

**“Identities, territories and
agricultural practices:
some landmarks for
the preservation of
local communities’
Heritage in
East Timor”**

**2015
OPERATIONS
REPORT**

PALOC

PATRIMONES LOCAUX ET GOUVERNANCE

“Identities, territories and agricultural practices: some landmarks for the preservation of local communities’ Heritage in East Timor”

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FIELD OPERATIONS, 2015

Suai region (district Covalima)

Missions from 21/5/2015 to 28/5/2015:

D. Guillaud, L. Emperaire, J.-C. Galipaud,
B. Crespi (IRD)

Balibo region (district Bobonaro)

Missions from 12/11/2015 to 16/11/2015:

D. Guillaud, L. Emperaire (IRD),
A. Péquignot (MNHN)

Vemasse region (District Manatuto)

Mission on 29 and 30/04/2015 at the
Vemasse fort. J.-C. Galipaud and
team of the Archaeology department of
SEAC.

Atauro region (District Dili)

Mission from 29/5/2015 to 30/6/2015:

D. Guillaud, L. Emperaire, J.-C. Galipaud
(IRD)

Mission from 8 to 25/08/2015:

J.-C. Galipaud (IRD), R. Kinaston
(Univ. Otago), L. Smith,
F. Abilio da Silva (SSAC).

Local team: Luis de Arojo,
Cornelius Soares,

Moses da Sousa, Paul da Silva,
Joakim da Sousa, Satraki da Silva,
Samuel Alves, Jose Soares,
Parake da Sousa

Mission from 18/11/2015 to 28/11/2015:

D. Guillaud, L. Emperaire, J.-C. Galipaud
(IRD), A. Péquignot (MNHN), K. da Silva
(University of Brasilia)

INTRODUCTION

CONTEXT

This project lies within the framework of cooperation between the Secretariat of State for Art and Culture (SSAC) and the Institute of Research for Development (IRD) relating to “Identities, territories and agricultural practices: some landmarks for the preservation of local communities’ Heritage in East Timor”.

In 2012 and 2013 we worked mainly in the Balibo region (west) on cultural chronologies, territoriality and on past and present uses of the environment, in order to:

- Establish the timelines of human occupation in areas selected for this research,
- Identify the places, sites, knowledge, history and other elements that are significant for the understanding of identities and territories,
- Discuss the elements which are potentially invested with a heritage dimension, in order to discuss their preservation and valorisation,
- And finally to participate in the training of local volunteers to complete the inventory, preservation and enhancement of the national cultural heritage.

At the end of 2013, we extended the research begun in Balibo to other areas in order to have elements of comparison in a variety of environments: the island of Atauro to the north and the region of Suai to the southwest were surveyed.

In 2014 a request for cooperation from the NGO Timor Aid (as part of their project funded by the Prins Claus Foundation) on the themes of our initial project has led us to extend the approach to the Suai area to the southwest of the country. This project aimed at assessing the impact on local heritage of an extensive oil development project, the Timor Gap project, involving the displacement of habitats and assigning traditional areas to industrial uses. The approach has also stretched to the study of ancient and present day agro-biodiversity and considered the valorisation of heritage for the benefit of local populations.

This work has been carried on during 2015 in Suai, Balibo and Atauro, with the development of a tripartite cooperation France - Timor Leste - Brazil, including hosting a Brazilian doctoral student funded by IRD on the Timorese field, and the participation in the last mission in November 2015 of an anthropologist, professor at the University of Brasilia, Kelly da Silva.

Furthermore, a cooperation agreement with the NGO Timor Aid has been signed at the end of 2015. The team is moving towards the valorisation of the first results in consultation with local populations, and is engaged in the search for external funding to sustain the initial actions.

Work and training in archaeological techniques were led by J.-C. Galipaud in Vemasse in the context of cooperation with the Secretariat of State for Art and Culture of East Timor.

NATURE OF WORK UNDERTAKEN

SUAI REGION

The mapping of sacred houses that we carried out in 2014 from Google Earth images and field interviews was handed out in November 2014 to village and customary heads of Holbelis, and work continued in 2015 in two directions:

- The team continued its surveys on ancient settlement sites included in the village current territory, and carried on interviews about the nature of lineage houses, their origin, their functions; on the identification of heritage as perceived by local communities (participative approach).
- Narratives were collected on some ancient sites (Fetsawa) and on the myths attached to them.

A first work has been conducted on agro-biodiversity; it consisted of interviews about the ancient and current plants, of visiting and surveying fields, of study of landscape structure, of a preliminary inventory of crops, of interviews on agrarian rituals and altars.

Meanwhile, Brunna Crespi conducted a four months field trip between May and August in the region of Suai, and is undertaking another field trip from December 2015 to February 2016, working on the local representations of “sacred” and on the management of the ceremonial area of the Holbelis and Fatuisin communities, and on the changes brought to the original organization of societies and to their space by the industrial development underway (oil project).

BALIBO REGION

In parallel with archeology and the excavations conducted in 2013 and 2014, we continued working in 2015 on the history of the lineage houses of Balibo locality.

We have in this perspective established a dialogue with customary leaders to organize in July 2016, with their consent and in accordance with ritual procedures they have themselves defined, the collection of knowledge about the history of the houses in Balibo and about the mythical or biogeographical origin of cultivated plants. This has required several meetings between researchers and local communities to discuss the proposed approach, the interest of such collection and its possible forms of valorisation.

Other sites related to the history or to the archeology of communities were identified and some have been visited (fortified sites of Fatu Lulik, Moritau, Dua Fatuk Sanirin).

In terms of knowledge of biodiversity and landscape structure, an inventory of tree species present on the sacred sites or in the sacred forests has been started. A sacred forest site was visited (Tahalatun) with the collection of the different features and elements of this site, including the rituals that take place there, for an understanding of the function of these sacred forests in society and in the landscape.

ATAURO REGION

The first works begun in 2013 in this region are of an archaeological nature. In 2014, surveys were continued and the excavation of the Lepu Kina shelter in Arlo was initiated. In 2015, the rock art shelter of Aleti Tunu Bibi in Atekru was excavated.

The main objective of the excavation was to evaluate the antiquity and assess the preservation of the Aleti Tunu Bibi rock shelter, discovered in 2014 during our first survey of Atauro. This small rock shelter is of historical interest because of the presence of some red and black paintings on the walls. Beside, the site offers a touristic potential for the village of Atekru and its region.

The mission of May 2015, associating archaeology, ethnobotany and geography, has allowed us to identify the first elements for the recognition of agrobiodiversity on the west coast (Atekru, Kitali, Adara, Arlo, Macadade). Two main themes were discussed, the current crop diversity and the diversity of plants formerly used as staple). This mission also confirmed the importance of some narratives of the oral tradition for the understanding of the social and territorial organization of the island.

The mission of November 2015 allowed a deeper dialogue with local communities. The exchanges with the inhabitants in the Arlo community helped collect local representations of the territory (including the study of place names and the analysis of narratives attached to the various places that make up this territory) and representations of cultivated plants. This last theme as well as that of fish caught for everyday consumption or for sale were illustrated by a series of drawings by Antero de Araujo, a resident of Arlo.

During the mission, the region of Macadade was also visited and a collection of oral tradition and of history was initiated. In the wake of these reports, several fortified sites were visited and sketched (Kota Ili, Erleti near Macadade, Ilingura near Tonglory). Our presence at Macadade at the weekly market on Wednesday was the opportunity to list marketed agricultural products, and also and more importantly, to understand a recent experience of valuation of heritage (basketry and weaving of *Corypha utan* fiber), with a reconstruction by three elderly women of the ancient knowledge associated with weaving, and with the creation of a still modest commercialisation sector. Two interviews with the teacher of the village and with the village head were conducted on agricultural biodiversity and related knowledge.

The walk along different paths (Arlo-Beloi, Atekru-Tonglory, Adara-Arlo) and the car drive also allowed us a better understanding of how the large units of the local landscape were organised, of what were the impact of human activities, especially of goats herds, today raised in an extensive way throughout the year.

2015 RESEARCH RESULTS



Figure 1 : View (TP1) of the excavation
in the Atekru rock shelter

Archaeology and the history of settlement

1. Characterisation of the Atekru rock art site

Two archaeological test pits of about 2m x 1m (Figure 1) were dug until the stalagmite floor of the shelter. In the second pit, near the entrance, several occupations were highlighted by shards of obsidian and flint but also by marine shells.

The dating of several fragments of *Tridacna* shell indicates that this shelter has been used for the first time 18,000 years ago and reused about 8000 years ago. The most recent archaeological level, comprising pottery, dates back around 1000 years. Fragments of red and yellow ochre in the middle levels suggest a date of about 8,000 years for the rock art.

Most drawings are monochrome, red, but at least one example of black pigment is

present. The motives have been grouped by panels (5 in total) to facilitate the description and study. The most frequent motive (Figure 2) is a zoomorphic figure with an oval shaped body, four appendices and sometimes a tail. They probably represent crocodiles or lizards and some can be large marine mammals.

Other motives include geometric patterns and a series of lines or dots which sometimes follow calcite ribbons. The only black drawings are two similar zoomorphic representations with red and charcoal drawing depicting a boat.

The Aleti Tunu Bibi site will be further studied in the year to come and the steps for its preservation assessed.



Figure 2 : Red ochre motives of lizard or crocodile. Aleti Tunu Bibi rock shelter in the village of Atekru.

2. Identification of historical and archaeological sites

The interviews followed by land surveys have allowed us to locate several old occupation sites in the various regions: ancient settlement sites, defensive sites, localities mentioned in the oral tradition and to be surveyed, etc. Some of these sites, especially two defensive sites (kota), have been outlined with a GPS and with sketches locating singular elements within (Figure 3 and 4).

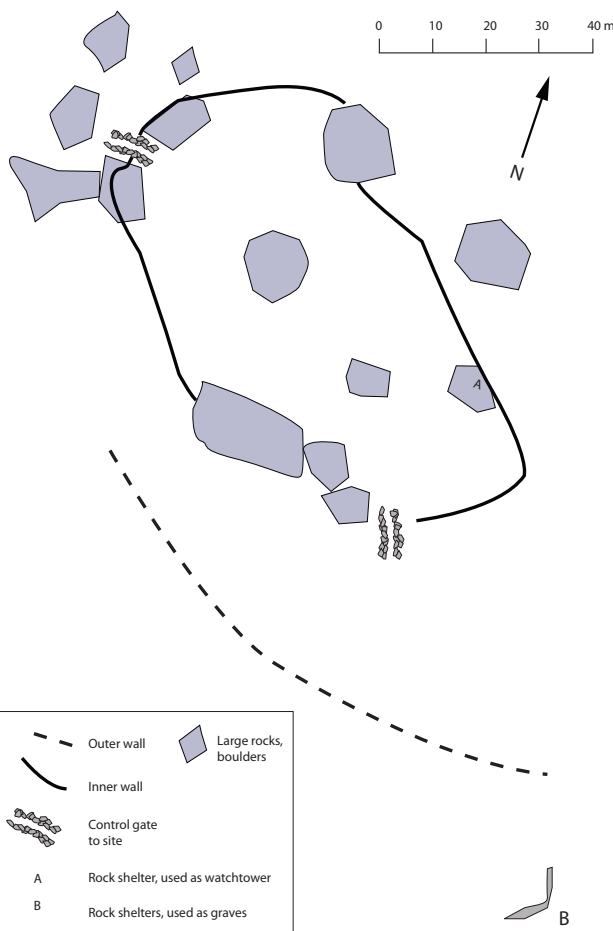
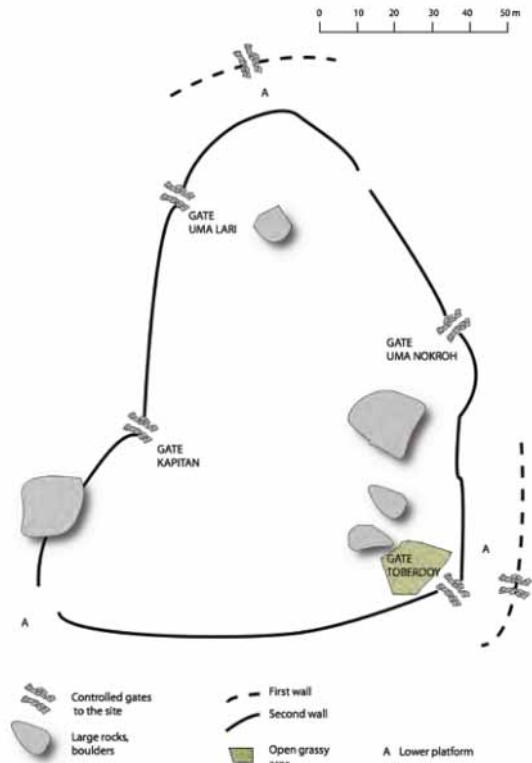


Figure 3: GPS sketch of Kota Ili site near Makadade. This site located to a limestone massif is documented by oral tradition. It has a double outer wall, following in places the natural bluff, and which was not fully sketched with the GPS. Four gates (passages between two narrow walls of stone) allow access to the inside of the site, each gate being used by one of the four lineage houses occupying the site. The site is covered with forest; southeast of the site (near the Toberdoy door), a meadow is presented as a ceremonial space, dancing place etc.

Figure 4: GPS sketch of Ilingura site near Tonglory (Makadade). This site atop a limestone has a double wall, the outer enclosure being hardly noticeable. Two gates (passages between two narrow walls of stone) lead within the site, which is covered with forest. In (A) a rockshelter overlooking the northern side is suited to the watch. Below the small limestone rockshelters in (B), some cavities closed with walls of stone contain burials.

3. Archeogeography : The different phases of the settlement according to oral tradition

Research on the field and interviews allowed to complete the history of settlement and the understanding of the organization of the territories in the different regions that were surveyed.



Figure 5: Limestone hills around the Tasi Metan pond, Balibo region

In Balibo and Leohitu, detailed information is currently subject to obtaining the customary authorizations for the “speech opening” but already a series of phases in the history of settlement emerges, still needing to be confirmed by the interviews to come in 2016:

- A phase described by oral tradition as one where people settled in caves and used foods from the spontaneous category (leaves, fruits, tubers), in all cases foods that were very different from the cultivated ones that were introduced thereafter (see interviews from November 2014).

- Several following phases see the introduction of new foods originating from outside (plants of the Papuan area like bananas, sugar cane, etc. on one side; plants from the Austronesian domain like cereals - rice - but also from the American domain like corn). These foods are tasted and appreciated, and are adopted, as are assimilated the groups who introduce them. Sometimes these new foods are acquired through contact with other groups (borrowed from the Tetum populations, which the oral tradition of Leohitu describes as cultivators of corn and rice, whereas these two cereals are introduced by an individual in the tradition of Balibo).

This introduction of cereals is important because in the oral tradition, it is often associated with the setting up of boundaries between groups; present-day subregional differentiations, in this case that of the language group Bekais, could find a distant origin in these early land markings related to the beginnings of agriculture.

- A later phase sees the people of the region gathered on a few defensive sites such as Bai As, near the Tasi Metan pond. It remains to be seen whether this concentration of people on a steep hill hard to access corresponded to a lasting or a temporary form of settlement. Elsewhere in Timor, similar defensive sites are dated to the beginning of the second millenium, around 700 years ago.

- At a later time, different lineage houses originating from this initial Bai As site scattered over several hills in the area, corresponding to a spatial dispersion pattern for the needs of agriculture, with

probably a relative autonomy of each lineage house. The information suggests that this pattern was the one prevailing at the time of the Portuguese settlement in the region. The Portuguese period, characterized by the building up of a fort on a hill north of the area, did not seem to have affected these settlement patterns.

- A recent historic phase, the time of Indonesian occupation, sees populations being gathered by force in a village center and along transportation routes. Most of the ancient sites atop the hills were abandoned under the military and administrative pressure; a few still remain today, some lineages maintaining their lulik houses on these sites, with the presence of guardians (Fatu Lulik, Beluwai etc).

- The current period sees little change to this pattern, except the sporadic return of some families in remote hamlets, usually for a specific activity (livestock).



Figure 6 : Site of Fatu Lulik, on a hilltop, Balibo.



Figure 7 : Two altars on the “Old Holbelis” site;

In Suai, the succession of occupations can be seen as a gradual descent of Bunaq speaking populations in the plains occupied by the Tetum speaking groups, leading to different combinations between these two components.

- The origin of the Tetum speaking groups is mentioned in narratives such as that told by Anakletu Amaral in Fatu Isin (May 2015): The story depicts two “princesses” weavers leaving on the seaside at Fetsawa, South of Beko (now a vast mangrove lagoon). These princesses discovered by the sound of their looms turn away two “princes” of the interior because they have “thick feet”; disappointed, the princes provoke a flood engulfing the village of the weavers, while the latter, in return, send a marine wave whose scars can still be seen, says

the legend, in some places in the interior. After this confrontation, the princesses reverse to half woman, half-crocodile beings and various episodes explain how they are brought to Suai, and afterwards again, handed over to the sea. This type of story could evoke the confrontation of two societies, one “terrian”, the other one coming from the sea, marking the origin of the constitution of the Tetum society.

- Other periods of the occupation of the region by the Tetum still need to be analyzed from the inventory and the study of ancient sites of existing villages and from the collection of historical information:

- Manu Lima Nubada, two kilometers from the seaside and bordering a watercourse, would be the former site

of part of the lineage houses of Fatu Isin (Kamanasa). On this site which is sacred today, and which has been abandoned at the time of the Manufahi war (1912), we find both remains of chinese vessels, local pottery shards, traces of graves, and traces of older lithic industry not necessarily related to the most recent occupations.

- The “old Holbelis”, occupying a defensive limestone relief from the foothills a few km from the coast, is a previous Tetum settlement (information from the Bunaq).
- The current Holbelis settlement, in an open landscape of plains on the edge of a stream, is also a former site of Fatu Isin. One finds there a banyan tree whose sucker was planted in the center of the present village of Fatu Isin; residents were displaced by the Portuguese trying cotton crops on that location.

- The arrivals of Bunaq group appears to be relatively recent. The Tetum (information from Jorge Amaral, Samfuk) explain that they have initially enticed the Bunaq to come in order to drive the honey production, wax and sandalwood to the Tetum counters of

the coast, which evokes the trade period between the 17th and the 19th century. The Bunaq of Holbelis, meanwhile, say that they originate from Oburo and have held several defensive sites like Saneti before having been “settled” by the Tetum at the place of one of their ancient settlements: the old Holbelis.

From here, but still retaining this defensive site, the Bunaq swarm in the 1960’ (“the times of the Portuguese”) in the coastal plain to extend their crops, probably in seasonal settlements. In 1975 the population from scattered hamlets are gathered by the Indonesians on the current site of Holbelis, which would have been a cultivation area of the old Holbelis, and previously, also, an ancient Tetum site (see above).

The history of settlement highlights the complementarity of the two groups initially engaged in activities related to trade deals, and that led to a kind of interculturalism in the Suai region: Bunaq have adopted Tetum plants, place names and words in their vocabulary; while Tetum, which remain throughout the region “masters of the land”, have adopted the matrilineal and matrilocal practices of the Bunaq, with which alliances are thus facilitated.



Figure 8 : Sacred place, banyan tree in Roek, a hamlet in Old Holbelis ;



Figure 9 : An altar overlooking the plain, on an old settlement site from the Indonesian period.

In **Atauro**, information collected fall into different categories:

- The first one is cosmogony. An interview conducted in the region of Makadade brought up a long mythical narrative explaining the origin of the most important elements of the local culture and of everyday life (informant Antoni Comacose, Tonglory). The story begins on the small island of Manukoko where the two sons of a god, Aisa'an, and of a fish first transformed into a pork, and then into a woman, are opposed in different events related to the genesis of this insular world. Through an initiatory journey, they name the island places; and then successively appear: foods (millet), fishing instruments (bow and arrows), betel, women, Canarium trees, textiles and iron. Other cosmological narratives, although more truncated, explain how men and women lived in caves to escape the heat of a sun much warmer than today (Arlo), etc.
- Another category also includes myths, but related to the origin of a specific group. One evokes the arrival in Kitali of two black birds, turning into men and women, the ancestors of a present local group.
- Other types of narratives refer to the peregrination of mythical characters, such as the Woman Without Right Ear (Kelikmau Ingapa). The only survivor of the massacre of Ataknai in the highlands of Makadade (Carlitos Soares Maria, Abraao Comacose, etc.), she finds refuge overnight in the cave of Atekru, where she would have buried her "magic" before continuing along the coast up to Akrema. This type of narrative evokes important places, connected by the path of a founding character, and creates territoriality networks between remote areas of the island.
- Similarly, but at village level (Arlo case), we met narratives describing the underground journeys of characters entering in a cave to come out in another



Figure 10 : Entrance gate in the fortified site of Kota Ili, Makadade.

one, the underground distance being measured by the number of dry coconut palms that needed to be burned as light in the dark along the way. Two paths mentioned in the village evoke an antagonistic relationship between close settlements: a character from the Elamua cave emerged in the Watupo Dua cave overlooking the sea, and had to go back quickly for fear of being found by local inhabitants, and killed and eaten by them; but in the meantime the rock has closed; the sun in its circadian course eventually reopened the passage. The other story of interconnecting caves connects Lepukina (above the excavated shelter of the same name) and a sinkhole at the top of Iliara hill, etc. The meaning of these narratives remain to be explored.

- Other narratives are more historical in nature. They describe the "wars" among neighboring settlements (Tonglory against the people of Atekru, Makadade against Arlo, etc.), and allow to contextualize the fortified sites which then served as a refuge. Antoni Comacose specifies the conditions of these wars, which occurred every year, or even implied a specific season, and which lasted only a few days or weeks, until the death of one or two enemies satisfied one of the parties who then declared "victorious" and

stopped the fighting. - The last historical narratives recount the arrival of religion through the priests and catechists. The island of Alor, in the Dutch East Indies, is the place that has most probably influenced the expansion of the Protestant religion in the island. Catholicism, limited to 80 Portuguese and more recently Italian missionaries.

It is important to distinguish between these different types of narratives in Atauro as they describe different conditions of land occupation and appropriation:

- In addition to explaining the origin of the world, the mythical narrative is a way to legitimize the ownership of a territory and the access to its resources. Knowledge of specific place names and, above all, a history that gives meaning to those names, give consistency to a set of locations and link them to a particular group. So far the land system is not based upon land titles, and is characterised by many disputes, and in this context myths are a

real deed. The cadastre began this year a land survey in the island of Atauro, and some of the narratives mentioned concerned areas with many disputes. Reactivated in this context of tension, they are to that extent a useful input to understand the link between tradition and modernity in this island society.

- Historical accounts suggest special conditions for human settlement. The standard seems to have been scattered settlements (as is currently the case in the Makadade region), seasonally gathered on a defensive site for a war episode, then at the end of it redeploying in the landscape for the time of cultivation. Religion is the first to modify this scheme: people come together one day a week for Mass (Marcos Martins, Arlo) and tend to cluster around the temple. The Indonesians, bringing together all populations on areas near communication routes, and encouraging the development of monotheism, have supported Christianity in this concentration of people around temples.



Figure 11 : Ilingura site near Tonglory.

Agro-biodiversity and vegetal landscapes

1. Balibo: Plant diversity of landscapes and sacred forests

Two topics are discussed here, the sacred trees and forests and the agro-biodiversity. Data were collected primarily from Orlando Carvalho, one of the lineage elders of Balibo, and need to be confirmed by other informants and by bibliography analysis. For now this first collection of data opens more questions than it gives answers.

Six sacred forests, ai tuan (T) or ai matuak (Bk), “old forests”, have been identified and spotted on the map (Taha Latun, Moritao, Bui Lekum, Belola, Fatu Kelaran, Be Ain). The first forest covers about thirty hectares on a hilltop and is shared between the sucos Balibo and Leo Hitu ; it is perfectly delimited in a degraded landscape formation overgrown by *Chromolaena odorata* and *Lantana camara*, and where some small sandal trees can still be found on the upper part. The forest itself is semi-deciduous and reaches a height of about twenty meters with a jointive canopy, and the diameter of some trees can be more than 1 m (banyan for instance). The undergrowth includes many creepers (one in the center of the forest is the main ritual place) and one finds in some parts *Coffea robusta* planted “by a Portuguese” (namely Bernardo Pereira, who was a Balibo administrator).

The second forest that has been surveyed, Moritao, extends on 5-6 ha at the northeast of Balibo and belongs to another geomorphological unit, characterized by the presence of a deciduous forest, also located on the top of a hill and surrounded by dense shrub less eroded by human action than the previous landscape.



Figure 12 : Taha Latun sacred forest, Balibo



Figure 13 : Sacred place in Taha Latun sacred forest (banyan tree), Balibo

The third forest, Dua Fatuk, is not sacred, but is nonetheless a place of worship comprising three stone altars. It exhibits the same facies than Moritao, a deciduous shrub-tree formation with, some banyan trees extending on about ten hectares on the top of a hill.

The presence of these fragments of forest, which are clearly visible in the landscape, questions the links between the field of “sacred” and the dynamics of a highly anthropised landscape: what are their mythical and environmental stories? What are their ecological (protection of temporary watercourse, regulation and conservation of land) and their economical functions (timber resources and various species, refuge area, territorial marker ...)? What are the prohibitions that apply to them, such as hunting (and would this prohibition be linked to the ancestors who bred specific animals)? To what extent these forest fragments share a common history - they are considered as “sisters” - and what are their access rules, what rituals are they submitted to (Latun Taha is where rain ceremonies take place)? What is the landscape organization linking sacred forests and old settlements, that were located on the hilltops before the Indonesian regime resettled the habitat

along the roads? Some first answers will be provided by mapping and by characterization of these enclaves on satellite images.

The banyan or nunu (Bk) (*Ficus spp*) is one of the key species in these forest areas and they are part of a detailed classification with five appointed morphotypes: nunu bei (revered) nunu sai Likan (cow ear), nunu ulis (with small fruits), nunu Abato (that grows in the stones), nunu ladekor (snapping leaves). All of these have different statuses: the first is always sacred, the other may become sacred if they are associated with ancestral remains or if they are near a water source; the extreme point of the gradient being a *Ficus* devoid of any sanctity (because of its location or of its species?). Alongside the banyan, other species were cited as sacred, their collection prohibited even as dry wood, and these species are linked to warfare: ai bei and ai mutim were used to make sword handles, ai besi was reknown as hardwood.

All these different information, however scattered, due to language and time reasons, allow us to identify a few broad categories of plants (plants of war, wood, ancient foods ...).



Figure 14 and 15 : Dua Fatuk site (old settlement site and altars), Balibo region

2. Atauro: diversity of plant landscapes and resource uses



Figure 16 : To'o in Arlo

The context of the Atauro island is marked by two dynamics:

- Starting fifteen years ago, local development operations carried out by associations (Na Terra permaculture, ecological awareness, women organization through the promotion of tais production...);
- The prospect of touristic development, which raises issues about the interaction / negotiation with local people, and which questions the traditional land tenure, particularly on the coast, and also the forms of conservation / valorisation of local knowledge and heritage that are associated with biodiversity and agro-biodiversity.

Collected information comes mainly from Marcos Martins, head of Arlo village, Bernardo and Teresa de Araujo (Arlo), and in Makadade Carlito Soares Maria, village head and Rafael Fernandez.

The island, formerly known as “Goats island”, is characterized by a great diversity of vegetal landscapes in which appears a gradient of human impact: steppe-type

formations on the slopes and in some coastal areas; savannah woodland with *Eucalyptus alba* formations and dry shrub-tree formations also on the slopes; forest formations in incised valleys or on mountain tops in the southern area. The agricultural landscape is characterised by impressive stone-clearing and walls construction, and by the presence of fields or to'o on which rocky outcrops compete for space with a few pockets of arable land. Slash and burn agriculture on the island is therefore constrained by both climatic conditions of a semiarid type (dry season from July to October-November), low availability of arable land and biomass, and apparently low organic matter content in soils. Fallow in *Imperata cylindrica* (alang-alang or dutman lai in Tetum) has a central role in the provision of stubble for rooftops.

The to'o (kebun or gardens) are in most cases attached to the houses, each family cultivating one or several to'o with a surface ranging from 200 to 900 m² (observation from 5 GPS-surveyed plots from a family in Arlo). The landright on the cultivated area



Figure 17 : Fruits of *Borassus flabellifer* (akadiru)

is distinct from the right on ligneous plants that are grown on the same plot, meaning that coconut palms, bamboos and ai lele belong to different owners, usually men, which are father, brother, uncle... of the landowner. There is a double system of rights on land and on the resources grown on it. The question of the right of access to uncultivated resources (that can be managed, protected or spontaneous) will be addressed in our future work.

The agrobiodiversity profiles in both places surveyed, Arlo and Makadede (alt 650m) are differentiated, which probably responds both to cultural choices and ecological constraints (mixed profile with tubers and grain in Arlo, and mainly grain in Makadede, in addition fruits common to both). The plants used for food or other purposes are organized in a “management gradient”, from those, annual or perennial, which are strictly speaking cultivated (fruit, bamboo, luku puti), to those that are just protected (kapok, ai dak...).

Wood management practices, especially pruning and cutting, value their multifunctionality (fences / firewood, production of flowers or leaves for papaya and cassava) and must be further explored.



Figures 18 and 19 : Milling the corn in a grindstone, Arlo (Atauro).

In Arlo, the elders' plants that are cited are for example the fruits of akadiru (*Borassus flabellifer*), the starch of akar (*Corypha utan*), the marungi (*Moringa sp.*), Tamarind (*Tamarindus indica*), millet (*Setaria italica* or other species that would be a weed of corn).

Another discussion in Arlo has reported fourteen ancient plants that fall within the fuik (wild) or kuda (cultivated) register and which showed sharply defined categories with the consumption of grains (mussan),

leaves (taham), rhizomes or tubers (isim) and fruits (fuan). In Makadade, besides sorghum, millet and job's tears, reference is made to forest trees fruits as food from the elders: ere, elas and meam whose fruits should be boiled before consumption and which are still used as famine food.

The management of plants goes along a detailed knowledge of their reproduction, especially of male and female individuals, with special names.

In summary, the major themes on agrobiodiversity are those of the diversity profiles associated with different places and stories, of phytopratiques (management and handling gradient), of representations associated with plants (mythical history of their origin and introductions), of logics of naming, categorization and classification, of rights related to cultivated species and areas. Another theme, important in the context of the island development, is the sustainability of plants exploitation for plaiting (lafatik, boté...) or for weaving akar tais (the fiber is produced from young leaves) in the purpose of selling these traditional items.

Local Knowledge



A series of observations addresses domestic economy and the gendered division of work for social reproduction in Arlo and Makadade.

The social reproduction of domestic units seems to be based on the coexistence of diverse regimes of exchanges: barter, delayed exchange (gift) and commodity. Livestock, cultivated plants and ritual objects are the main subjects of exchange. By means of these exchanges, people access valuables, food and relations needed for their social reproduction.

The social division of work among men and women looks to be quite balanced, at least like it is presented in discourse. Even though, the care of kids and the maintenance of the house seems to be a female responsibility. Fishing, on the other hand, is carried out mainly by men.

Current efforts from development/government agents (Empresa diak, State administration, Church and Jean-Christophe Galipaud himself) have entailed the revival of some local knowledge related to art crafts – ceramic, weaving - which is now providing an important income for women in Arlo and Makadade.

Development results in a sort of commodification of culture, making people more dependent on commodity exchanges. Such a process will be reinforced once the tourism industry comes to gain more space in Ataúro.

Another point of observation was the management of culture (kultura) by people. People's adhesion to Protestant or Catholic Churches is an important divide to take into account in order to understand the different ways they relate to Kultura. Broadly speaking, protestant people tend to relinquish their commitment with local culture.

Only previous social practices which have been secularized by protestant church (Assembléia de Deus) are still carried out, such as marriage exchanges and some art crafts. Conversely, those converted to Catholicism present higher degrees of hybridism, overlapping beliefs in local and Christian mystical beings. As a result, rituals to ancestors and Catholic entities come about without contradiction and are taken as religious endeavors.

Finally, one points to women protagonism on associateship/cooperativism practices in Atauro and the low level of surplus production, mainly in Makadade.

Development of a participatory methodology

An important stage of our fieldwork focused on communication with local people about the proceeding of our research and its aims.

Our approach is based on a moral contract between local populations and researchers, emphasizing somehow the logic of the terms of prior informed consent as defined in the Convention on Biological Diversity. Populations have been consulted on the appropriateness of this research, on the nature and the destination of its results. It is thus agreed upon that instead of a conventional restitution, the results will be jointly discussed in order to ensure their validation and dissemination in a form defined by the populations: book, pamphlet, leaflet, panels...

The issue of the receiving public was raised and, despite the confidential nature of certain knowledge or stories, local populations expressed a request for a disclosure to a wide public, local, national or international in the context of the development of tourism, one of the activities on which the country invests for its development.

This approach was carried out in Suai, Balibo and Atauro, and communities have indicated their interest in these products and their agreement to cooperate to the collection of information, in the terms defined by themselves (notably in Balibo, with the organization of customary ceremonies before revealing information).

Such an approach forces to conduct simultaneously the production of scientific knowledge (which is the core of scientific research) and its local transcription, which

represent an innovation. Furthermore, we will be very attentive to potential conflicts of interest between local groups that our approaches could revive, mainly in the context of a state where customary rules are implicit to legal instruments.

An intermediate step is a first restitution of research results to local populations, allowing them to react on the content and the final form. Timor Aid intends to organize in 2016 with the Paloc team an interactive presentation of the results of the Prins Claus project in Suai, where populations might respond to the interpretations of researchers and correct or complete them. On the IRD side, a series of maps must be drawn for this exchange.

Collaboration with researchers working in Brazil, where many research (mainly ethnosciences) rely on participatory methodologies, will strengthen our reflection.

An example of this articulation between local knowledge and scientific knowledge is given by the publication of the Encyclopedia of the Forest. This book, largely co-written by researchers and traditional populations, about knowledge and forms of use of forest resources in the Amazon, aimed at reaching both local people and policy makers and a general public; it showed the ability of forest communities to sustainably manage their environment, in a context where it was meant them to leave their traditional lifestyle forest to make way for development of livestock and monocultures. To be noted also that to date in East Timor, we have not had access, in the types of collected knowledge, to narratives known by women.

DISSEMINATION AND PROMOTION OF RESULTS



Scientific dissemination

Several operations were conducted in 2015:

- Participation to the Timor Aid exhibition in July 2015 “Hatene Ami Nya Moris” (Conheça Nosso Mundo) in the Resistance Museum, Dili;
- In November 2015, the presence of a museologist in the team (Amandine Péquignot) led to a clarification with the local people of Atauro of the forms of heritage valuation they wanted (see development of a participatory methodology). The potential development of some Atauro sites such as the Aleti Tunu Bibi rock art cave site will be further discussed and implemented with the SSAC in Dili.
- In December 2015, we have been asked to provide scientific advice to the planned exhibition project in Fort Balibo by the Balibo Trust.

Articles and conferences are mainly or partly based on the results of this research:

Articles

Rappoport D., Guillaud D. (eds), 2015. L'Est insulindien. Archipel n° 90, 331 p.

Rappoport D., Guillaud D., 2015. Reconsidérer l'Est insulindien (Introduction). Archipel n° 90, p. 3-13.

Guillaud D., 2015. Le vivrier et le sacré. Systèmes agricoles, rituels et territoires dans l'Est indonésien et à Timor Leste. Archipel n° 90, p. 245-274.

Galipaud Jean-Christophe 2015. Réseaux néolithiques, nomades marins et marchands dans les petites îles de la Sonde. In : Rappoport D. (dir.), Guillaud Dominique (dir.). L'Est insulindien. Archipel (90)

Conférences

J.-C. Galipaud, D. Guillaud, B. Crespi: Sea people, coastal territories and cultural interactions? Tetum terik and Bunak in the Suai district on the south coast of Timor Leste. Panel Sea nomads, EURASEAA 2015, Nanterre, 8 juillet 2015.

J.-C. Galipaud, D. Guillaud : The neolithics of Timor Leste: resources exploitation and land use in a contrasting environment. Panel Archaeology of Timor, EURASEAA 2015, Nanterre, 9 juillet 2015.

From local knowledge to valorization

In the logics of the “restitution” of data collected, the enriched narrative on local knowledges and history will be valorized. In this perspective, various forms of cultural resources and media have been submitted to local populations taking into account the aims they expressed. This valorisation will be carried out after consultation and in close cooperation with the State Secretariat for Art and Culture (SSAC).

Materialization for conservation and diffusion

In this perspective, the preparation of a book presenting local knowledge and history has been proposed and accepted by populations regarding different aims and public concerned:

- Traditional leaders of Balibo have expressed the necessity of recording the local history and traditional knowledge of each house, in order to preserve and transmit them to the coming generations, since all former records have been destroyed in the past. In order to preserve the narratives of the “speech holders” (intangible heritage) and to facilitate their appropriation by younger generations, an audio record and/or a short form of digital media (video storytelling) could be produced and transferred on different supports (CD, mp3) as supplement to the book.
- The village heads of Arlo and Makadade (in Atauro) also showed a deep interest in the production of a book intended for the local population and the schools, and in a wider scale for tourists. In both cases, books will be drafted in various languages (tétum, asua, portuguese, english, etc.), chosen by traditional or village leaders, to ensure a total appropriation by the local populations and a wider valorization (at a national and international levels), as it was requested. Besides, a particular attention will be brought to the illustrations, some of which will derive from representations made by the populations during the interview.

Interpretative panels for the display of knowledge

In the particular context of tourism development in the island of Atauro, village heads (Arlo, Atekru, Makadade) wish to promote their local history in situ. Proposition of interpretative boards have been accepted and some themes have already come out, such as the scientific results of archaeological excavations done on specific sites (Atekru and Arlo), local knowledges such as handcraft (tais fabric in Makadade, ceramic in Arlo) or daily practices (agriculture, fishing, etc.), local history, and so on. The topics to be emphasized, the structuring of the information within the board as well as the choice of a location in situ (interpretation trail, or separate location) will be discussed in regard to the mapping of the knowledges and of the significant sites.

For the particular case of Atekru site, the valorization could be realized by the setting-up of signpost boards with simultaneously a double reading, interpretative (informative content) and informative (directions for visitors):

- A first signpost (on the beach) could welcome the visitors arriving by boat and briefly present the local history and the archaeological interests of Atekru, without indicating the location of sites, in order to limit the “wild” visits of sites. It could also direct the visitors to a kind of “information desk” (the house of the village headman, the school?) from where a trained local guide could lead them to the site. Such a potential strategy aims at controlling the flow of visitors and to facilitate the preservation of the site.
- A second board (in the cave) will put in context the site by presenting the scientific results from the archaeological excavation (chronology, pottery, etc.).

The choice of the languages used in the boards, as well as their location on the site, will be submitted to the agreement of the Atekru community and of the land owner(s). A brochure / flyer (A3) could be produced as a teaching aid in the visit, and could possibly be sold at the “information desk “.

Educational Nomadic Kit on handcraft and knowledge

Aiming at valorizing and maintaining local know-how and knowledges in the young generations, local handcrafts (weaving, pottery, and tais) could be promoted through educational nomadic kits for children in schools and as a support for workshops.

These kits could contain different items related to handcraft: pedagogic brochure on techniques, handcraft materials samples to illustrate the diversity of products (weaving points, tais design, etc.), natural products used (fiber, dying plants, earth samples, etc.).

These educational kits could also provide a good teaching aid for the setting up of workshops by local cooperative organisation (tais in Makadade, pottery group in Arlo) with the possible cooperation of Timor aid and other NGO’s already involved in Atauro.

PERSPECTIVES

Answer to call for proposals

To perpetuate the actions initiated in the field, our team engaged in the search for external fundings:

- Reply to the proposal of the Department of Culture and Communication (FR) on technical and scientific practices with regard to cultural policy: issues and challenges, deadline 10 December 2015. Submission title: “the Holders of speech: local political and cultural knowledge in Timor Leste”.
- Beginning of a draft response to an ANR call on the theme of local knowledge, territories and the connectivity that underpins them.

Recommandations for the protection and valorisation of archaeological sites

The Aleti Tunu Bibi rockshelter is an important historical heritage of Atauro and of East Timor. It is the only evidence of rock art so far in this island. It is important to preserve it in its present state and this requires several actions:

1. Enhance awareness about the site preservation at the village, district and island level (with a letter from the SSAC to officials and land owners, and a brochure with indications of site significance and good practice when visiting for local residents and potential tourists).
2. Evaluate the actions necessary to preserve the paintings and avoid further degradations. The general poor preservation of the shelter itself necessitates some consolidation. Furthermore the position of the shelter close to the main path between Atekru and Maker and the easy accessibility creates a potential threat.
3. Prepare information material and signposting for visitors.

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FINANCIAL APPENDIX

2015 EXPENSES

(€)	COTL	PALOC	DSF	IFI	Total
Plane tickets Paris - Singapore - Dili	5275	2800	1500	1860	11433
Field expenses	2700	6140		1580	10420
Rentals (boat, car)	795	450			1245
Translators	200			160	360
Salaries and grants		83000	9600		92600
Analysis		2670			2670
Total	8970	95060	11100	3600	118730

