Distilling Livelihoods in Timor-Leste: Fataluku Ecologies of Practice

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Abstract
This paper builds on the celebrated monograph by James J. Fox, entitled, Harvest of the Palm: ecological change in eastern Indonesia (1977). Fox’s work drew attention to the contribution of sugar palm economies among the communities of southeastern Indonesia. His study highlighted the contrasting ecologies of two orientations to livelihoods; one approach celebrates the benefits of low impact, sustainable lontar palm economies on the islands of Rote and Savu. The second approach foregrounds the destructive ‘slash and burn’ maize economies on the neighbouring Islands of Sumba and Timor. In this paper I offer a comparative, middle path perspective, focusing on the practice of sugar palm production and liquor distilling among Fataluku people of far-eastern Timor, but in a context of strong farming practices focused on seasonal maize and rice production. The strength of Fataluku traditions reinforces the role of the sugar palm as a vital component in a mixed economy of livelihood foraging and farming.

Keywords Sugar palms · Distilling · Livelihoods · Fataluko · Culture · Timor-Leste

Introduction
This paper takes its lead from the justly celebrated monograph by James J. Fox, entitled, Harvest of the Palm: ecological change in eastern Indonesia (1977). Part colonial history, part detailed comparison of livelihood ecologies, Fox’s work drew attention to the remarkable and diverse contribution of sugar palm economies among different ethno-linguistic communities in south-eastern Indonesia. At the heart of the Harvest of the Palm is an argument that centres on the contrasting ecologies of two general orientations to livelihoods in the lesser Sunda Islands of Indonesia. One approach celebrates the manifold benefits, low impact and sustainable capacity of lontar sugar palm economies on the island landscapes of Rote and Savu. The second approach foregrounds the destructive ‘slash and burn’ maize economies in the neighbouring Islands of Sumba and Timor and their longer term deleterious environmental impacts. Over time, Fox argues, the resource base on which this swidden system depended was steadily undermined by expanding population growth and shorter fallow periods leading to lower yields and land degradation.1

In this paper I draw on the compelling contrast presented in Harvest of the Palm to offer a contrasting comparative perspective from the island of Timor, one that moderates the dramatic contrast highlighted by Fox. This approach focuses on the role and practice of sugar palm production and distilling among practitioners in far-eastern Timor—specifically among Fataluku language communities in the municipality of Lautem—but in a context of strong farming practices focused on seasonal maize and irrigated rice production. More specifically, I argue that the strength of Fataluku traditions reinforces the role of the sugar palm as a vital component in a mixed economy of livelihood foraging and farming. In this more conditional perspective, I argue that local economies focused on sugar palm and foraging need not be seen as alternatives to swidden agriculture or a focus on farming per se, but rather represent one source of livelihood within a resource rich and flexible suite of productive possibilities.

1 Earlier work of Dutch Geography, F.J. Ormeling had previously drawn attention to the damaging qualities of these farming practices in west Timor in particular (1957).
The argument in part seeks to correct the implicit generalisation in Fox’s analysis, that the destructive agricultural systems he identifies in west Timor had a broadly similar impact across the whole of the island. In fact, as a recent paper by Shepherd and Palmer (2015) on agriculture in East Timor well demonstrates, the diverse ecologies and different population dynamics along with contrasting development policies and histories of formerly Dutch controlled west Timor and colonial Portuguese east Timor, created markedly different consequences for agricultural practices and land management across the divide. The following case study reflects this diversity by offering a moderating comparative perspective on the historical swidden systems of Timor in which the cultivation of sugar palms forms one component in a complex suite of seasonal farming and foraging choices.

For Fataluku rural communities, long term histories of swidden agriculture combine seasonal maize and secondary food crop production with smallholder livestock production. Buffalo (arapou) and pigs (pai) in particular, hold important and reciprocal roles in the complex ceremonial exchanges marking life-cycle transitions and the making and remaking of social alliances. In the cropping season from October/November, Fataluku maintain simple huts in their swidden gardens following the pattern of earlier times when forest settlements (known as otu) tended to be small, scattered and more mobile. Extensive use is also made of fallowed forest areas for hunting game and foraging wild foods while coastal reefs and waters offer regular opportunities for tidal gleaning and supplementary household food supplies.2

As elsewhere in the eastern Indonesian archipelago, distilled liquor produced from tapping the sweet sap of sugar palms remains an essential accompaniment to ceremonial exchange and everyday ritual enactment (see Miller, 1964; Dove, 1988 for comparative perspectives). In the forty-five years since the publication of Fox’s study, significant economic changes have occurred across the region that have diminished the significance of palm economies in everyday life and livelihood to varying degrees (Dalibard, 1999). But as I argue in relation to Fataluku practitioners at least, the role of the sugar palm retains its central and highly valued place in the social and ceremonial life of the people and the situation is unlikely to change anytime soon.

Fataluku Sugar Palms as a Resource for Living

A key focus in the Harvest of the Palm was directed to the then, little studied, lontar palm species of sugar palm (Borassus Sundaicus).3 This species grows in abundance on Rote and Savu Island (see Fig. 1) as well as in diverse lowland and coastal locations across the island of Timor including Lautem, the most eastern administrative region of the island

Footnote 2 (continued)
and payments to veterans and their families), as well as remittance incomes from international labour migration (McWilliam, 2020), are reducing people’s reliance on crop production to secure staple foods. The result is an expansion of existing fallowed forest areas, and extensive reforestation of previously settled areas.

Footnote 3 (continued)
and the homeland of Fataluku speaking populations. 4 Lontar palms (*F: kakala tua*) are tapped and utilised in Lautem and are especially valued for their capacity to produce sap for up to six months of the year, predominantly in the dry season from July to November. They grow mostly in the northern coastal lowlands of the district and in addition to their remarkable sap production as well as the nutritious, thirst quenching qualities of freshly tapped juice, the lontar provides a whole suite of useful products and applications used in everyday life. These diverse products include structural timber, thatch and rib cladding for house construction, fibre and leaf for baskets, plaited mats, sheaths for knives and machetes, rope and cords for multiple uses, umbrellas in the wet season, cigarette papers and brooms. The list is by no means exhaustive of the range of useful possibilities, but one can gain a sense of the extraordinary material value of these palms in the economic life of rural households of Lautem, just as they have been historically in the rural economies of Savu or Rote Island as discussed by Fox (1977, 26) Figs. 2, 3, and 4.

A second important and even more favoured cultural palm species for Fataluku communities is the so-called, black sugar palm (*arenga pinnata* or *arenga saccharifera*). 5 These palms grow in the more humid, higher rainfall regions of Lautem, usually in fallowed swiddens and pockets of the extensive upland forested hinterlands (see also Friedberg, 1977). 6 *Aren* palms (*F: tua ma’arau*) arguably hold the status as the pre-eminent palm species in the cultural and symbolic life of Fataluku communities. Like *Kakala tua*, the high quality and taste of the distilled liquor produced from its tapped and processed sap/juice remains central to the conduct of ceremonial exchange that informs Fataluku

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4 Fataluku number around 35,000 in Lautem with at least 5000 speakers, resident outside the area in the capital of Timor Leste, Dili and overseas (principally in the United Kingdom) (see McWilliam, 2012).

5 These are synonyms for the same species.

6 Fataluku also tap coconut palms for distilling alcoholic liquor (*F: vata tua*) in addition to harvesting the fruit for quenching thirst, its flesh for feeding pigs and drying for sale as copra. Coconut palm trunks also provide domestic construction materials including palm thatch, beams and coffins. The other palm that can also be tapped for the sugary juice is the *gewang* palm (*leu tua*) [coryphaelata sp.] but these only infloresce once before the palm dies and therefore their productive qualities for sap are much reduced.
sociality and cultural life. The procedure for tapping the aren–ma’arau palms is also broadly similar to the lontar (kakala tua), collecting the translucent juice that flows from the inflorescence stalks, but the techniques for inducing flow and managing production are somewhat different. Both aren and lontar palms produce at their best during the dry season (July–November), but depending on the season the aren palm can be tapped for longer when well managed (see Bartlet, 1923 for a classic comparative perspective on Aren palm production).

The aren palm (F: ma’arau) also produces abundant quantities of a black fibrous bark that forms a matting or netting around the main trunk. This fibre is known locally as fia and it too is highly valued as a livelihood resource. It can be fashioned into strong black rope and cords, and more particularly, provides a high status traditional roofing thatch for the iconic Fataluku stilt houses; known by a variety of names including fia le, le ia valu, and le lafai (great house) (see McWilliam, In press).

Formerly and into contemporary times, these impressive, tall, decorated thatched houses were markers of status differences in Fataluku communities and expensive to construct due to the quality of materials such as resistant structural forest hardwoods including ironwood (ete fara). They also attracted multiple, obligatory ritual stages of construction requiring extensive sacrificial offerings of livestock and commensality with construction teams. The finest examples of these houses known as, fia le are the provenance of senior agnatic lineages (ratu) of Fataluku settlements, typically recognised as the principal land-owning groups. In Fataluku they are referred to in ritual language as, mua ocawa:: ma’arau ocawa (lord of the land:: lord of the aren palm). Owners oversee the construction of imposing fia le with its ironwood posts and beams, intricately carved timber paneling and roof structures, and tightly fixed layers of black aren roof thatch bundles (fia lafai) topped with decorated shell strings, nautilus shells and carved wooden figurines. The houses served both as living spaces for senior households as well as symbolically charged repositories for ancestral sacra and protective sacred hearths (aca kaka or lafuru tei) of the agnatic male origin lineage (ratu) members and their families. Lesser status or subsidiary households could not aspire to construct these structures (McWilliam, 2019).

Fataluku traditional house designs are still found across the settled landscape of Lautem, but they are much reduced

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7 Scrapings of dried fia (tali fia) can be used with a flint stone (caimu) to strike a light and make fire. In the past dried and pounded fia was used as a substitute for gunpowder with round pebbles as bullets (nelukala mataru).
in number due to the ravages associated with Indonesian military occupation during the late twentieth century when many were destroyed or abandoned. In contemporary post-Independence Timor-Leste, due in part to reduced economic circumstances, most people have chosen to construct simpler or new style housing such as rudimentary stilt houses (cu) or simple cinder block and tin roof styles (le varaca).

However as economic conditions and incomes have improved there is visible evidence that the iconic houses forms of Fataluku are once again being built in numbers, many of which are eschewing the use of ironwood posts and fia matting thatch for concrete posts and dark coloured corrugated roofing iron, mainly on the grounds of cost, durability and availability (see McWilliam, In press). But if the outward signs of change reveal a shift in the values accorded aren thatch, the role of the palm as a much desired source of strong and clear distilled liquor continues to hold a central place in Fataluku social and sacrificial practices of everyday life (see McWilliam, 2020).

### Producing Tuak

The method of extracting the aromatic sweet–sour juice of the Lontar palm has been described in detailed in the ‘Harvest of the Palm’ (1977). The main techniques involve climbing up the trunk of the palm to its dense crown where it produces a series of fibrous stems, up to half a metre in length, known as inflorescence. Non-fruiting male inflorescence (tua lele)\(^\text{10}\) stems are preferred. A number of these flowering stems are bundled and tied together and gently pressed to induce flow before their growing tips are sliced off encouraging a slow steady flow of milky sap or juice. Small plaited baskets made from Lontar leaves, or more often these days plastic water bottles, are then fastened to the end of the bundles of dripping stems to collect the juice. Each morning and evening the yield is collected and the containers refastened after occasional re-slicing of the stems to induce continued flow. The actual yields of fresh palm juice (tua lemes) from a mature palm varies greatly depending on a range of seasonal and site location factors, and probably soil fertility and genetic variation. A well-managed palm can produce up to 10 L of tua piti (fermenting juice) every day but yields are highly variable and much influenced by prevailing weather conditions, particularly sustained heavy rainfall that results in reduced sap flow.

The method of extracting and gathering juice from the aren palm (ma’ara) also requires a bruising of the inflorescence. Aren plams produce their seed head from flowering stems (inflorescence) that emerge from their trunk in what is described in the literature as a ‘stout, decurved peduncle’. Fataluku refer to these highly fibrous stems as tua i mani, which produce a dense seed head and eventually fruits at the end (tua ro). When mature the cultivator can peel away the hard covering of the stem and, using a stick or wooden implement (setifoti) will begin a process of twice weekly, firm tapping of the stem inducing bruising along its length. The process is known as tua kakale and requires an experienced hand to produce the best results. After a month or so the tapper looks for signs of sap flow at the end of the yellowing seed head and by the presence of bees (wani) collecting the sweet exudate. At this point the fruiting head of the inflorescence is cut away and the flow of sweet juice that results is then gathered in a bamboo cylinder (tua cucu) tied to the stem. Collection of the fresh juice (tua lemes) follows a similar pattern to that of the Lontar palm, in the early morning and late in the afternoon. At each collection a thin slice of the stem is cut away to induce more flow and this process continues for several months until the stem (in mani) is reduced to a stump against the trunk and abandoned. Then a new inflorescence will be selected at another point on the trunk and the process repeated.

Aren palms are the favoured source of tua piti in much of the uplands of Lautem where they thrive in higher and more extensive rainfall produced by the double monsoon. Both species of palms produce during the annual dry season but the aren can be tapped earlier and depending on favourable conditions, continue to produce the sweet juice until just before the wet season proper (mid to late January). There is considerable variation in sap production among aren palms, but many can produce a sustained and prodigious daily flow of up to 20 L over 24 h, twice the yield of lontar.

\(^{10}\) This is a male palm which people refer to as tua iparula, while the fruiting variety is called tua tapur (female Lontar palm) and may also be tapped if the fruit is small.
Distilling Tua Harak

The Fataluku term for the clear distilled liquor they produce is tua harak or tua araki\footnote{\textit{Tua araki} is mainly the description used in the Los palos area, \textit{tua harak} along the northern coast. The liquor is also known as \textit{tua pohenu} or \textit{tua pohé}, ‘cooked’ tuak.} depending on dialect areas. Both versions are evident linguistic adaptations for the ubiquitous middle eastern-sourced liquor commonly known as \textit{arak}.\footnote{However, I have also heard a local etymology that the term harak refers to a state of strength, hardness and seriousness.} Across Timor one common generic expression for \textit{arak} is that of \textit{Tua sabu} which references the more widely known distilled liquor from the island of Sabu that was traded commercially across the region historically (Fox, 1977). The locally produced distilled product in Lautem remains very much a cottage industry with only limited local commercial reach. But given its centrality in Fataluku ceremonial and social life, there is a relatively high and continuous demand for the liquor and the great majority of settlements maintain seasonally operating distilleries. Their operations tend to serve the local community and the wider village if sufficiently productive.

The process of distilling in Lautem as elsewhere on the island of Timor is the same for \textit{lontar} or \textit{aren} based liquor production. It is usually a group activity (3–5 individuals), typically male in composition\footnote{In customary terms it is mainly men who consume \textit{tua harak}. Among its various benefits the consumption of \textit{tua harak} is said to give one a good appetite during feasts, and Fataluku would recognise the Rotinese description of \textit{arak} as the ‘water of words’ (Fox, pers. comm.).} who have enduring ties of kinship and or co-residence. Decisions around participation are made each year and while some groups maintain a stable distilling team over several years, others are simply ad hoc groups that form out of a mutual agreement to participate in the seasonal production process. Distilling is predominantly a dry season activity undertaken from June or July onwards, and provides an enjoyable alternative post-harvest past-time and income supplement when sold on to local consumers.

Regardless of the source of palm juice the production of distilled liquor, \textit{tua harak}, is focused around a purpose-built distillery complex known as a \textit{tua moh}. This infrastructure, often sited in bush locations away from the main settlement usually constitutes a number of small thatched shelters, a source of water and firewood, along with the diverse paraphernalia of distilling including the still itself and these days, plastic jerry cans and assorted containers, cooking implements and plastic bottles or bamboo containers for collecting the sugar sap. During the season the site might also have resident dogs and often chickens that are raised for egg production and reproduction. The focus of the \textit{tua moh} is the still itself – which takes various forms, but commonly comprises (1) an open oven or hearth (\textit{lafuru}), (2) iron cylinders/drums and or fired clay pots (\textit{bidon/ puhu}) to serve as the body of the still and filters (3) a long bamboo condensing tube (\textit{pehe}) for cooling and collecting the distilled liquor. The whole apparatus needs to be fitted together and sealed to make it air and watertight, a task that utilizes a natural glue (\textit{tua sisi / umina}) made from the pounded bark of a specific tree and mixed with fermented palm juices to produce a pliable black dough that hardens over time and is regularly re-applied to ensure a good seal.\footnote{One of the major benefits of palm juice in fresh or fermented form is that it provides a safe way of hydration in the absence of fresh or uncontaminated water.}

Palm sap (\textit{tua lemes}) begins fermenting immediately upon collection due to natural yeasts in the air and the residual yeast in the bamboo collection containers. The sweet, sour juice may be consumed immediately or fed to pigs as a nutrient rich supplement. Over a couple of hours natural fermentation increases the alcoholic content of the liquid which gradually becomes increasingly acidic and sour. Fermented palm juice (\textit{tua piti}) can also be enjoyed as a mild inebriant\footnote{Timor-Leste officially adopted US currency following Independence from Indonesia.} and some palm juice producers sell their daily collection in the fermented drink form. There is evidently a strong local demand for the sweet–sour brew (\textit{tua piti}) as a social lubricant and these days it sells for up to $1 USD a litre.\footnote{The 2017 average daily wage for labourers in Timor Leste was USD S$5 per day.} By way of example, during the season, Ignascio, a local \textit{kakala} palm (\textit{lontar}) tapper acquaintance of mine, manages several palms on his clan land on a morning and evening rotation. For his efforts he collects up to 20 L a day of the translucent juice and has standing orders from neighbours to buy whatever he produces. This is clearly a useful source of supplementary household income and only takes a few hours of light work a day to secure.\footnote{In the uplands south of Los Palos, the \textit{tua sisi} is made from a different combination of pounded seeds of certain forest tree and vine species mixed with \textit{tua araki}.} For the dedicated distiller however, the main objective is to bulk up a store of sufficient palm juice for ‘cooking’.

On the question of distilled liquor production there is of course considerable variation from day to day and still to still. There is a trade-off between the alcoholic content of the liquor and the amount that is produced. Higher quality \textit{tua harak} seems to be produced at a ratio of about, one-part distilled liquor to ten parts fermenting juice. But the actual volume produced from one session of cooking will depend on the capacity of the still itself which can vary significantly (Dalibard, 1999). In coastal areas like Com and Lautem, the
general practice is to use a ‘three container’ system\(^{18}\) with the larger base drum, often fashioned from old bomb casings derived from the Second World War, or more recently, used and discarded 44 gallon fuel drums. The process of distilling involves gathering enough palm juice over some days to build up supply (3–4 days depending on yield and number of palms being tapped). The cylindrical base container is fixed within the oven structure and filled with the stored liquid. Two locally procured, fired clay pots (\(na’u\) lafae and \(na’u\) moko; large and small pots) are then secured on top of one another and the unit is sealed. The upper clay pots are filled with a course filter of shredded palm fibre and importantly a series of selected root material (\(ete\) lari) and bark ingredients that provide aroma and taste to the final product. The formula for these ingredients is usually closely guarded, inherited knowledge and is said to be critical to the taste and colour of the final product. Atop the clay pot filters is fixed a short bamboo condensing tube (\(pehe\)) that is sealed into place with the black mash glue and angled to connect with a longer descending length of bamboo (\(pehe\) lafae) serving as a cooling pipe and dispenser.

Once the oven fire is hot and creating steam in the mash, the alcoholic distillate rises up through the mesh of filters and aromatic roots and condenses at the top of the structure before flowing slowly down the long bamboo pipe to a collection container (usually a plastic jerry can). The key challenge in the distilling process is to moderate the heat of the hearth so that just the right amount of distillate is released. Local producers have no recourse to temperature gauges to fine-tune this heating process. But what they assess is the amount of distilled liquid that trickles into their containers. Too much flow and the fire should be dampened, too little flow and more heat is required. Many practitioners are expert judges in these matters. As to the percentage of alcohol content of \(tua\) harak, this is really a matter of guesswork given the process of distillation and its subsequent use in sacrificial contexts, is typically framed and circumscribed by ritual action (see also McWilliam, 2017). There are a variety of phases of ritual engagement undertaken to facilitate the process of production and ensure good results and a bounteous yield. The first or ‘first cooking’ (which is to say the initial 5 L of so of condensate, \(F:\) \(i\) emere choronu) achieves a range of around 25–40% proof.\(^{19}\)

During the crisis (\(crizé\)) in Timor-Leste in 2006 when much of the country was severely disrupted by civil unrest and violent communal conflict centred in Dili, I recall people in the village of Com on the north coast of Lautem being particularly active in distilling \(tua\) harak for both local consumption and wider commercial sale. Com focuses on \(kakala\) tua (Lontar) production because of its drier lowland ecology and in the dry season of 2008, there were nine separate local stills (\(tua\) moh) in operation and a lively production of 5 L ‘jerry cans’ of clear liquor being loaded onto trucks for sale and distribution into Dili 200kms away to the west. At the time \(tua\) harak was selling for USD 1.00 a litre retail but double that price by the time it reached Dili. However, these were clearly extreme times and reflected the poor economic conditions that prevailed. I also recall no efforts being made to develop a Com brand for marketing purposes at the time. More than a decade on the number of \(tua\) moh complexes has declined from this peak but at the beginning of every dry season there are always a few local groups gearing up for production over the season.

Current prices for \(tua\) harak vary considerably depending on demand, location, and the quality of the product in question. A producer based in Lere Loho (Los Palos township) informed me that in 2017 he was regularly obtaining up to USD$45 for 5 L of the ‘first’ cooking of his \(tua\) ma’arau.\(^{20}\) This portion generally has the highest alcohol content and is usually the most sought after. The second or subsequent yield of liquor was selling for around $3.50 per litre. Calculating the return on this basis, a busy and committed group of distillers could each make up to USD$100 per week during the season and they usually don’t have to advertise their product because local demand is constant and typically greater than can be supplied. There is much variation in the skills of producers however, and therefore the taste and quality of their araki is a factor that is reflected in the price per litre that can be achieved.

**A Ritual Economy of Distilling**

Like most aspects of Fataluku engagement with the productivity of the land and its waters, the manufacture of \(tua\) harak and its subsequent use in sacrificial contexts, is typically framed and circumscribed by ritual action (see also McWilliam, 2017). There are a variety of phases of ritual engagement undertaken to facilitate the process of production and ensure good results and a bounteous yield. The first production of distilled liquor, the first cooking (\(tua\) pohenu) attracts a ritual performance. Referred to as ‘cleaning the bamboo’ (\(pehe\) nere sele) it signals the ‘curing’ of the bamboo (\(pehe\)) condensing tube and its readiness for production. On this occasion team members set aside 5–10 L of \(tua\) harak, while others head out to hunt (havare) for wild animals the meat of which will be smoked and consumed with the new liquor. Many kinds of animals are suitable for

\(^{18}\) Simpler two pot systems are also used in other areas. They are smaller capacity stills but can be equally effective.

\(^{19}\) Quality \(tua\) harak will burn when lit indicating levels of alcohol comparable with commercial liquors.

\(^{20}\) Amelio taps a series of \(tua\) ma’arau (aren) palms on the land of his uncle in the former small settlement of Hoi O’o. Every morning and evening he visits the groves to collect the sap from the actively tapped palm trees and stores it in larger plastic containers on site until there is sufficient supply for firing up the still (circa 100 L).
this purpose—monkeys (lua), possums (acuri), feral pigs (pai hoto), and even fish (api), river prawns (asi ira) and sea turtles (ipitu). The meat is cooked and consumed by the group, as an accompaniment to the inauguration of the first production of tua harak from the still. An integral part of this process involves providing portions of the hunted meat – usually the liver (ari)- as an explicit offering to the spirits of the land (mua ocawa) and forest (cat catu) accompanied by invocation and framed by divination (mu’u fuka totole). The invocation is designed to ensure that there are no injurious falls during tapping, that the palms will flow productively and that the distilling process will be successful and produce a quality liquor. As part of this process, small pieces of sacrificial liver may be placed on the main drum of the still and the condensing tube to ensure that it produces a quality liquor (Fig. 5).

Then typically the skulls of the hunted animals consumed at the time are hung up near the still as a signal to the spirits that the ritual inauguration of the still, known as tua masule, has been conducted. Once this activity has been completed, full production can be begin involving cycles of tapping and collecting the juice, collecting firewood, resetting and firing up the still and collecting the cooled liquor for consumption and sale. At the end of the season of production, which usually coincides with a reduction in the flow of juice from the palms, there is a small closing ritual to dismantle the structures and store the components for re-use in the new season. This stage is referred to as puhurita, meaning to store the clay cooking pots (puhu) used in the process and clean up the site. Like the opening ritual phase, this too is framed by a ritual hunt for wild animals, the setting of sacrificial offerings in an expression of gratitude for the success of the season.

**Ritual Applications**

In addition to the ritual framing of tuaak production, a key application of the distilled liquor lies in its use in sacrificial offerings and the symbolic feeding (fanë) of ancestral and other spirit forms. Fataluku spirit ecologies and the attention accorded the protective and instrumental role of spirit forms in everyday life remains an important orientation for a majority of households in Lautem (McWilliam, 2008). Even as Catholicism has become an important mainstream religious affiliation for Fataluku people (particularly since the Indonesian occupation in 1976), attention to the ancestors and the spirit realm remains a vital concern and one that requires regular engagement through sacrificial invocation.

Communication with house ancestors is pursued for a wide range of reasons in diverse locations and is generally accompanied by sacrificial offerings (fanë, to feed) and invocatory prayers. On these occasions tua harak is an essential accompaniment to both invocation and commemoration.

Examples include funerals (nara uru) the various post-funeral commemorative gatherings after 7 days (vaci fitu) and the 12 months release of mourning (F: meta ceve, Tetun: kore metan). Other Catholic days of commemoration include All Souls day [i huma’ara vaci] (2 November), when householders gather at ancestral cemeteries to clean the area, and present offerings to the dead such as betel nut (pua mahulu), cigarettes along with sprinkled flowers (ici cipi fai) on the graves of beloved ancestors.

At other times in relation to matters of illness or transgressive actions, pregnancies or plans for significant journeys or undertakings, all may precipitate communication with house ancestors to seek sacrificial blessings and or resolution of some underlying problem. A variety of divinatory techniques are deployed to accompany these tasks including prayers (mamunu) the sacrifice of small animals (chicken and pigs) to interpret the signs of their internal organs, especially the pancreas (ari moko toto), and the use of rice grain auguries (wirahana rao) or banana stem divination (mu’u fuka totole). In all cases tua harak is one of the essential ingredients of invocation and ritual exchange with the ancestral spirits (calu ho papu).

Sacrifices are also a constituent component of larger scale commensal exchanges that occur regularly in everyday life, including the various stages of marriage exchange, funerary rituals, and new house commemorations (McWilliam, 2011). At these times specific portion of the slaughtered animals at the feast (buffalo/goats/cattle), comprising the thorax and internal organs, known as the sacred meat (leura tei: ipilu tei), represents the portion of sacrificial food offered up to the House ancestors. This process is usually conducted at the household shrine of the host (aca kaka or lafuru tei)21 or a specific sacred site in the landscape that marks significant events of ancestral mythic history (te‘i, ete uru ha’a). Portions of the sacrificial meat are presented to the ancestors and the remainder is consumed by male members of the agnatic origin group (ratu), as an explicit gesture of commensality with the spirit collectivity. For most households and agnatic kin groups, the ancestral sacred hearth (aca kaka or lafuru tei) is the ritual focus of securing sacrificial blessings and protection of the house ancestors (ceremu fai).

A vital element in all these sacrificial procedures is the use and deployment of tua harak as a key component of the gifts offered to the spirit realm. Sacrificial foods can take a variety of form but they usually include small portions of rice (alè–wirahana), raw eggs (aca ocu), tobacco (capaku), betel nut (pua mahulu) and meat (leura), as well as a little tua harak poured over the offerings. The characteristic

21 Male agnates are said to gather and ‘sit at the aca kaka’ (aca kaka hia miré) and be led by a senior practitioner of the agnatic group (lafi-caru) in sacrificial invocation.
presentation of sacrifice to ancestors is 14 small offerings arranged in a configuration of rows of two times seven (fitum ece). The number seven (fitu) in Fataluku society represents a totality or whole, and in this context, they are directed to the origin ancestors (calu ho papu) of the House or lineage. Offerings to the spirit realm (i huma’ara) in many respects mirror the kinds of gifts offered in exchange relationships with living relatives. This can include meat of domesticated animals (both in raw and cooked form), portions of cooked rice and tua harak and some form of commensal engagement with the sacrificial offerings is also common (McWilliam, 2008).

Tuak and Sociality

Aside from the ritual requirements of tua harak there is a significant and widespread demand for the complementary provision of distilled liquor as a libation for the enjoyment of guests attending the many life cycle rituals that punctuate social life. At any one time in Fataluku settlements, there will be a range of preparations under way for life cycle events. These could include marriage preparations, formal negotiations and weddings, funerals and the various stages associated with commemorating the dead and finalising exchange obligations, house inauguration events, and more prosaic social gatherings and discussions where the consumption of tua harak is expected and enjoyed in moderation (mostly). Dispute resolution between affines or neighbours is also often facilitated by the sharing of tua harak as much to encourage forthright and open discussion, as well as sealing or confirming decisions and resolutions of differences. This is reflected in the saying: ‘we have poured the tua piti, we have poured the tua harak’ (Piti hai ve’e ele, harak hai ve’ele).

For larger scale gatherings where up to one hundred guests and family members may attend, especially funerals that can extend over a number of days, relatively large amounts of liquor need to be sourced. Estimates of 60 to more than 100 L are generally said to be supplied for funerals and weddings and, in these circumstances, organisers may need to search beyond the local area to procure sufficient quantity. Provisioning of tua is a task that befalls the host with support from their ‘sisters and children’ (leren ho moco) as wife takers (tupurmoko) and as part of the generalised coordination of exchange gifts that are mobilised for major life cycle events. Thus in these diverse and multiple contexts, interactions and venues for the celebration of sociability and spiritual communication in the Fataluku world, the role of the clear distilled liquor – tua harak- provides a central and vital contribution to the success of the occasion and the conviviality of social life.

Fataluku Ecologies of Practice

Fataluku sugar palm ecologies provide a complex suite of livelihood benefits for a great many households across Lautem. The diverse range of useful items and materials that can be fashioned from the palms to support everyday household needs include food sources in times of scarcity, a range of building materials for shelter construction and thatching, palm leaf umbrellas and buckets, ropes and cords, and even coffins anticipating the end of life. In the context of this paper, the sweet sap coaxed from the palms and distilled into liquor is a crucial component of ritual exchange, sociality and the celebration of life throughout the region which historically has been characterised by scattered, smaller scale, mobile settlements drawing sustenance from the forested environment (see also Dove, 1988).

It is also evident that the utilization of sugar palm products constitutes a complex form of foraging that I have argued elsewhere is a central feature of Fataluku traditional livelihoods into contemporary times (McWilliam, 2017; see also Pannell, 2011). This livelihood approach reflects in part the wide range of diverse foods and tradeable goods extracted from the richly resourced proximate forests and coastal waters of Lautem. But it also includes the regular agricultural production of seasonal staple grains especially, maize [cele] and rice [ané], as well as secondary food crops and other cultivars. Food cropping is also pursued in combination with extensive small scale animal husbandry of chickens (aca), pigs (pai) and buffalo (arapou), all of which contribute in no small measure to household consumption needs and exchange obligations. Indeed I would argue that it is this combination of farming and foraging, hunting, herding and small scale trading, in variable degrees of intensity depending on seasonal variations and resource opportunities.

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22 I acknowledge the query of a reviewer who wondered to what extent, distilled liquor had replaced betel nut offerings following conversion to Christianity which among Fataluku occurred mainly following the Indonesian occupation in the 1970s, and a subsequent decline in the production of areca palms. My sense is that in Lautem at least, betel nut (pua mahulu) still retains its value and significance in ritual practice, particularly in association with healing techniques (see McWilliam, 2008) and as ancestral offerings. But from my own observations, the ritual use of liquor is a preferred substance for invocations designed to ‘feed’(fané) the ancestors along with offerings of meat, blood and rice.

23 Lautem has a well-deserved reputation for the production varieties of white and yellow (hard) maize (cele pitine, cele karase), and the district has extensive areas of irrigated rice lands that were developed in Portuguese and Indonesian periods but are currently less intensively cropped due to rising incomes from government social transfers, pensions and remittances from labour migration to the UK and Australia (McWilliam, 2020).
that has so shaped and informed Fataluku livelihoods historically and into the present day. It follows that farming and especially seasonal cropping regimes are more discretionary than essential practices for most Fataluku livelihoods and to this extent the farming dynamics of far eastern Timor differ significantly from the more limited agricultural options available to the households in the degraded woodlands in Sumba or West Timor, as depicted by Fox in his earlier analysis. The Fataluku case study thus presents a more sustainable swidden complex reflecting its diverse natural ecology and the prospects for a broader array of choice in securing local livelihoods.

For all its popularity and utility as a beverage of choice for large social gatherings and ritual purposes, however, changing patterns of livelihood and occupational interests are putting pressure on the long-term viability of Fataluku distilling traditions. This is not a sudden transition but one that foreshadows a gradual decline in the intensity of production as individual practitioners’ with the technical skills and the subtle knowledge of tradition, age and younger generations show little interest in taking up the discipline and skills required of regular palm tapping and distilling. One of the constraints here is that palm tapping, and distilling is clearly a specialised interest and skill. The ability to climb and harvest the sugar palms while carrying a large bamboo collection cylinder, requires agility and strength, and many people are simply unwilling to tackle the heights involved (up to 10 or more metres for both species) using simple bamboo ladders. Reluctant participants are said (with humorous derision) to have ‘heavy backsides’ (irik ciré) that causes their nerve to fail and legs to tremble when they attempt to climb. More than this, however, without a sustained process of skills transfer and the renewal of what are highly sophisticated forms of local practical and technical knowledge, there will inevitably be a decline in the number of individuals and groups with the requisite expertise to maintain the distilling traditions. The fact that these days in most Fataluku settlements of Lautem at least, large numbers of young men are eschewing work in agriculture for further education outside the region in the capital city Dili, or the more lucrative settlements of Lautem at least, large numbers of young men are putting pressure on the long-term viability of Fataluku livelihoods.

Despite these apparent trends suggesting an impending demise or decline of the cottage-industry style production of distilled liquor in Lautem and across Timor-Leste for that matter, there are compelling countervailing forces supporting continued practice. Firstly, and as I have noted above, there is a strong and sustained demand for tua harak both as a constituent element in ritual performance and as a social lubricant with an ancient and well accepted tradition of practice. The use of tua harak is also intimately tied to sacrificial commensality with Fataluku ancestors (calu ho papu), and thus there is a strong cultural and even religious basis for its continued application. Substituting an alternative liquid accompaniment to these kinds of activities seems unlikely to be supported. At the same time any reduction in the production and availability of tua harak will only lead to increased prices as is already evident in the premium paid for the higher quality and higher alcohol content product. To underscore this point in 2019 I found a supermarket in the Timor-Leste capital, Dili selling bottles of boutique ‘Tua Sabu’ produced in Los Palos. The 300 ml bottles complete with designer labels, were selling for USD 7.50 (between $23–24 per litre equivalent). Thus, it seems to me that in these circumstances and, for the foreseeable future at least, the enthusiastic production of tua harak, with or without regulatory intrusion, will continue to provide an agreeable and beneficial livelihood feature of most Fataluku settlements as well as a continuing vital contribution to Fataluku culture and sociality.

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24 Another hazard for the tuak tapper is red hornets (pupupa mim-iraka) attracted by the sugary juice, that can cause highly painful stings lasting several days.
research funding organisation that issues grants on a competitive basis focusing on research quality.

**Data Availability** All data generated or analysed during this study are included in this published article. Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

**Declarations**

**Informed Consent** The project and fieldwork activity has been subject to a rigorous process of Human Research Ethics approval from the Australian National University (2016) based on the full application that detailed the proposed research process and engagement with project participants.

**Conflict of Interest** As sole author I certify that I am not affiliated or involved in any organization or entity with either financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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