that the placement reflects the pre-agreed division. Next to the rock division will be placed a wooden stake hung with small branches, the public signal that water sharing arrangements are in place and that from now on no-one other than the *kabu bee* is authorized to make changes affecting the water irrigation. Anyone that does will be penalized

with the fine of a goat or in extreme cases will have the water supply to their fields shut off.[20] Following the water sharing ceremony a communal feast is held in the rice fields nearby.

Democratically elected, the office of the *kabu bee* is essentially secular. While he is directly accountable to the rice co-operative members he is also in some respects an agent of the village or sub-village head. However, it is also clear from the process outlined above that his own and the irrigation co-operatives' work cannot be carried out without the active support, participation and religious knowledge of local ritual leaders, as well as the living human custodians of the springs. In some communities with less extensive irrigation channels the spring custodian will carry out these tasks of water allocation and dispute resolution.

Once irrigation waters are received by each individual rice farmer they too will carry out rituals in their own rice fields. The most important of these are those carried out when the 'body' of the rice first forms and again after harvest when the 'first rice' is transported back to the farmer's sacred house. This rice must be transported back to the sacred house by a female member of the lineage[21]. This ritual, known in Makasae as *rau wai* ('good blood'), culminates at the house in the ritual washing of house members bodies with water collected at the spring associated with the house. After this ritual, water from any of springs which has fed the fields will be collected and sprinkled over the remainder of the rice before it too is carried home.

All of these planting, harvest and water sharing practices and rituals are believed to be critical to the growth and fertility of rice crops and individual lineages. As we saw in chapter four, these ritual practices and relationships also extend upwards from the marine terrace zone to the custodians of the underground water on the Baucau plateau. A further component of the relationship between the *ria p'obo* (W: wet ground) and *ria mhare* (W: dry ground) communities is said to be the contribution to the house of Ledatame Ikun of one *lata*[22] of unmilled rice per rice farmer. The *kabu bee* is charged with collecting and delivering this 'tribute'. The gifted rice is then consumed by Ledatame Ikun in the ritual feasts for their twice annual ceremonies alternatively celebrating the harvest of dry rice and maize. Ritual leaders from Bahu are also invited to attend these feasts. The Ledatame ritual custodians of the water say that they do not

demand this tribute, stressing rather that these are *gifts* which the coastal rice farmers choose to make. While it is unclear for how long this particular practice has been carried out it seems that the process has always been done under the auspices of the village of Bahu. The elders of Wani Uma state that:

> Recently the Liurai of Bahu asked us to take 50 *lata* (tins) of rice to Darasula. But we at Wani Uma have never gone there to do this. The smart people go. We ignorant and stupid people just follow what they say.

Ritual politics, ancestral names and bodies

While they are largely marginalized from the administrative village politics of the area, Wani Uma elders also make it clear that the political houses of Baucau today lack the true knowledge of the underground ancestral journey from the plateau to the Wai Lia spring. The true ancestral name and origins of the man who emerged from the spring is said to be concealed by the ritual prayers associated with the spring. They explained it to me thus:

> The water in Baucau really belongs to Wani Uma and Buruma because it was they that arrived first in the region. When they arrived they created the water sources. The man that emerged from Wai Lia was a son of Kelikai [Quelicai] who had come and married a woman from Ledatame. It was he who fell into the water after he tied a salt basket containing ash around his dog's neck and followed him to the water. The problem is that the name of this person was 'hidden' by the family of the woman who found and married him. If you know this story and the correct ancestral name when you recite this prayer at the spring the buffalo will just fall down dead and the water will flow forth vigorously. There is no need to kill the buffalo with a knife. The so called custodian of the water cannot do this. Only the ancestors of the Rikainena Primeru [a house of Wani Uma] knew this correct story. When the new rulers ('*ema matenek'*) came along they changed Cai Bada's name to Tai Loi but the buffalo would not die. Calling the names Leki Loi, Wono

> Loi the buffalo still would not die. Only Rikainena Primeru could recite the pray correctly and make the buffalo die.

In this claim made by the elders of Wani Uma it is clearly acknowledged that while the village of Bahu may be clever (*matenek*) and has benefited from it alliances with newcomers, they are not the 'true' holders of knowledge about relationships connecting this spring to other places. This Wani Uma claim to 'true' knowledge is both an assertion of ritual precedence and a claim to pre-eminent rights in both land and water in the area.

Meanwhile the present day custodian of the Wai Lia headspring in Baucau is the house of Wai Mata Buu (W: 'the Custodian of the Spring') in the village of Bahu. As a result of disruption to these rituals in the second half of the twentieth century (this is discussed in chapter seven), the present day (Makasae speaking) custodian of Wai Mata Buu has, by his own admission, limited knowledge of the ritual prayers (and stories) associated with the spring.[23] Nonetheless it was his ancestor who emerged out of the spring seven generations ago and married a woman from Macadai (as we see throughout this book, seven is number of particular ritual significance across the region, and in order to keep to this up the hepatic patterning some clans will only recount seven generations (Hicks 2004: 79)). The full name of the hamlet where the house of Wai Mata Buu is located is Macadai Wai Mata Buu. For the people of Macadai in Bahu this reflects the fact that the original ancestor of Wai Mata Buu emerged in the waters of Wai Lia and subsequently in-married (*kaben tama*) into the woman's house in Macadai. This absence of a 'proper' marriage exchange process between the fertility-takers and the fertility-givers (in this case from the husband's family to the wife's family[24]) enables Macadai to also claim a role as the rightful custodian of the waters of Wai Lia. However, this version of events is disputed by Wai Mata Buu and the elder brother house of Ledatame Ikun who maintain that an exchange of buffalo and other goods did eventually take place. In another account, the Bahu house of Boile Komu claim to have adopted the original ancestor of Wai Mata Buu (in this account it was women and men from the house of Boile Komu who rescued him at the spring) and to have arranged the marriage and exchanged the appropriate goods with the house of Macadai. Through

this account Boile Komu is able to assert its own older sibling connection to the Wai Lia spring and story.

Given the present day challenges surrounding the organisation of large scale community rituals at the spring (see chapter seven), what is also notable about these many versions of the one story is that they now lack a collective forum for deliberation and negotiation. Nonetheless despite the lack of ritual knowledge of the present day custodian of Wai Mata Buu and the various 'truth' claims relating to custodial relationships, when ceremonies of whatever scale are held at the spring, Wai Mata Buu's 'bodily' presence is central to activating the mutuality of relations (or co-beingness) between human and non-human water custodians. It is his body that provides the path to this diversely manifest ancestral realm and only together can these 'bodies' activate the fertility and flow of the irrigation waters.

Discussion

It is evident that there are range of challenges facing the politics and practices of traditional irrigated rice production across the zone. At the same time there is also great continuity in the frameworks through which rights to rice fields and water continue to be envisioned and enabled. These relations are dynamic and open to re-interpretation via both the telling of stories and the ritual practices associated with them. Many of these place-based practices have also long been engaged with formal colonial governance processes and interventions. Through this all, honouring ancestral and marriage exchange relations clearly remains a central consideration in the local configurations of rights and responsibilities and to the success of the rice irrigation and harvest (and all revolve around 'gift giving' in exchange for fertility) (cf. Hicks 2004).

Nonetheless in the complexity of people's relationship to place and each other, it is often the case that the stories of ancestral and human relations connected through water never quite add up. Despite all the tellings of the parts, the whole remains elusive, a sort of hovering 'absent presence' (Traube 1989: 340). As Traube writes local people 'do not necessarily try to order parts into a whole, and so to understand how everything hangs together, but rather content

themselves with a faith that things do indeed cohere, and that the source of that coherence lies in the past…an untold remainder' (Traube 1989: 340). There is thus an ever present tension in these narratives between elusive 'true', complete or 'trunk' knowledge and partial 'tip' knowledge. The point of the latter, writes Traube, is to 'reinscribe paradigms into narrative sequences' (1989:341) and such narrations are an 'interpretative act by which individuals at once give meaning to their own socially lived experience and construct their identities in relation to their audiences'(Traube 1989:339).

Also exploring the constant assertion of and search for 'true words', in the highlands of the Manatuto district Bovenseipen (2012: 57) pays close attention to the paradox of 'dynamic processes' and the ways 'through which villagers sought to establish the notion that these words exist in a timeless sphere external to the human body'. Later by drawing together an analytical distinction between essentialist (timeless) and inter-subjective (negotiated) notions of knowledge, she argues that:

> In a particular context, these two notions can *seem* opposed, but one element of this opposition ('trunk' knowledge) always also contains its opposite ('tip' knowledge). Hence, at one level, these two poles can appear opposed, even though, at a different, preceding level, the two opposites (trunk and tip) are encompassed by a greater original totality (the trunk) (Bovensiepen 2012: 70-71).

Yet it can be argued from the material presented in this chapter that also significant to such knowledge politics, is the fact that attached to these words are ancestral names and to them actual bodies: The bodies of the dead and the bodies of the living. It is then, this continuity between the living and the dead that is the greater original totality. In this way knowledge is never something external to the body, it is critically embodied and relational, relying on the co-being and constant 'participation' of particular bodies which connect the dead to the living (and the not yet born). Such continuities apply equally to the bodies of named objects, the sacra used to feed the ancestors of springs and sacred houses (this is discussed in chapter seven).

In the politics surrounding such knowledge negotiations and ritual practices, Traube concludes that what matters more than the telling of these stories is the presence of knowledgeable ritual leaders at events, those who could tell, but choose not to. Yet what is also evident, particularly in the context of twentieth century disruptions to local livelihoods and ritual practices, is the centrality in this 'absent presence' of those who may no longer be able to tell (in either narrative or prayer) but whose own socially inscribed 'body' constitutes a critical part to the whole. In such cases what matters is the attributes of their bodily presence, forming as they do a conduit between the storied world of the living and the ancestral presence of the *dai* (cf. Tsintjilonis 2004; Viveiros de Castro 2012). Hence while the words of the living enliven the world, it is essentially the spiritual ecology of the 'collective body' of the custodians of the waters (living and dead, humans and non-humans) which transmute its life force, forming a contiguous link to a greater whole. This link, activated through water and ritual, ensures that such practices remain embedded in a constant process of communication, negotiation, debt and obligation with the ancestral realm.

As in the past, this world of relational, always embodied knowledge is challenged in the independence era by other frameworks of land and property relations. As we will see in the next chapter, eliding the ongoing significance of 'participation' and the inter-generational flow of life (fertility) between marriage exchange alliances, the living and the dead, humans and non-humans, these powerful, 'other worldly' frameworks seek to solidify boundaries demarcating individuals and groups, land and property. While these changes are embraced by many, others are more fearful. Across the Baucau Viqueque zone, elders pose similar questions to that of Onvlee over half a century ago in Sumba: 'What other bedrock can this culture now build on? Into what shall it root?' (1977: 163). It is to this question that I turn my attention to in the final chapter.

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[1] By the late twentieth century, in many localities factors such as war, population growth and modernist agricultural ideologies had all contributed to a lessening of the hunter-gatherer aspects of this economy.

[2] Correia (1935: 113) gives an account of a similar range of activities in the Makasae seasonal calendar.

[3] Women are usually responsible for the sale of non-subsistence produce at local markets and roadside stalls.

[4] Shulte Nordholt (1971: 271) describes a myth of the Atoni in which two brothers known as Sonba'i kill their sister and chop her body into pieces. From her limbs sprout crops.

[5] We saw on the north coast that arrival of (returning) peoples from across the sea were connected with the emergence of rice agriculture (chapter 3). During research carried out by Susana Barnes in the nearby kingdom of Babulu, local Naueti speakers suggested that their ritual language contains many 'old' Makasae words, the meaning of which is not clear (pers. comm. 2014).

[6] The last remaining descendents of this herd were lost during the Indonesian occupation.

[7] A lesser ritual involving the sacrifice of a dog, a chicken and a pig is known as *saba lesa.*

[8] As a result of his adoption by Dom Fransisco, Filomeno Da Camara was educated to class four in Ossu's elite missionary college. This was not a common occurrence for local men of his generation and something for which he is understandably proud.

[9] It is not known exactly how long irrigated rice has been grown for in Timor. According to Soares (2003:144) irrigated rice was introduced [or at least significantly expanded] by the Portuguese in Timor by Governor Jose Alcaforado de Azevedu e Sousa in 1816 with assistance from Javanese irrigators. The longevity of irrigated rice expansion can also be inferred by Silva who writes that '[i]n Timor, the cultivation of rice is done is done under more diverse conditions. Here and there, one notes the influence of practices used in neighbouring islands, where the population knows how to cultivate rice with skill. It is very likely that immigrants of various origins have taught something [to the Timorese], just as it appears that the Japanese took advantage of the agricultural lowlands [presumably for rice]...The region in which rice cultivation is most advanced is, undoubtedly, Viqueque, on the plains of Luca' (1956: 104).

[10] In addition to this many buffalo were dying (BCAeF 1914 (4): 190), possibly due to the increasing pesticide use (cf Urich 1989).

[11] Manatuto farmers say that Manatuto once had similar indigenous irrigation practices and rituals as those described below in Baucau town. Land in the senior landowning groups in Manatuto is passed through the matriline.

[12] This book of records is important in the context of a current dispute over rights to particular rice fields between the custodians of the land and waters and the descendents of others from Quelicai. In the early twentieth century, the latter were 'invited' in (through sacred agreement with a *liurai* from Quelicai) to farm in the area.

[13] This body of irrigation law brought to New Mexico from Spain was an adaptation of Islamic law brought to the Iberian Peninsula (both Spain and Portugal) during the north African occupation of area (an occupation that lasted some seven hundred years until being expelled by the Conquistadors in the thirteenth century). This body of law was subsequently adapted by the new Christian rulers of the Peninsula and eventually taken to the New World in the late fifteenth century (Rivera & Glick n.d.).

[14] Duarte (1930: 312) also notes the existence of indigenous irrigation channels and a program of government improvement and management. Correia (1935: 255) refers to masons lining irrigation channels near Buruma with

limestone. While some irrigation channels were previously earthen, others appear to have been fashioned from bamboo (BCAef 1918 (4): 459).

[15] A minority of areas, such as fields close to Gariuai village and the Fatumaka Agricultural College, had their (fertile) agricultural lands surveyed and registered through Indonesian era cadastral surveys.

[16] This preoccupation with ancestral processes of rice production is perhaps linked to the point made by Forman that '[r]ice itself was not sacred to the Makassae, but only that which was ritually produced and processed (1981: 105, 106; cf. Iskander 2007: 119).

[17] There are many local spring narratives which recount the danger of disclosing to the ancestral realm the living's use of metal fishing hooks (cf. Hicks 2007, forthcoming). In many of these myths power objects retrieved from springs via the 'dark world' emerge from the springs in the first instance as vegetative substances such as gourds and vines. Only later, after the sun has risen, do they transform into wealth such as gold, swords and buffalo.

[18] Failure to participate incurs a fine, usually a goat, although if a farmer or landowner (with labourers) is unable to participate a representative can be sent or alternatively a contribution can be made to feed the working team of men.

[19] Depending on size of rice fields each rice farmer contributes a small sum of money ($1-2) for this sacrifice.

[20] Non-participation of rice farmers in the water dividing ceremony may also attract the fine of a goat.

[21] A similar set of harvest rituals is described in detail by Correia (1935: 92-98, cf. 64).

[22] Timorese use bulk not weight measures *'Lata* =20 litre oil tin equiv 12.8 kg of unmilled rice' (Metzner 1977: 129).

[23] At spring ceremonies these ritual prayers are narrated by others (notably Major Ko'o Raku).

[24] See chapter one, endnote nine.