

Chapter 4

Deep Times of Papua New Guinea with Over 47,000* Years Nothing ‘Relevant’ Happening: Why It Matters for the World’s Future as a Leading Sustainable Steady-State Economy Role Model and a Sustainability Super-Nation



We declare our second goal to be for all citizens to have an equal opportunity to participate in, and benefit from, the development of our country.

Papua New Guinea Constitution (<https://www.parliament.gov.pg/constitution-of-the-independent-state-of-papua-new-guinea>; accessed 11th July 2022)

The remarkable thing is that we Westerners absolutely do not believe in the efficacy of sorcery, whereas our counterparts in rural New Guinea absolutely believe in the workings of sorcery
Beehler and Laman (2020, p. 327)

Abstract There are just a few locations in the world thus far known to have humans consistently and sustainably on the landscape and seascape for over 47,000 years. Papua New Guinea (PNG) is among those, and it offers great tracks of humanity including the first cultivation of food items (farming) and an incredibly diverse human culture with over 700 languages. After contact and colonialization PNG was essentially forced to move from deep time to modern time in less than a generation. It’s a world record in cultural adjustment. Instead of abandoning the PNG life style, here it is shown that this culture offers many contributions to the world for moving forward with a highly needed and widely sought-after global culture of sustainability and well-being. PNG has already for millennia what most industrial nations are still looking for: benign sustainability for the land and seascape with a robust atmosphere and society.

* The figure of 47,000 years is widely used in this chapter and throughout the book as a generic reference. One may argue whether it is a bit more or a bit less. The archeological site records all rely on ‘detection’ of a site, just a few of those ones exist, and thus relying on those can easily be a hit or miss. But it’s 100% clear that PNG is associated with the Australian craton and thus part of Sahul. For the wider Sahul region, one may safely assume people in the wider landscape for over 47,000 years. Flannery (2002) for instance refers to 60,000 years of human occupation in Australia. Genetically, one can link PNG with Siberia and that movement must apparently happened before the 47,000 years as a reference in PNG. It’s also clear that not all of PNG was populated everywhere and all the time. While one may argue the validity of the figure of 47,000 years, it should not make a big difference for the sustainability argument presented here. Arguably, the 47,000 years figure will likely become a larger number once more science is done and more archeological sites and artefacts are found.

Keywords Papua New Guinea (PNG) · Archeology · Deep times · Ancient civilizations · Human history · Infanticide · Cannibalism

PNG presents us with a time machine in action (Kiki & Cheshire, 1969; Wilson, 2019). It is known to have hosted humans for over 47,000 years (Beehler & Laman 2020; O’Connell & Allen, 2007). Whereas the last glacial maximum (LGM) was app. 24,500 years ago. While a connection with Siberia can be shown in the DNA of PNG people, three waves of human immigration are known (Beehler & Laman, 2020, p. 241). The Lapita culture came from Asia c. 3600 years ago. Afterwards, more of the exotic species like dogs, timber trees and pigs occurred with a big impact on the ecosystem overall, but they just really had a short history in PNG thus far. Overall, due to such a complexity, the human stories about PNG run deep and diverse (e.g. Flannery, 1998, 2002; Gillison, 1993; Matthiessen, 1987), but most of them are reported by foreigners (Table 4.1), only a few really come from the native voice and with a wider context (e.g. Chan, 2016; Kiki & Cheshire, 1969; Wilson, 2019). Most of the reports come from ‘white males’ (exceptions are for instance Gillison, 1993 and Wilson, 2019). Even then, those records are necessarily incomplete and biased due to the very high cultural and ecological diversity in PNG, all brought back into a narrow framework of English-written science. So what is a representative scientific sample for PNG? There is no normal distribution hardly a sufficient sample size.

Table 4.1 Narratives about Papua New Guinea provided by major (western) sources (a selection)

Attribute	Author	Comment
Primitive	Mead (1930, 1932, 1935, 1967)	While this was used as a professional term, the meaning and misuse is clear
Undiscovered	Beehler and Latam (2020)	This means undiscovered by the western world, ignoring over 98% of the deep legacy
Bare-naked	Flannery (1990, 1998)	It’s clear from the writing that Flannery supports indigenous people but the way how presented (photos and implied) is widely imperfect
Intelligent	Diamond (2011a, 2011b)	It’s clear that this is used as a positive feature, however, it remains widely disputed as a concept
Cannibals	Pratt and Pratt (1906), Hoffmann (2015)	Arguably, there are no relevant modern cases of predatory cannibalism in PNG these days; however, the book title plays with this term as an attention seeker. Arguably, these references are very quite on PNG being a major vegan nation
Savage	Levi-Straus (1966)	Needs to be read in context of its time
Stone age	Matthiessen (1987)	Likely this term reflects the attitude of its time
Deep myths	Gillison (1993)	Mysterious deep ancient times unfathomed

And oddly enough, seen globally, there is virtually no internationally recognized PNG Nobel Prize winner, or PNG poet in Hollywood, an internationally recognized creative awardee or similar that gets listened to for his/her traditional ecological knowledge and sustainability skill (Suzuki, 1993; compare also with Bringham, 2011). App. 97% of the land is in the hands of traditional land owners; no corporations or government (Baraka, 2001; Larmour et al., 1981). Related conservation management customs are passed down as part of the oral tradition and belief system (Cousteau & Richards, 1999; Gillison, 1993, see West, 2016 for new directions). And so, the stories from PNG that are found for a global audience are usually based on hearsay picked up by foreigners for impact, half-broadcasted for the soundbites, often got lost in translation and have evolved by now; we just see a leftover of earlier times unknown (Gillison, 2002). Virtually design, the PNG information tends to be exotic, sensational or if not even sounding raw or barbaric to a western audience, promoted by directors for funding and promotion, and by publishers for sales to a widely uninformed audience on PNG issues (e.g. Hoffman, 2015) or with a personal agenda. To attract attention, PNG is simply to be presented that way: raw, wild, stone age, savage and primitive; ideally naked and with cannibals (Matthiessen, 1987). It's a PNG profile designed by 'the west' and that makes western people feel good, somewhat superior and civil, and provides them income. But PNG—the deep times—begs to differ though.

PNG indeed provides entertainment and stimulus for the global intellectual, keeping academia occupied, (e.g. Acemoglu and Robinson 2013, Diamond, 2011a, 2011b; Gillison, 1993; Mead, 1930, 1963; West, 2006) (Figs. 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10 and 4.11).

And then there is the endless promise of 'wealth' in wild areas that are to be 'developed'; much of the colonial history is driven by such greed. Gold is a classic driver for western society (see for instance Diamond, 2011a for Latin America): "That remote place we put in some much effort must be valuable," not? PNG lived for over 47,000 years in its own huge wealth. But as a very common scheme, from their earliest sightings of New Guinea, the Europeans assumed they would find gold ("Isla del Oro"; see Beehler & Laman, 2020, p. 41), at least spices and personal gain and fortune was to be found. All else what PNG had to offer was to be ignored.

The geography of the PNG landscape, rugged mountains, dense vegetation and the unknown interior usually convinced explorers that there was much treasure of a sort. For a while, spices took over the excitement for that area (in the Mollucas), nutmeg, masoi bark and dried sea cucumbers as well as crocodile kins, and soon also Birds of Paradise plumage as another item of desire and 'must have' (worn as a prestige by members of the royal courts in Europe and outside) (Laman & Scholes, 2012)! But finally, in 1890 a small amount of gold was eventually found on the Gira river as well as on the Yodda trail near Kokoda. But it took until the early 1900s for the more successful gold discoveries to be made and reported. The Markham River area became a center of attention and subsequent road, bridges and airports were developed there with cities and ports, e.g. Lae. It's the fabric of modern nation PNG driving business till today.

Fig. 4.1 Ancient times are everywhere



Instead, for thousands of years, the indigenous people of PNG knew very well themselves about their (geological) treasures and how to use them. Industrial extraction and use of gold had little value to them throughout most of the PNG history. Clay work was of equal or more value (e.g. from the Sepik-Ramu area; Beehler & Laman, 2020, p. 239 as an artefact shows on display for a small audience from Young Museum, Fine Arts in San Francisco¹). Gold was locally known but not a major item to seek after really. Instead, PNG people have mined and bartered stone implements and ochre and also used clay to make pottery. Gold was first really seen and ‘discovered’ by Europeans in Papua New Guinea in 1852 as accidental small traces in pottery coming from Redscar Bay, Papuan Peninsula. A wider gold rush started from then on, spurred by Australian Leahy explorers in the 1930s for interior PNG. PNG then lost much self-determination in that process (Golub, 2014; Kirsch, 2014); just as it happened elsewhere in the world too (see Bélanger, 2019 for an entire ‘Empire of Mining’ driven by the British court and its spin-offs, e.g. Canada promoting it world-wide!). When mining enters the landscape, so usually do Australians and Canadians;

¹ This argument matters as it’s widely claimed to take artefacts out of to own them globally, which is widely untrue. Neither PNG citizens nor most people in the world can enjoy them when shown in rich nations, at elusive places and where visa are required; public transport is hardly available. In the meantime, artefacts in (traveling) exhibitions can get damaged or stolen.



Fig. 4.2 A mumu: an ancient tradition feasting for the family and tribe with an esteemed ‘earth oven’; a feast for Anthropologists



Fig. 4.3 Meeting a travel party on foot, just like done for ancient times



Fig. 4.4 Ancient craft to perfection



Fig. 4.5 Selling crafts now to tourists



Fig. 4.6 Tree fern, a very important and super-abundant plant fabric for millennia



Fig. 4.7 A very sustainable income and food system: gardening with pigs, dogs and coconuts:

Fig. 4.8 Cut wood and search for a food item of the wild: grubs



Fig. 4.9 A grub as a delicious food item of the wild: Who needs to starve?



Fig. 4.10 Modern intruders enter with global warfare beyond 'just' colonization



Fig. 4.11 Typical 'station': a hub of rural live in Papua New Guinea centered around a phone tower and a landing strip

this pattern applies to seafloor mining also (review in Earthworks et al, 2015). PNG got played with once more by outside nations, most of them colonial by nature and coming through the UN mandate.

And when a subsequent missionary program enters a landscape—a commonly linked scheme—all traditions get usually destroyed—at least modified²—and thus, a lifestyle and its cosmology that evolved for over thousands of years is lost (Beehler & Laman, 2020 for a critique). It's man-made extinction in action (Short, 2010). Has a soul been saved in that process?

Along with the lost lifestyles goes the loss of taboos. One may easily argue that bushmeat hunting creates a severe and widely unmanaged burden to wildlife and might even now lead to extinctions (Beehler & Laman, 2020, p. 267). But with (co-evolved sustainability) taboos, this is not to happen. It makes an easy argument favoring the need for a framework in the 'tragedy of the commons,' or that the commons have no relevant tragedy in ancient times; the spoilage instead comes from modern man itself and the feudal system; not? (For Nobel Prize winner Eleonore Ostrom on that entrenched discussion see Araral, 2014).

Research work in New Guinea villages has shown now that people have already started to loose their ancient link with the landscape and the deep times that way (F. Huettmann unpublished, Beehler and Laman 2020 for 'untouched' Foja mountains even etc.). It's also described as ongoing for over 30 years with the advent of cash crops, e.g. Baraka (2001). This ongoing loss of expertise must come to no big surprise (as described by Kulik, 2019 for instance) because that's precisely what the Leahy brothers and governmental patrols really wanted: to pacify, to civilize and to bring 'peace' in the bush, for all of the PNG nation while their own profits grow in parallel unchallenged. Australia forbid cannibalism in PNG, and thus it got abandoned by the 1960s. But some outcomes were different from intended (see metrics and conclusion from Gosarevski et al., 2019). It's the direct consequence of the imposed modern life, the western life system and funding streams during globalization. It comes with serious 'modern lifestyle diseases.'

Even in most remote bush villages, the dwellings tend to be now centered around squared air strips, as another western construct. Forest people and their villages now are organized into convenient units for governments and churches to administer (Having been in many of those myself, those are quite boring set ups and places). In earlier times, those have been family compounds instead dispersed widely in the forest and landscape for natural resources (Beehler & Laman, 2020). A church, another squared set up, is part of such a western-style governance culture, whereas the old but world-famous longhouses are mostly gone now.

² What usually happens in such cases—human nature—is that human society divides on the issue and keeps the ancient traditions, e.g. under cover, and blends them with the missionary ones. Examples are seen easily in the undercover voodoo cults ongoing after church times in the Caribbean or in coastal Brazil. The green Christmas tree, the Easter bunny and many of the pilgrimage trails (e.g. Campostella) show the identical pattern for western Chistianity; those symbols are part of an earlier pagan belief system in central Europe. For the non-believers of this statement, one may easily hint to the Vatican in Rome, a city and location which was initially driven by a heathen belief system and tried to outlaw and kill Jesus and Christianity itself for over century.

Still, PNG is alive in modern times and is trying not to go ‘under,’ just like most other nations and cultures these days. It’s the usual struggle of live ongoing since mankind, globally, but now accelerated by globalization. In the meantime, sorcery remains widespread (Beehler & Laman, 2020, p. 326–327; Gillison, 1993, see for isolated cases of spiritual cannibalism to transfer the soul of a relative till the 1960s in Liberski, 2013; concept in Pedersen and Willerslev 2012).

In reality, in the human history though, PNG is no global exception in the struggle for survival and sustainability and as a tropical nation (see for instance Dublin & Tanaka, 2015). Life and societies go up and down (Heinsohn, 2021 for a global up and down, e.g. tenth century; see Diamond, 2011a, 2011b; Harari, 2015). Beehler and Laman (2020) discussed that process for PNG in some detail and Mack (2014) and Kulik (2019) showed it in wider reality for PNG linked with culture and language (e.g. Wurm and Hattori 1983). PNG is actually living in the modern world now. That’s the reason why antiquated approaches on top-down Anthropology by so-called elite institutions fail us so much; it’s a mismatch (and that mismatch comes from the scientists and their champions that have not realized in what world they are now living and what they study; PNG in the year 2022. It remains widespread) (Table 4.2).

PNG is located in the tropics near the equator closest to the sun, where most human live on earth is found in abundance for millennia. PNG’s patterns and profiles are often nothing special really and found worldwide. Nor are kinship dynamics of a male-driven or maternal society, and even killings, crime, or eating the enemy and cannibalism (see reports in Flannery, 1998; Richardson, 2005 etc.) anything new or special really in human history. It is widely known and described worldwide, e.g. in Central Africa, Amazonia, in the polar regions and in the human record overall—ancient, medieval or modern European (see St. Petersburg siege during WW2; Table 4.3). King (2000) put this in a wider modern context and asked who are actually the cannibals; the western tourists? And if not killing infants for sustainability and population control and associated warfare, certainly abortion is known to have been practiced by females, families and communities throughout the world for millennia, as it is described for PNG also (Choudhary et al., 2017; see also Gillison, 1993). Cannibalism, which PNG gets accredited for so widely (Beehler & Laman, 2020; Hoffman, 2015), is nothing unique to this part of the world nor for mankind or civilization, and there is no truly and relevant reported predatory cannibalism case of PNG since the 1930s anyways (there were a few spiritual burial practices till the 1950s, or so, Liberski, 2013; compare also Mithen 2007 for other ancient records). So why does PNG get the bad and sensational press? See instead the concept of a New Cannibalism brought from the outside (Patience, 2012)!

Arguably, those reports from PNG tend to sound brutal and barbaric to the uninformed and when provided without wider context. It makes money, and it steers the public attention, e.g. Pratt and Pratt (1906). But then, so-called civilized nations are not free of barbaric events and actions neither, e.g. German Holocaust, Japanese war atrocities, or the throwing of nuclear bombs as a Genève Convention violation, declaring international wars without proper justification and evidence, using drones to kill innocent bystanders, food embargos for entire nations and their people? Virtually any ‘highly civilized nation’ with a royal court or similar can report those ‘uncivil’

Table 4.2 Selection of cases of reported local cannibalism and related cases of widely debated inhumane treatments in the world (in alphabetic order)^a

Nation/culture	Reported topic	Citation	Comment
Amazonia	Birth control	Hern (1992)	An ancient technique found globally
Arabs	Slavery	Gordon (1989)	A classic subject but found almost worldwide
Austria	Cannibalism	Der Spiegel (2007)	Modern issues, case relates to homelessness
Central Africa	Birth control	Eyong (2007)	Consumption on specific wild meat etc
France	Cannibalism in a prison	BBC News (2007)	A man-made feature and facilitated by institutions
Germany	Cannibalism	Daily Mail (2020)	Online case
Malaysia (Not New Guinea)	Human trophy (shrunken head)	Ginging (2007)	Also found at other locations
Indonesia (New Guinea)	Cannibalism	Beehler and Latam (2020)	
Ireland	Slavery	Rodgers (2007)	Widely done worldwide. The Irish slave trade in the tenth century connected with the Vikings and with Central Europe, widespread
Some North American Indian tribes	Scalping and Cannibalism	Bullock (1991), Abler (1992), see Whitehead (1984) for the adjacent Caribbean	Common features of most wars in the world
Papua New Guinea	Cannibalism	Pratt and Pratt (1906), Flannery (1998), Richardson (2005), Leberski (2013), Hoffmann (2015), Beehler and Latam (2020)	Two forms of human consumption were reported, eating the enemy, and eating a dead relative for saving its soul from decay by worms and beetles

^a Many more can be found in public knowledge bases such as https://en.wikipedia.org/wiki/List_of_incidents_of_cannibalism

Table 4.3 Terms used by indigenous people when the white man discovered indigenous people (“contact”) and started to take over

Location and tribe	Term used	Event	Citation	Comment
Interior Alaska Dene	World broke down	Mining	Ayers et al. (2009)	A commonly heard statement when white people entered
North America	Various experiences	Christoph Columbus contact	King (1999)	A diverse set of experiences on the continent, over time, usually the Europeans came better prepared and equipped due to wider and previous experiences worldwide
Polynesia, Samoa	Friendly contacts	Laperouse expedition 1722 onwards	Tcherk (2008)	A widely interpreted topic re. sexual behaviors among tribes
Highlands PNG	Believe that white people were ancestors, locals attempted to rub off the white skin	Leahy exploration 1930s	Griffin (1978)	A reported narrative

actions and collaterals as a known part of their actions, e.g. Saudi Arabia, Belgium (e.g. Hochschild, 1999 for Congo) and the English and Spanish royal family (as per name, ‘concentration camps’ were widely started and practiced by the Spanish and British governances). The report on cannibalism in modern Austria, a former kingdom empire, as well as in Germany, all facilitated with ‘modern’ tools of the internet makes that argument (Daily Mail, 2020). The western industrial lifestyle, governance and culture is far from benign itself (King, 2000). So who is to judge (see Patience, 2012 for a new form of cannibalism)? Instead, we are to live in a good and mutually agreed framework of human well-being.

One may see it that way perhaps: PNG’s past and created reputation helps tourism, increases book publication sales, provides career boosts and institutional recognition, using the fear factor (Hoffmann, 2015; King, 2000; Salak, 2001, it’s an old business plot in capitalism, e.g. Pratt & Pratt, 1906). It helps people to link with PNG, create a narrative and an association, albeit in a somewhat unfair and biased way. It puts PNG on a map in the landscape of your mind and in geography with a reputation designed by the west. But arguably, PNG is more than a nation that offers exotic stories for your bartender; it’s a human place and an inherent part of the world with a deep earth link and geology located in a vast and deep wilderness (for relevance of

wilderness globally and PNG's contribution see Pérez-Hämmerle et al., 2022) and coming from the eternal garden (that actually would make a link with the bible, but I am not sure the missionaries play up that card much.). One cannot simply say: PNG is 'out there' and not part of latest globalization and its society; rather vice versa. It's the mother of all, certainly sustainability. Like Nepal not being defined by Mt Everest, PNG is not defined by its bad stories narrated by the western colonizers; many are even outdated, reported third hand without relevant context and disputed (e.g. Foerstel, 1994 based on etc.; see also Silverman, 2012).

Arguably, PNG's stories are much more than drama or hearsay! They matter, in a way, because this type of society stayed sustainable, more or less (Flannery, 2002). It did so for thousands of years, certainly for over 47,000 years. That is not only a feat, but also a world record because no other nation, certainly not the modern nations, got it done well over time (see Elvin, 2008 for the Environmental History of China and what is like today in a Megadiversity Landscape). Most modern nations lack such a governance, culture, commitment and expertise—a real sustainable culture is absent—to operate on earth that way for thousands of year: running the big garden. Whereas the modern nations now seem to destroy even themselves, and many others, in just less than 100 years (Harari, 2015). Any visit to a zoo or herbarium will show you no other, showing many endangered species in captivity and/or with photos as their last resort; those are the 'zombies' and walking dead while wilderness habitat disappears. It exposes global environmental decay and wide lack of conservation, wilderness progress metric and even ethical disregard of ancient societies and diversity (see museum value discussion here <https://www.theguardian.com/commentisfree/2018/apr/03/brooklyn-museum-white-curators-african-art-open-letter>). Beehler and Laman (2020) have discussed the cultural decay in length.

It's a common scheme that the western society looks at non-western society as primitive, exotic and barbaric, (e.g. Levi-Strauss, 1966; Mead, 1932). In PNG, this was reported early on, e.g. killing is on the order of the day and it were the Australia miners and Christianity who changed that (Nelson, 2016). Whatever the brutality in the PNG society is (see Salak, 2001 for experiences traveling as a Solo Woman; see also domestic violence in Gillison, 1993; West, 2006 and experiences by the World Birder Phoebe Snetsinger, Snetsinger & Pratt, 2003), PNG remains a super sophisticated sustainability culture and nation in the global context, just like most of the human societies that operated well on earth for over 47,000 years. It cannot be any other. Like other nations, PNG perfected the use, governance and conservation of gardening as well as fisheries and a nomadic sustainable lifestyle. PNG did not really develop a feudal system across PNG. Already the topic of sustainable shark fishing (compare with White et al., 2018) partly achieved with shark calling (Cousteau & Richard, 1999, p. 197), or use of natural nerve poison for a long-term human-use fisheries speaks to that (Cousteau & Richards, 1999, p. 197). It stands beside the many other and unique but great policies and skills that PNG has co-evolved and developed (e.g. Diamond, 2011a, 2011b; Flannery, 2002).

It is in that context and culture that PNG used mummies, refers to sorcery and believes humans came from the very nature it was using; thus nature was 'holy,' part of human life itself. That is the taboo avoiding overuse of nature. PNG culture is a sustainable culture and inherently living with nature, and from nature. It has that 47,000 years long proven track record! The destruction of nature, loss of land, is

not what is promoted in PNG and by its rural people (Cousteau & Richards, 1999; Flannery, 1998, 2002; see Demeulenaere et al., 2021 for Melanesian approach to trees).

Now how did the deep-time society in PNG really look like?

What was village life and PNG like before contact? Was it just sustainability by luck, by design or a drama, suffering was it warfare, or was it an outermost cruel and barbaric society, or was it a benign life like anywhere in most ancient societies mostly at peace with themselves? This very argument, that native tribes before contact lived in peace and harmony, is globally intensely debated (Ellingson, 2001 for 'Noble Savage' and Raymond, 2007 for Ecological Nobel Savage; see Bernhardt, 2017 German for a myth of a coconut cult). It would be too nice to be all true, but scholars report opposing views; see Matthiessen (1987) or Golub (2014) (see also Rauzon, 2016 finding that many 'remote' Pacific islands covered ticks, diseases and invasive species spoiling the harmony view and the biogeography balance). The PNG village life and the great Melanesian way is promoted by Narokobi (1975, 1983) as an essential pillar of the PNG nationhood!

But clearly, if the harmony would even just remotely be true, the western lifestyle would clearly be a debacle (as it is far away from any harmony, or from sustainability of any sort, nor does it promote it; it easily lacks the deeper cosmology of the Melanesian way, e.g. Gillison, 1993, 2002). But it certainly was a different live than what industrialization and the western world offers. One can find many hints in the literature and interview what indigenous populations experienced when the encountered the 'white man' or its society (see Tables 4.1 and 4.4).

Despite the discussion and debate ongoing, in the following, I would like to show some presumed robust metrics of Deep Time in (terrestrial) PNG:

Tribal structure: Many tribes roamed the landscapes in parallel with assigned boundaries, little overarching structures existed beyond bartering and reciprocity (Walton & Jackson, 2020).

Structure of family: Maternal or male-dominated societies were found, often just small groups (<15 individuals) (Beehler & Laman, 2020; Flannery, 1998, see Gillison, 1993 for some family details).

Village structure: Remote and loosely dispersed family housings existed, usually due to a semi-nomadic lifestyle centered around swidden-farming (slash and burn gardening by use of fire and hatchet/stone axe, farming moves determined by the speed when forest succession recovered; Beehler & Laman, 2020).

Population: Human density now increases but likely has been rather low for millennia (Beehler & Laman, 2020), even for the 'highly' populated areas in the highlands encountered by Australians in the 1930s.

Tools: Bow and arrow remained relevant. Decorative stone implements were widely found. Drums, carved out of wood as an ancient communication tool were used. The stone axe remained a major tool.

General biological species structure and set up: On a larger scale, big and low species got reduced, e.g. Eastern Long-beaked Echidna became extinct in

Table 4.4 PNG as a sustainability leader: Examples and topics

Topic	Practice	Citation	Comment
Swidden gardening	Burn, cut, plant and let re-grow, nomadic style	Beehler and Laman (2020)	Essentially a global practice
Forest conservation	Remote landscapes with little human populations and almost free of hunting		Low human populations allow more resources to access and to use
Local landownership tenure	Sophisticated laws and concepts of using products and services from the land, often overlapping	Narokobi (1983) Baraka (2001), Golub (2014)	Together with cosmology a core aspect for Melanesia
Live off the land, for medicine and health	Shamans using plants for treatments, sorcery etc	Narokobi (1983), Beehler and Laman (2020)	Like above
Personal property	Traditional PNG societies have very little individual and material wealth, just common wealth Wealth was measured in pigs, and only a few people had those. They used them to indebt and impress on others and often shared the wealth	Beehler and Laman (2020)	
Personal housing	Such houses naturally only lasted 7 years or so	Beehler and Laman (2020)	Often nomadic; temporary residences widely used. Personal dwellings not needed really

Australia and are widely reduced in PNG also, only found there now in remote places. Tree kangaroos were widely reduced, often extinct. Due to human hunting pressures, many mammals became rather cryptic and nocturnal. Some marine species must have been reduced also, but little evidence exist.

For Birds of Paradise (BoP), Beehler and Laman (2020) think that the BOP harvest has little to no impact, including the colonial and more modern ones. It would not affect the BOP conservation status. But that can arguably be disputed as these experts show no population numbers, trends and remain with a widely outdated 'surplus' argument and narrative that failed anywhere else (e.g. Hernandez et al., 2013 for a typical hunted species and textbook example managed under such an initial surplus 'spilled milk' assumption).

Overall, app. 88 species of wildlife became extinct in the Sahul region (that is mostly for Australia; Beehler & Laman, 2020 and citations within; Flannery, 2002; Hocknull et al., 2020; Johnson et al., 2016).

Landscapes in PNG have been modified by ancient humans, e.g. by fire and for hunting (Examples provided by Flannery, 2002; Beehler & Laman, 2020, p. 122). Further on a landscape scale, wild nuts and fruits, and some timber trees got planted and maintained. Earliest PNG inhabitants likely lived from yams, pandana nuts, game and fish (Beehler & Laman, 2020). As PNG is one of the oldest centers of agriculture (e.g. a c. 9000 years old taro field are found; Beehler & Laman, 2020 and citations within), it is likely one of the first areas in the world for cultivation of bananas, sugarcane, taro and greater yams. It can be said that sweet potatoes, timber and pigs entered the interior, and yams and fish were used at coastal areas.

On a microscale, village diseases are of interest such as hookworms, roundworms, tapeworms, giardiasis, tuberculosis, common cold, hepatitis A and diarrhea. Advanced staphylococcus infections and open sources, ulcers, can now be found. Malaria is widespread, but the latter is likely made more severe in modern times.

National structure: None really existed. PNG was not a nation state back then and a central/feudal island king did not exist.

Reference to the cosmos and the universe: A clear link is made with the wider universe and the relevance of a holistic view in which humans are just one part and are an inherent part of nature.

Instead, the PNG constitution, just done in the 1974 onwards and set up by western minds following Westminster-style federated governance, clearly does not—and cannot—achieve what the deep time society of PNG achieved (see also Stewart, 1983). It's simply not suitable, nor adjusted well and embedded in PNG's complex habitat. So where then is the progress last 60 years brought by modernity of a society that otherwise did well for over 47,000 years in a sustainability and governance framework that is virtually opposite to globalization?

Reality-reporting of modern PNG in globalization presents to us as if PNG people are lost in their own land and time; it might easily appear that way to the onlooker. Whereas, it's really vice versa, the western people are lost, confused and lost themselves in this world, certainly when in PNG but also in their own lands. They do not understand PNG much, hardly themselves. Many metrics show us no other, e.g. a record-high use of anti-depressants, drugs and social decay on the search who they are (e.g. Hemels et al., 2002). The Central Banks are consistently adjusting the policies for a stable currency, and the actions and arguments become absurd, widely divorced from the citizens (e.g. Stiglitz, 2003).

One may easily conclude that in PNG—like in most parts of the world—the last 60 years have been devastating and created turmoil of a nation that sat well on earth

for over 47,000 years, done without a feudal structure, without colonial powers, without a federated system and without a Westminster legal style (Steward, 1983).

Who is to blame?

As a look into history and legacy shows, modern western society, its leaders and promoters, of the last 300 years, specifically last 60 years, are messing up well-entrenched and sustainable systems. For what? The colonial history of PNG was no fun ride, but WW2 and its aftermath was the worst. What currently gets promoted globally, on an Asian level (e.g. Asian Development Bank, 2000) or globally with the UN, does not work well neither; the underlying economic model and its concepts and laws lay at fault (see United Nations own assessment, as presented in *The Guardian*, 2022; see also Rodriguez-Labajos et al. 2019).

At best, the future will include a blend where modernity is merged with the ancient ways of the last 47,000 years. Many of such moves exist (e.g. Ludlam, 2021; Majumder, 2021); and what other options do we really have left? Such a style will certainly do some good to the tropical landscapes and global processes, e.g. Hannah et al. (2020).

It's from such perspectives that indigenization, decolonization and repatriation must be seen. What can we give back and how done best for a future? The achievements and outcomes should be rather clear from that.

Textbox : First-hand incidence reports from Papua New Guinea (PNG) regarding its brutality, rocks thrown, axing, machete injuries, wife bashing, claimed cannibalism and crime rate (experiences by FH)

I have been visiting and traveling in PNG for several years, and hear reports by co-workers about mass rock-throwing toward busses (“stoning”). I have also been called at 2 am by compound neighbors about a break-in and intruders still in the area. A close research colleague from the bush reports to me machete injuries by their husbands as the most common injury among females reported to western doctors. I further read and heard news reports repeatedly of axing, e.g. of the local judge or unpopular people in the community. Wife bashing is exposed as ‘bad’ in public posters with calls to end it and exposing much of the brutal reality of widespread domestic abuse and helping to avoid this calamity. A missionary reports to me about the break-in of his house with his kids being traumatized for years. Another coworker got dragged down by the bilum on the market, nobody came and helped (likely for reasons of fear and payback). Myself, I got chased by a local teenager (on drugs) with a machete, I tried to lock myself into my bamboo hut until I realized those walls are rather thin. And I drove with a public transport bus through the front lines in a village fight, we rerouted for that reason. Reports of such kind can be endless and filled with terror and fear. Clearly, the crime rates in PNG are high. But then, I came back each time fine and I was never harmed. As a matter of fact, more than once I was protected by my co-workers or other local people—including a police officer guiding me through the neighborhood—who saw a potentially dangerous situation to occur. I was safe!

For the western mind, that's a lot to swallow and to stand. But those who read *The Secret Barrister* (2018) will agree, the western civilization comes with aggressions and microaggressions, and it's not the harmonious and peaceful place many believe it is whatsoever.

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