



**The Drua Files: a report on the Collection and Recording of Cultural  
Knowledge of Drua and Associated Culture.**

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**Prepared for the Oceanic Centre of Art, Culture and Pacific Studies,  
University of the South Pacific by the Fiji Islands Voyaging Society**

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## Acronyms and Terms Used

Camakau	the outrigger version of drua which are still built and sailed in a few locations in Fiji including the Lau. Reported historically as being built both saucoko and tabetebete style
Cultural knowledge	is used here to refer to all forms of cultural expression including oral history and story
Drua catchment	the geographical spread in which drua, kalia and 'alia vessels operated
FNU	Fiji National University, School of Maritime Studies
FIVS	Fiji Islands Voyaging Society
iTaukei	Ministry of iTaukei Affairs
Lemaki	Descendants of Lemaki, a Samoan specialist craftsmen brought to the Lau by Tongans in the late eighteenth century
Mataisau	Mataisau is used as a collective term for the Fijian clans of hereditary carpenters
OCACPS	Oceanic Centre for Arts, Culture and Pacific Studies, USP
Saucoko	drua (and camakau) constructed using a single large hollowed log as its base component
Tabetebete	multi-planked vessels sewn to a scarfed keel and of considerably greater size than saucoko drua
Talanoa	is used here in the context of the recognised formal process of holding discussions on any given topic, see Halapua, W. (2008) and Halapua, S. (2007) in the bibliography, Appendix 3
TK/IPR	Traditional Knowledge/Intellectual Property Rights
USP	University of the South Pacific
VUW	Victoria University Wellington

## 1. INTRODUCTION

### a) Purpose of Paper

Fiji Islands Voyaging Society (FIVS), in collaboration with a number of key stakeholders, has been undertaking a research programme into Fijian sailing heritage. This paper gives a report on progress on collecting and archiving the historical record of drua and related culture. It also sets out recommendations as to the next steps to be taken in this research agenda.

### b) Background

The drua of Fiji are generally acknowledged as the finest two-hulled sailing vessels<sup>1</sup> built by Pacific Islanders in Oceania. Also called Kalia in Tonga and `Alia in Samoa, there is debate amongst historians over the origin of the vessel design which has linkages to, at least; Fiji, Samoa, Tonga, Rotuma, Uvea, Futuna, New Caledonia and most of Micronesia, the latter due to the strong correlation between the shunting nature and sail design and configuration of drua, camakau and Micronesian vessels. There is strong inference that the “drua catchment”<sup>2</sup> could also include Tokelau, Niue and parts of the Cook Islands.

The vessels differ in conceptual design from other Pacific vessel designs in that they are “shunting” as opposed to “tacking” vessels; the cama or outrigger hull is always kept to windward on all points of sail and the sail tack is carried from one end of the canoe to the other. The drua<sup>3</sup> are arguably the greatest indigenous technological heritage of Oceanic cultures. The role of *vesi loa* (*Instsia bijuga*), a superior ship building greenheart timber of the southern Lau Islands grown on limestone rock, was central to the development and success of this vessel, with temporary and permanent settlements of Tongan and Samoan craftsmen being established on these Fijian islands to exploit the resource.

Little is known of the vessels and related sailing culture that preceded the drua in Fiji.

Once a major shipbuilding and sailing centre, traditional drua culture is now in sharp decline in Fijian waters. No great drua of the tabetebete design have been built in living memory and only isolated pockets of sailing and canoe building remain. Yet sail powered transport once connected Fiji to a complex social, political and trading network that covered a large portion of central Oceania. Traditional sailing vessels

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<sup>1</sup> Although often referred to as “canoes” in the literature, the term is misnomer and gives a false impression of these vessels. The great drua were blue water vessels up to in excess of 100’ long, capable of carrying 200+ passengers at speeds of up to 15 knots and constructed of multiple planks fitted to scarfed keels.

<sup>2</sup> The term “drua catchment” is used here to refer to the geographical spread in which drua, kalia and `alia vessels operated.

<sup>3</sup> Where there is no need to distinguish between country or culture of origin, all vessels of the drua, kalia, `alia class are referred to as “drua”. The origin of the drua design is contested within the catchment.

were a central feature of most aspects of practiced culture until little more than a century ago and the drua motif is still one of the most recognizable symbols of Fiji.

FIVS was formed in 2009 with the aim of spearheading a revival of Fiji's long maritime heritage. In 2011 FIVS commenced a research programme to collect, collate, and archive existing knowledge of drua, firstly that already recorded in relevant literature and then unrecorded cultural knowledge.

A scattered written and pictorial record of drua exists and there are models of drua in various museums. A well-preserved example of a 44' drua, *Ratu Finau*, built in 1913 is the central exhibit of the Fiji Museum in Suva and a smaller version is housed in the NZ National Maritime Museum.

While a number of researchers have investigated drua previously, this is thought to be the first time a systematic attempt has been made to collate, analyze, and review all known records of drua and drua culture. Chapter 3 includes a summary of the review of previously recorded information.

Following on from the review of recorded information, this report details the initial collection of the surviving unrecorded knowledge from the descendants of the Mataisau and Lemaki who built many of the great drua fleets on the Lau Islands. This task has proved especially rewarding and has resulted in the collection of raw data, providing vital information from octogenarian informants. Such an exercise has not been attempted since the work of the acclaimed anthropologist Laura Thompson (1940) and is believed to be the first time such a data collection exercise has been undertaken by Lauans in their own dialect. The exercise has also resulted in establishing a network of practitioners and key stakeholders and is contributing to a growing resurgence of indigenous interest in sailing heritage.

FIVS's overall research project has been a collaboration between a number of key stakeholders and agencies across Fiji. The University of the South Pacific (USP) and in particular the Oceanic Centre for Art, Culture and Pacific Studies (OCACPS)<sup>4</sup> is a central partner and has provided financial and technical support for this collection of unrecorded knowledge from the Southern Lau Islands (see Chapter 4) through the USP research cluster programme. Other key agencies have included USP library, Fiji Arts Council, Ministry of iTaukei Affairs (iTaukei), Fiji National University's School of Maritime Studies (FNU), and the Fiji Museum.

In particular the research has had the active support and participation of the Mataisau, the hereditary Fijian boat building clans, and the Lemaki, the Samoan specialist craftsmen brought to the Lau by Tongans in the late eighteenth century. The role of USP is expected to increase as research moves to a regional level (see Recommendations Chapter 9).

That this research project has culminated in bringing together this critical network and providing a focus on a matter that is obviously of deeply felt significance to all is one of the successful outcomes of the project. It is obvious that there is a keenly felt belief, on

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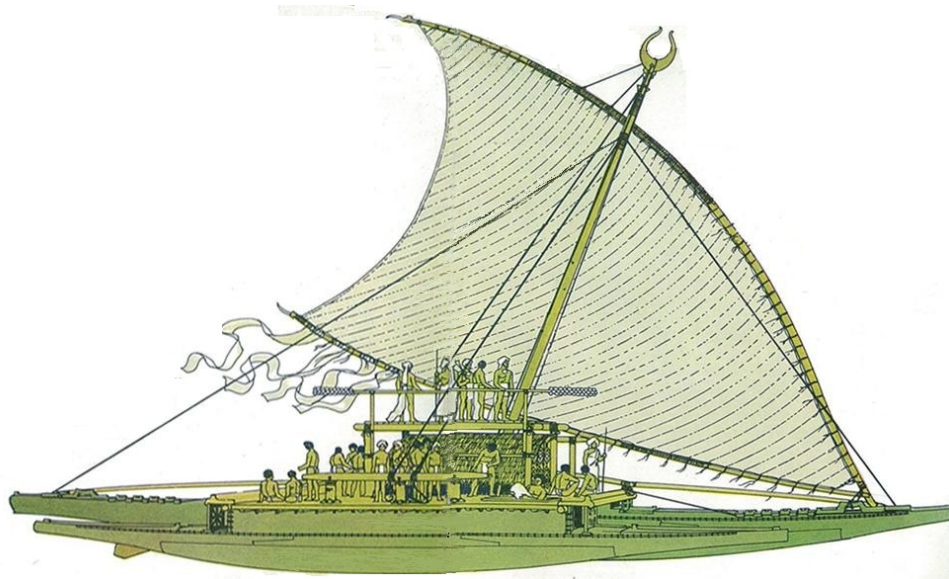
<sup>4</sup> OCACPS was recently appointed the Regional Heritage Hub for the Pacific by UNESCO.

the part of all participants in the process, that revitalisation of drua-related culture would be an immensely empowering and desirable objective, both for Fiji and the wider related Pacific community. Achieving this vision will, equally obviously, require the ongoing positive collaboration of all these parties.

The current research shows that there is a large body of source material on drua themselves but a much patchier record of related drua culture, including Fijian navigation methods which have sadly all but disappeared. The field research of surviving orally held knowledge shows that there is still a proud known tradition but informants are few in number and key informants are now advanced in years. The field research confirmed that there is substantial cultural knowledge that is not found in the literature. Such knowledge must be considered to be highly vulnerable given the small number of knowledge holders. By this we mean absolutely no disrespect to those communities whose tenacious maintenance of their proud traditions are testament to village and island resilience.

The research has attempted to set a high best practice standard, in particular in terms of collection of the cultural knowledge. There are now critical issues pertaining to traditional knowledge storage and intellectual property protection to be addressed (see Chapter 7). These matters are complex, particularly given the multi-cultural nature of the original vessel designs and related operational knowledge stretched, as it is, over several Pacific states and cultures.

The research undertaken to date is seen as only the first step in a longer process of historical reclamation and reinvigoration. Having established that a vital, but highly fragile, living heritage of drua exists in Fiji, it is essential to identify how this research programme can best be extended and applied. Secondly, having established how fragile the record is in Fiji, it is essential that the research now be expanded to include the other cultures in the “drua catchment”. This report includes recommendations both in regard to the data collated to date of Fijian heritage and the expansion to the wider central Oceanic region.



## 2. PROJECT METHODOLOGY

The project methodology has been developed on advice from leading academic sources from USP<sup>5</sup> and Department of Pacific Studies, Victoria University of Wellington (VUW)<sup>6</sup> and comprises a series of structured stages:

Focus	Stage	Process	Outcome
1) Recorded Knowledge of Drua	i) Literature search	All known written resources from local archives (Fiji Museum, National Archives, South Pacific Collection USP), private sources, and the internet have been searched for reference to any aspect of drua culture (650+ records) and those with any reference summarized (65).	Compendium of written record (unpublished)
	ii) Review and analysis of literature search	The resultant compendium has been reviewed and analyzed to establish a record of agreed and disputed literature of drua.	Literature Review paper (under review with Journal of Polynesian Studies, Auckland University)
2) Unrecorded Cultural Knowledge of Drua	i) Consultation with key stakeholders	Proposal developed to undertake collection of cultural record of Mataisau. Consultation with key agencies and stakeholders and agreement obtained to search for unrecorded cultural knowledge	USP Research Cluster contract agreed November 2010
	ii) Collection of unrecorded cultural knowledge	Mataisau data collection field trip to Southern Lau (Kabara, Vulaga, Ogea). Suva talanoa of Mataisau.	<ul style="list-style-type: none"> <li>• Raw data (Video and oral records of Mataisau talanoa)</li> <li>• Public lecture held USP 30 Nov 2011</li> </ul>
	iii) Archiving of data	All raw data rough edited and archived	Copies of all raw data for lodgement in iTaukei national heritage database and USP library (in progress)
	iv) Project reporting	Project report and recommendations prepared and reviewed	<ul style="list-style-type: none"> <li>• This paper</li> <li>• Paper on research data collection and archiving process and results for publication (in preparation)</li> <li>• Paper on traditional knowledge and intellectual property right issues for publication (in preparation)</li> </ul>

<sup>5</sup> In particular Professor Vilsoni Hereniko, Assoc. Professor Joeli Veitayaki, Dr Jonathon Ritchie.

<sup>6</sup> Dr Teresia Teaiwa.

### 3. THE WRITTEN RECORD

The literature on Fijian sailing culture is sparse and scattered relative to other canoe<sup>3</sup> cultures of Oceania. There is an extensive, well reviewed but, again, scattered pictorial record. A comprehensive literature search of Fijian sailing culture was undertaken. Given the interrelated nature of the relationship of drua with Tongan kalia and Samoan `alia these terms were also searched for. It is important to note that almost without exception the authors were not Fijian (or Pacific Islanders).

Each relevant reference was summarised and collated into a *“Compendium of Literature pertaining to historical and pre-historical Fijian sailing culture with particular emphasis on Drua”* (Nuttall 2012, unpublished) which can be sourced at [www.sailingforsustainability.org](http://www.sailingforsustainability.org) and [www.fijivoyaging.com](http://www.fijivoyaging.com)<sup>7</sup>.

The references were reviewed to analyse the key characteristics and identify the areas of consensus and divergence.

There is consensus amongst commentators in several areas:

- that the drua was the finest blue-water ship built and operated in Oceania<sup>8</sup>,
- that its evolution was the result of a successful hybrid of technology and construction including Micronesian sail and rig<sup>9</sup>,
- that the sailors (men and women in the Fijian case) that crewed these ships displayed outstanding seamanship,
- that drua played a pivotal role in the expanding politics of the region,
- that sailing culture was in a phase of progressive growth in that part of the Pacific generally referred to as the “Tongan Empire” or “Tongan Maritime Chieftain” at the time of European contact, and
- the construction methods, materials, and operation of these vessels.

There is significant divergence on other points, in particular:

- the route of technology transfer that led to the evolution of the drua (particularly the origin of the distinctive hulls),
- the role of Fijian and other Melanesian cultures in that evolution,

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<sup>7</sup> The compendium is a living document and every attempt will be made to add additional entries as they come to hand. Since the original compendium was prepared in August 2011, a number of additional articles have been collected. Tonganivalu (1915), Thompson (1940), Tippet (1968) and Geraghty (1994) are of particular significance. An updated version as at April 2012 has now been added. This record will also be made available through the FIVS website and the USP Library, South Pacific Collection and electronic copies circulated to all relevant stakeholder organisations.

<sup>8</sup> The largest recorded drua was 118’ long. Drua are regularly reported as being capable of speeds over 15 knots and could sail within 3 points of the wind while carrying loads in excess of 200 passengers. Wind tunnel tests of model proa, a design equivalent to the Fijian camakau, confirm their ability to perform as historically reported (Jackson, P & K. Bailey, 1992)

<sup>9</sup> Although all the literature reviewed considers that the Oceanic Lateen sail was imported to the central Pacific from Micronesia, it is also possible the exchange went in the opposite direction.



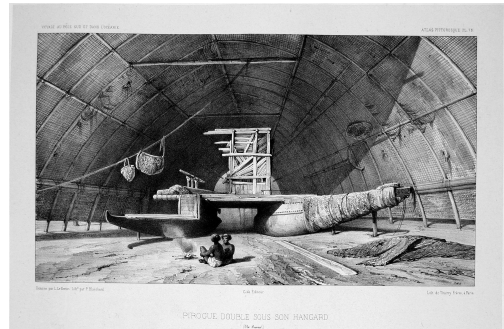
- the capacity of Fijian sailing culture prior to Tongan eighteenth century influence,
- the role of introduced iron in the creation of the drua prototype, and
- the case made by some commentators that the drua design comes from a Tongan lineage and could not have originated in Fiji.

Almost no evidence or reference was found to pre-drua Fijian vessels. With the exception of the artefacts held in the Fiji Museum, which includes a 44' drua built in 1913, there is no reference to archaeological or historical remains of vessels existing in Fiji.



The review of the written record compiled in this research has been written up as a journal article and is currently with Auckland University's Journal of the Polynesian Society for review.

Since the review was written and submitted, a number of additional sources have come to hand which provide new information, in some cases illuminating areas not explored in other commentaries. Of particular importance are references to cultural traditions and ceremonies associated with construction and sailing of vessels in early accounts of Fijian pre-history and myths, Tonganivalu's 1915 address to the Fiji Society (and therefore the only early account from an indigenous commentator) which also records in detail ceremonial and protocol aspects related to drua and provides detail on construction methods and the relationship of Mataisau (hereditary boat building clans) to the chiefly structures; Laura Thompson's (1940) paper, which includes previously unmentioned reports of saucoko and tabetebete drua and their construction methods; and Paul Geraghty's 1994 work on the linguistics associated with drua. Also of high importance is the 1987 paper of Banack and Cox on the ethnobotany of ocean-going canoes in Lau. While strictly a study of the ethnobotany of camakau, it would appear to apply equally to drua. There are also a number of other papers not reviewed in the earlier exercise. Collectively these articles add considerably to the written record previously compiled. Given this an addendum to the 2011 review paper is currently being prepared.



The information on saucoko and tabetebete drua "types" is critical to our understanding. Many other commentators appear to have worked from the assumption that there is only a single "type" of drua. With the possible exception of the missionary Williams (1848) who describes in some detail construction of drua of the type described by Thompson as "tabetebete" (whose reports are echoed in Haddon and Hornell (1936), other commentators either do not discuss the detail of construction or make the assumption that drua were of the type referred to by Thompson as "saucoko" and similar in construction design to the Ratu Finau exhibit in the Fiji Museum. Thompson's work clearly illustrates that there were at least two radically different construction processes employed for saucoko and tabetebete drua, the former using a single

large hollowed log as its base component; and the latter being multi-planked ships sewn to a scarfed keel and of considerably greater size.

#### 4. CULTURAL KNOWLEDGE

The literature review, outlined in Chapter 3, highlighted firstly, the contradictions in the written record; secondly, the lack of Fijian authorship in that record; and thirdly, that no comprehensive study had been attempted to record the cultural knowledge associated with drua, at least since the work of Thompson (1940).

Prior to undertaking this study, the status of the unrecorded cultural knowledge was largely unknown. The written record generally indicates that no drua have been built for possibly a century, although there are confused references to a drua and camakau revival pre-World War II as a result of global economic depression and falling copra prices forcing outlying islanders to revert to traditional transportation solutions.

There are locally well-remembered references to small drua being built on Ogea and Vulaga and subsequently sailed to Suva some 20 years ago. One of the authors of this paper, Kaiafa Ledua, vividly recalled sailing to Suva on a drua his father had built on Niyau around 25 years ago. Semiti Cama, another of the research team, an acknowledged Camakau building and sailing expert knows well the voyages by his father and brothers from Moce to Suva in small drua in 1992-93 and earlier voyages by his father from the Lau to Tonga which are also well documented in the literature.

Following discussions between key stakeholders, OCACPS agreed that the next research priority was to ascertain the status of the cultural knowledge held by the descendants of the Mataisau, the hereditary boat building clans, of Fiji<sup>10</sup>. Further discussion amongst key informants and members of the Lemaki and Mataisau communities now living in Suva, identified that any traditional knowledge still held was likely to be concentrated in a small group of island communities, primarily on the southern Lauan islands of Kabara, Vulaga, Ogea, Moce, Niyau and Tivia, historically the centre of drua building industry. It was further identified that the key informants in these communities were likely to be limited to a small core of elders, a significant proportion of who were now residing with their extended families in and around Suva. USP agreed to resource an initial collection of oral record from these informants including a field trip by a research team to the identified Lauan islands to be followed by an in-depth talanoa of Suva-based key informants.

A research team was assembled of known Fijian expertise, supported by New Zealand academics. This team included respected elders: Paula Liga from Vulaga (master carver and artist in residence at OCACPS), and Semiti Cama from Moce (acknowledged master camakau builder), and youth; Kaiafa Ledua from Nayau (traditional navigator), and Peni Vunaki from Kadavu (trainee navigator and cameraman). This team took advice and instruction from academics with expertise in oral history recording. Pre-field trip research workshops were held with key stakeholders including Fiji Arts Council, Fiji Museum and iTaukei prior to departure, both to inform them of the project and to seek their input and guidance. Talanoa

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<sup>10</sup> In addition to the Mataisau, drua were traditionally built by descendants of the Lemaki (specialist Samoan canoe craftsmen brought to live in the Lau by Tongans) and descendants of the Mataitoga (Tongan shipwrights who established temporary and permanent settlements in the Lau). The descendants of these families are now heavily inter-related and connected.

was identified as the primary research method with the results, assuming the informants' agreement, to be visually and orally recorded on video and tape.



Field research was undertaken with the research team departing Suva on 5 November 2011<sup>11</sup>. The research team was enthusiastically met by the inhabitants of Kabara, Vulaga, and Ogea with multiple talanoa being conducted at each island followed by selected interviews with key informants. We were advised during this process that it was not necessary to visit Moce as key informants had either already passed away or migrated to Suva. Whilst the research team was en-route to its last two destinations of Nayau and Tivia deteriorating weather conditions forced that part of the itinerary to be cancelled and the research team returned to Suva on 18 November. Fortunately both communities were represented at the subsequent Suva talanoa, an all-day event hosted at the USP lower campus on 30 November 2012. Following the talanoa, a public lecture was given and we were fortunate to have this event opened by the Vice Chancellor USP and the Director of OCACPS. Both the talanoa and the lecture were well attended.

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<sup>11</sup> In keeping with the nature of research, the field trip was undertaken aboard a sail powered yacht that used less than 4 litres of diesel during the trip.



The field research and the Suva talanoa resulted in the collation of a series of talanoa and interviews with the last known holders of cultural knowledge recorded in raw form on digital audio and video tapes. While we cannot claim that the record collected is the sum total of knowledge held by cultural informants, we are confident that it covers the greater majority. The recordings have now been “rough-edited” to remove extraneous material and will be archived and indexed by FIVS with assistance from USP library staff.

Our intention in undertaking this part of the research was to identify whether cultural knowledge still existed and, in the event that this proved correct, to ensure a permanent record was made while key informants were still alive to do so. In this regard we have been successful. The research found that:

- a vibrant and proud cultural knowledge exists, albeit in a few isolated communities and only by a small number of individuals (many of whom who are elderly),
- there is a strong desire by the surviving Mataisau to see their knowledge, skills and heritage reclaimed and invigorated,
- some aspects of knowledge, in particular pertaining to tabetebete construction and sail technology and operation, is not described elsewhere and confirms that the level of technology achieved in the construction and operation of the drua was highly complex and technologically advanced.

In addition there was a “by-catch” of additional and related information, for example about the building of the “Tai Kabara” by the shipwrights of Kabara in the 1980’s (see box on p.17).

The research has highlighted matters of oral knowledge collection process and intellectual/traditional knowledge protection. Both matters are complex and need to be addressed carefully and are discussed further in Chapter 7.

In terms of cultural knowledge collection, talanoa sessions followed normal Fijian protocol and were facilitated by FIVS researchers. Although there were minor differences with each session, the basic interview format was as follows:

- key informants were identified through use of existing networks prior to leaving Suva,
- advance notice of research team's itinerary and purpose were sent to the island communities via the Lau Provincial Council,
- upon arrival on each island, the research team presented sevusevu in accordance with the mana of the project to the highest ranking chief and discussed the purpose of the research and the programme for the talanoa,
- once the talanoa was convened, the research team gave a presentation using PowerPoint and video aids on:
  - the activities of FIVS and voyages of Uto Ni Yalo and the current Pacific voyaging fleet, an overview of the knowledge accrued from reviewing previously recorded historical information on drua and related ship construction and voyaging across the Pacific
  - issues of TK/IPR associated with the knowledge to be discussed in the talanoa. This was accompanied with a request to record the talanoa and subsequent interviews
  - a summary of matters raised in previous talanoa,
- working from a list of leading questions, researchers facilitated the subsequent discussion. N.B. all sevusevu, talanoa and subsequent interviews were conducted in Lauan<sup>12</sup>,
- during talanoa participants were asked to help identify those with the most knowledge for subsequent interview. Both talanoa and interviews were recorded on video and audio digital recorders. Hand held cameras were also used to capture data from informal conversations.

Following each talanoa, the research team debriefed and discussed the outcome of the talanoa, with Kaiafa and Peni interviewing Tu Paula and Tu Semiti on camera and asking them to summarize the learnings from the preceding talanoa.

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<sup>12</sup> The only exception was an interview held with a woman on Vulaga where sail making was the subject of the talanoa. In this instance a kapalagi female sea captain was involved due to her experience in sail making and some parts of the conversation included translation to English to allow technical aspects to be discussed.



On return to Suva, FIVS organized and facilitated an all day talanoa session at the USP lower campus. This talanoa included those Mataisau and Lemaki now resident in Suva as well as observers from relevant agencies and ministries such as FNU, iTaukei, and the Fiji Arts Council. Participants were given the same background presentations as used in the field trip and a summary of the talanoa from the Lau.

A public lecture was held at the USP Lower Campus at the end of the Suva talanoa which was opened by the Vice Chancellor of USP and the Director of the OCACPS. The lecture was well attended and generously covered by local media.



## 5. OVERALL FINDINGS OF THE FIELD RESEARCH

To date the talanoa, interviews and consequent recordings have been done in the vernacular, primarily Lauan dialect. It is intended that this material will only be available for translation with the permission of the Mataisau themselves. For this reason, this report contains only general statements of the information recorded in this phase of research.

- The talanoa and interview process undertaken is the most comprehensive exercise of this nature undertaken, at least since the field research undertaken by Laura Thompson (1940). It is believed to be the first time such research has been undertaken by a Lauan research team speaking in their own dialect.
- There is intense interest in preserving and enhancing knowledge of drua and the practical building of such vessels by the descendants of Mataisau and Lemaki.
- There is existing cultural memory of drua construction and sailing. This includes knowledge of rig construction and sail making. Sailing knowledge includes methods of sail reefing not previously recorded in the literature. The knowledge holders are now a small group of possibly no more than a few score, many of them now of advanced age.
- The distinction between saucoko and tabetebete drua is well known amongst talanoa participants. No participant had ever built a tabetebete drua, although the Tui Vulaga recalled being instructed by his uncles in his early drua building career how to build a tabetebete drua. The Tui may be the only living person with this knowledge and he has offered to command his carpenters to construct a model tabetebete drua under his supervision. The Tui Vulaga said he had built 22 saucoko drua in his life.
- The carpenters from the various islands all agreed that each island had its own style of drua and that drua could consequently be recognised as being from a particular island.
- There are still women who have been taught by their elders to build the sails for drua. There only literature available on this subject refers to “matting” sails. The descriptions of sails collected by the research team detail advanced technological designs and construction of great ingenuity and sophistication.
- There are memories of women camakau sailors and of women’s camakau races being held in Vulaga lagoon.
- The last drua built was a saucoko type built for an American (“Vince”) in the late 1980s on the instruction of Ratu Kamisese Mara. It was called “Tabu Soro”, commenced on Ogea and completed on Vulaga before being sailed to Suva. The drua was operated for a few years as a tourist venture in Suva, Pacific Harbour, and Denarau.
- There was repeated reference to tabetebete drua being used as crypts for Tui and knowledge of the site of at least one of these.
- In the main, the cultural knowledge collected confirms and, in some critical areas (particularly sail-making and tabetebete construction), extends the written record of drua construction. Both of the principal holders of this knowledge are of advanced age. Some aspects of drua culture in the literature, such as the cultural processes recorded in 1915, are no longer known by the participants in this research.



- The knowledge of camakau building and sailing is still practiced on Vulaga and Ogea although there were fewer craft than reported in 1993. It was reported that there is only one camakau still active on Moce. It is not known if others are still active in other parts of the Lau. The annual Camakau race in Suva in 2011, organized by Pacific Blue Foundation, attracted eight entries and was the third year such an event had been held. Children were observed practicing bakanawa (racing model canoes) as an everyday activity on Vulaga.
- Building a drua took a community. While there was segregation of roles (e.g. men making the hulls and rigs, women making the sails), all the community, men, women, elders, and youths, came together to make the magimagi (the ropes and cord that bind the craft together and make it whole).



## 6. RESULTS OF RESEARCH PROGRAMME

The research undertaken to date has achieved a range of results. Firstly, it is arguably the first time that the disparate information relating to drua culture has been assembled in a single place and the data subjected to critical analysis and clear delineation of the various areas that are agreed or where there is disagreement in the historic record.

Secondly, and possibly the most important result, it has demonstrated that cultural knowledge of drua held by descendants of those that built and operated the great drua is not lost. That knowledge is in a fragile and vulnerable state given the now highly limited number of traditional knowledge holders and the advancing years of several of the key informants. The cultural record now strongly indicates that archaeological remains of tabetebete drua may exist. Given their tabu status as crypts, further examination of such sites will need to be carefully considered before it is known whether the archaeology of these should be pursued to confirm the knowledge of tabetebete construction.

Thirdly, the process of undertaking the collection and review of data has resulted in, and contributed to, a growing awareness of the critical place drua culture holds in Fijian society. This is captured in the thoughts of Kabara elders whose stated vision is to see the “sleeping adzes” of Kabara reawakened to once again swing in unison in building new drua in the future. When aligned with other critical developments in this area, particularly the annual camakau races, the camakau building programme of FNU and the expanding use of drua and related culture in performances and other activities of OCACPS, this has the potential to lead to widespread popular resurgence in cultural pride and expression by Fijians and other Central Oceanic cultures of their unique maritime heritage.

The Suva Mataisau talanoa saw the establishment of a critical network of traditional knowledge holders, Mataisau, and Lemaki descendants linked to a wide range of key partners; in particular FIVS, USP and OCACPS, FNU, iTaukei, Fiji Arts Council, Fiji Museum, and Pacific Blue Foundation. The Mataisau have called for this network to be regularly convened to ensure the momentum is maintained.

The research into cultural knowledge has demonstrated and highlighted the importance for such research to be conducted by local researchers (in this case, descendants of the historic boat builders themselves) using local and culturally appropriate methodologies (in this case talanoa). Talanoa has shown itself to be a highly effective and efficient method of discussing, truthing, and recording data of this kind. The target participants all remarked that this was the first time they had been asked for knowledge on drua by “their own” researchers and how much they appreciated all discussion being in their own language and according to local protocol.

The research process has both raised and highlighted some areas of critical concern over TK/IPR (see Chapter 7 for detailed discussion of these issues).

Finally, the research has identified related additional matters, outside of the original brief. The most important of these is the need for modern forms of sea transport that meet the needs of the island communities. Current transport options are inadequate and the now almost universal reliance on fossil fuel and consequent dependence on fuel supply and prices means that current transport options are not tailored to the needs of the communities. Vessel choice is governed by the need to achieve economies of scale and developed around long-range transport routes and externally owned, when what is needed are additional safe and reliable smaller-scale vessels, owned by local communities, able to service the needs of the smallest communities not just the nodal centres. The Tai Kabara (see box below) is an excellent case example.

### Tai Kabara



In informal discussion following the main talanoa, the Mataisau of Kabara were keen for us to hear the story of the Tai Kabara. This vessel was built on the beach at Naikeleyaga village by the Mataisau between 1984-87. The project had been EU funded and was thought to have been initiated as a result of the global oil crisis of the late 1970s.

The plans for Tai Kabara were drawn up by naval architects at the (then) Fiji Institute of Technology's maritime school where the responsible tutor was from Kabara. She was described to us as a 50 ton ketch rigged vessel of classic carvel plank on frame construction with a full vesi keel, secondary bilge keels or runners and cut away forefoot to allow for beach landing. Dakua planking, copper fastenings and cotton caulking were all brought from Suva, the vesi keel, stem, frames were cut on Kabara, as were the other scantlings from a variety of local timbers. All construction, down to caulking of the hull and construction of the standing rigging occurred on the island, with the Mataisau showing us the various tools used in construction.

The Mataisau told that the vessel operated successfully as an island owned and operated trading vessel through the Lau group for the next two decades, surviving two cyclones, before being either sunk or scuttled in Suva harbour just off the yacht club breakwater where her hulk can still be seen at low tide. The memories of the Tai Kabara were obviously "bitter-sweet" for our informants. In their recollection, the vessel, which initially sailed without an auxiliary engine, had worked well while it was in undisputed island ownership. But the installation of a Lister diesel auxiliary saw ownership and management shift to the Lau Provincial Council with related disputes over the management of the vessel and the use of the profits arising from her operation.

It is intended to follow up this recording with relevant external agencies, especially the Maritime School (now part of FNU) and the European Union. The Mataisau were obviously immensely proud of their ability to build the vessel in the first place and would relish the opportunity to build another. If the funding and impetus for the project originally was the high cost of fuel in the early 1980s and a desire to reduce the southern Lau's dependence on this imported luxury, it makes sense to see if the original (or new) partners are interested in having another attempt given today's climate of increasing effects of climate change and regional oil import dependence.

## **7. TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY RIGHTS**

Both the research process and the resultant data highlights critical and complex issues of TK/IPR associated with the project. In the case of drua culture the information needs to be both protected, to ensure ultimate ownership remains with the knowledge holders and their descendant communities; and enhanced, to ensure the results of the knowledge collected can be utilized to see drua culture revitalized for the benefit of this and subsequent generations.

Identifying the various TK/IPR aspects of this research and then determining the best means of protecting and enhancing the same is not straightforward and requires careful consideration of the issues and options available.

### **a) Context**

The research has been conducted in an environment where the TK/IPR issues had already been highlighted by two related developments that occurred in 2011. Firstly, the current fleet of Pacific Voyaging Vaka participating in the Te Mana o te Moana voyages (which includes a Fiji dedicated vessel, *Uto Ni Yalo*) has been experiencing intense discussion between the various Voyaging Societies of the Pacific and the project funders and organizers over ownership and rights to many aspects of vaka and voyaging culture.

Secondly, the Pacific was visited in mid 2011 by a research team from Walt Disney Studios who were considering basing the next major Disney children's animation blockbuster around the stories and history of Pacific voyaging. In that exercise, the Disney team was observed approaching Fijian communities with traditional knowledge of vessel construction and operation with little or no regard for TK/IPR issues. The community talanoa following these visits included intense debate over TK/IPR issues.

TK/IPR has been the subject of ongoing debate amongst Pacific communities for several decades. To date no regional instruments have resulted from this discussion. Fiji has national legislation pending and, when enacted, is expected to be the first Pacific country to formally legislate to protect TK/IPR. In anticipation of this legislation the iTaukei has moved to develop both data storage capacity for heritage knowledge and processes to control and manage data collection, storage and access.

### **b) TK/IPR relating to Pacific Voyaging**

This issue has arisen previously in relation to Pacific voyaging and has been apparent (if un-debated at the time) since Cook first started collecting models and artefacts related to voyaging culture for display in British Museums. Western sailors and explorers have had a fascination with Pacific sailing technology and knowledge since the cultures first encountered one another in the 17<sup>th</sup> century. Part of that legacy is the classifying of Pacific designs under categories such as "catamaran" and "proa", both of these examples being in turn bastardisations of other indigenous cultures' terminologies. Lord Anton's voyages on 1840 included the drawing of a Micronesian vessel which ultimately led to the building of designs by Western boat builders of proa that have ultimately led to world speed record holding designs (see box on page 20).

Post-WWII, a number of initiatives by western sailors/adventurers (including Thor Heyerdahl, David Lewis and James Wharram) saw the launching and exploits of a variety of vessels based on Pacific designs and concepts. There has been a thriving research industry around this subject area, dominated largely by Western academics. A revival in Pacific voyaging and vessel building by Pacific Islanders has been increasing in momentum since the formation of the Polynesian Voyaging Society in Hawaii by Herb Kane and Ben Finney. The Hawaiian experience was characterized by debate over TK/IPR and the role of expatriates versus indigenous practitioners.

At a gathering of Polynesian renaissance vessels in 1993 these matters resurfaced when British catamaran designer James Wharram attempted to join the fleet; the related talanoa claiming he had both captured and perfected traditional Polynesian designs. The matter was more formally debated by the some of the 1993 participants and others, again without real result or outcome, at the “Waka Moana Symposium” in 1996, hosted by the NZ National Maritime Museum in Auckland. Wharram’s designs, which unashamedly publicize their Polynesian heritage, have been sold and built worldwide in considerable numbers ([www.wharram.com](http://www.wharram.com)). Other naval architects have followed suit, resulting in numerous non-pacific designers now offering commercial plans for sale (for examples see: [www.proafile.com](http://www.proafile.com), [www.tacking-outrigger.com](http://www.tacking-outrigger.com), [www.harryproa.com](http://www.harryproa.com), [www.proadesign.com](http://www.proadesign.com)). Few of these pay due acknowledgement to the designers and innovators of the technology and there is no known instance where any commission or other financial contribution from these commercial ventures has been returned to Pacific coffers<sup>13</sup>.

### **c) TK/IPR relating to Drua Culture**

As with Pacific voyaging, most of the technical aspects of drua technology have already been comprehensively captured and exploited by external agents. Again, more often than not there is no acknowledgement of the genus of the designs or the traditional knowledge holders who developed the technological innovation. In terms of written record of drua, this has occurred through an almost exclusively western lens, and has resulted in a largely comprehensive record with little gaps (even if it was disparate and with various aspects under debate). The collection of cultural knowledge under this research project has resulted in recording of additional information. It is unlikely that further research will reveal more knowledge from Fijian sources unless concrete archaeological evidence can be established. This of course, does not mean that examination of other recorded and unrecorded knowledge of other cultures in the drua catchment, (in particular Rotuma, Tonga and Samoa) will not reveal new insights or data.

Given the above, all efforts should be made to now move to formally protect the TK/IPR of drua in favour of its indigenous originators. However this is not straightforward. Discussions were held with iTaukei prior to and after conducting this field research on this critical matter.

It is a clear recommendation of this report that full copies all raw data collected by the project should now be lodged with iTaukei as the custodians of cultural knowledge on behalf of the Fijian state and people. It is also recommended that copies of all data be returned to the

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<sup>13</sup> In one instance at least the debt is described in reverse. At the 1996 symposium Wharram stated “If I was paid by the Pacific peoples for the publicity I’ve given over 40 years, I’d be a rich man” (Bader, McCurdy & Chappel, 1999:183).

originating sources i.e. the communities of the descendants of the Mataisau and Lemaki and a further copy lodged with OCACPS as the nominated Heritage Hub for the Pacific. This reflects the multi-cultural nature of the drua.

The origin of drua design (including of course the camakau – called hamatafua in Tonga and the flying proa throughout Micronesia) is contested by the various cultures involved. The written record is also in dispute, and there is currently no clear means of determining whether a single culture can claim to be the design originator, or how the innovations of several cultures were amalgamated into an ultimate drua design.

It is not even clear just how far the drua catchment extends. It must be considered to include Fiji, Tonga, Samoa, Rotuma, Uvea, Futuna, New Caledonia, and most of Micronesia. It may also include Tokelau, Niue and parts of the Cook Islands.

It is not known whether the TK/IPR to any or all aspects of drua design and culture reside with any individual culture or even an identifiable subset of cultures. It is reasonable to assume at this juncture that the TK/IPR must reside with the catchment of cultures collectively.

A possible solution would be to collectively copyright the drua design in the name of all these cultures but this approach would require the various cultures to agree on this step, agree on a commonly acceptable repository and most probably agree on a mutually acceptable knowledge holder. The additional step could be taken of placing the copyright in the name of a suitable eponymous ancestor (or deceased person held in sufficient mana by all those cultures).

Given this complexity, a separate formal academic paper covering this subject is to be prepared for publication in an appropriate journal. The project reviewers have contacted several sources of known expertise in this subject to collaborate on this paper.

In the interim, the Recommendations Section (Chapter 9) suggests a number of steps that should be implemented immediately.

From <http://en.wikipedia.org/wiki/Proa> (NB: none of these websites mention the Pacific origin of their design).

In March 2009, two new sailing speed records were set by vehicles based on the proa concept, one on land, and one on the water.

On March 26, 2009, Simon McKeon and Tim Daddo set a new C class speed sailing record of 50.08 knots (92.75 km/h) over 500 meters in the *Macquarie Innovation*, successor to their previous record holding *Yellow Pages Endeavour*, with a peak speed of 54 knots (100 km/h). The record was set in winds of 22 to 24 knots (44 km/h), and came close to taking the absolute speed record on water, currently held by *l'Hydroptère*. Conditions during the record setting run were less than ideal for the *Macquarie Innovation*, which is anticipated to have a top speed of 58 knots (107 km/h).[1]

On March 27, 2009, Richard Jenkins set a world wind-powered speed record, on land, of 126.1 miles per hour (202.9 km/h) in the *Ecotricity Greenbird*. This broke the previous record by 10 miles per hour (16 km/h). The *Greenbird* is based on a one-way proa design, with a long, thin two wheeled body with a third wheel to the lee acting as an ama. The ama, which is in the shape of a wing, provides a significant amount of downwards force at speed to counter the heeling force generated by the high aspect wing sail. [2][3]

1. "New World Speed Record: Macquarie Innovation breaks 50 – hits 54 knots". Sail-World.com. Sat 28 Mar 2009 GMT.
2. Tony Borroz (March 27, 2009) "Freaky Speeder Rides the Wind to World Record". <http://www.wired.com/autopia/2009/03/british-man-set/>
3. "Greenbird official website". <http://www.greenbird.co.uk>

## **8. ARCHIVING AND ACCESSING RECORDS**

### **a) Literature Records**

The records of the literature review, the compendium and review, are currently accessible through web and PDF files<sup>14</sup>. These documents include full bibliographic references for all sources and URL links for web sourced information. The review of written information has been prepared as journal article and is currently with reviewers of the Journal for the Polynesian Society, Auckland University. It is intended to continually update the compendium as new sources of information come to hand as part of FIVS's ongoing research programme. The additional information will be periodically reviewed and presented as addendum papers to the original journal article.

The research has also resulted in a sizable collection of historic images (reproductions of etchings, sketches, drawings, photographs, etc). FIVS is currently in the process of archiving these digitally so they can be stored on the internet. All the written records and images displayed to date are all ready in the public domain and so this data does not require protection and can be open sourced. It is also intended to lodge a digital copy of this information with the archivists at the USP library as a final backup precaution. Where copyright issues for images apply, the holders of copyright will be contacted to request permission to duplicate images for research and educational purposes.

### **b) Cultural Knowledge Recorded under this Project**

This form of data collected to date is currently held in two forms, digital and hand written notes. The digital record is further divided into video

The data has been rough edited to remove test segments, extraneous material, etc but has not had any content of the interviews with knowledge holders removed. The files are large, approximately 69GB. It is currently presented in date order of recording but the digital manner of storage allows re-sorting into a number of combinations. Generally speaking, there has been duplicate recording of talanoa and interviews where possible. A fixed video camera with internal microphone; high quality audio recorder and two handheld cameras capable of still, video, and audio recording were used in various combinations. The data is currently backed up on a dedicated FIVS hard drive with a copy held on a separate server (as a safeguard). The data has been stored in compatible formats to the iTaukei database.

It is now proposed that the data be transferred to three repositories:

- iTaukei - database where access is via established Ministry protocols,
- OCACPS - with the data stored in the Pacific Collection, USP library and accessible only with the written permission of the OCACPS Director, and

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<sup>14</sup> [www.sailingforsustainability.org](http://www.sailingforsustainability.org) and [www.fijivoyaging.com](http://www.fijivoyaging.com)

- the Tui of each of the island communities - as video data of the talanoa and interview sessions in DVD format.

It is further proposed that each electronic file be tagged at the commencement with a statement that it is not be translated or reproduced without the consent of the Mataisau.

If the talanoa of Mataisau is continued on a regular basis (see Recommendations Chapter 9) that would be an appropriate forum to discuss issues of access in more detail and to consider and recommend approval for access to individual requests to access the data.



## 9. RECOMMENDATIONS

This report covers aspects of the research into drua and its related culture collated by FIVS to date. The FIVS programme is the start of what is envisaged as an ongoing and expanding programme. The following recommendations are framed accordingly and aimed at all those with an interest in seeing drua and its culture preserved, protected and enhanced.

### a) Preserving the Knowledge

- Revisit the Tui Vulaga, in particular, to discuss construction of a 2-span tabetebete model, and for further in depth talanoa and recording of his knowledge.
- Construct a 2-span model tabetebete drua.
- Construct a working model (up to 30') of a saucoko drua.
- Seek collaboration of Fiji experts on culture – masi, weaving, meke, carving, etc.
- Ask Fijian elders to contribute – sayings, photos, recollections, stories, etc.
- Widen the catchment of research – Tonga, Samoa, Rotuma being first targets.
- Hold workshop for practitioners in cultural practices associated with drua, e.g. sail weaving, magimagi production.
- Formally recognise the experts listed in Appendix 2 as Living Human Treasures.

### b) Protecting the Knowledge

- Keep data recorded in Lauan in an un-translated state. It is reasonable to assume that those who are most likely to need access to this data in the short term are going to include Lauan speaking drua builders and operators.
- Deliver copies of all the raw data collected back to the Mataisau and Lemaki participants and knowledge holders.
- Lodge copies of all raw data collected with iTaukei and OCACPS. The data lodged with iTaukei will be protected by the general protocols and processes established by the Ministry for this purpose. The data lodged with OCACPS would be held by the Pacific Collection of USP library. Discussion as to how this can best be effected are currently ongoing with USP library staff.
- Review the above in light of recommendations from the paper on TK/IPR.

### c) Enhancing the Knowledge

- Maintain an ongoing talanoa of Mataisau and Lemaki knowledge holders, bi-monthly meetings.
- Maintain a network of key stakeholders and seek collaboration in a coordinated programme to build and operate traditional and modern drua in Fiji and wider Oceania.

- Organize workshops, preferably as part of a coordinated programme of activity, of sail weavers, carvers and sailors.
- Establish a formal network of drua cultures. This could be spearheaded by FIVS (which include Viti and Rotuma) and OCACPS, beginning with the Samoan Voyaging Society, assisting to establish a Tongan Voyaging Society, and seeking partner organisations in Futuna, New Caledonia, Kiribati and other Micronesian centres.
- Establish an Oceanic centre of excellence for “drua culture” as part of OCACPS.



## **APPENDIX 1. LIVING HUMAN TREASURE**

The following are the key informants to this research.

### **Kabara**

Apaitia Seru (74 yrs old)

Taniela Gucaku (56)

Jitoko Filipe (65)

Ilaitia Rika (67)

Ilaitia Yalimawai (69)

### **Vulaga**

#### **Naividamu koro**

Waisake Gauna (78)

Sailosi Rarawa (64)

Jotame Vusoniua (76)

Losana Vusoniua

#### **Muanaicake koro**

Ratu Taniela Bese (84)

### **Ogea**

Sili Cabe (73)

Jimilai Koto (62)

Inoke Volau (73)

Jone Vakaloloma (77)

Solomoni Livi (68)

### **Korova (Moce)**

Semiti Cama (68)

Sakiusa Veikauyaki (66)

### **Suva Talanoa**

Inoke Galu (Kabara)

Inia Marau (Kabara)

Filipe Rasi (Kabara)

Jotama Cama (Vulaga)

Setareki Qase (Vulaga)

Paula Liga (Vulaga)

Akaripa Nakiti (Ogea)

Joji Marau (Ogea)

Koro Marau (Ogea)

Namoka Mateyawa (Tuvuca)

Macawa Tabu (Nayau)

Sekope Cama (Nayau)

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