'Crouching Tiger, Hidden Dragon'[1]: uncovering some questions about sustainable livelihoods in Southeast Asia

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I am searching for a construct that meshes together environment and people, one that allows geographic inquiries about Southeast Asia to draw from the traditions of physical geography, the social sciences and the humanities. Perhaps the answer lies in the notion of 'sustainable livelihoods'? Here I want to get back to sustainability in an environmental or ecological framework rather than a weasel word corrupted by business and political interests[2]. The Australian Curriculum frames sustainability in terms of the ongoing capacity of Earth to maintain all life (ACARA, ND) and the Australian Curriculum Geography aims to provide opportunities for students to investigate current geographical events and allow them to evaluate their findings against the criteria of environmental sustainability, economic viability, and social justice (ACARA, 2011). All three concepts are central to sustainable livelihoods but the real 'bottom line'[3] is environmental, Australian environmental educators explain that human existence depends on the dynamic interplay of all planetary systems, upon viable ecosystems, healthy soils, a stable climate, clean air and water (AAEE, 2009).

Obviously, different people will have different views on what a sustainable livelihood looks like but collective livelihoods or a sustainable community is underpinned by viable ecosystems, social well-being and cultural cohesion, and a prosperous economy (Department of the Environment, Water, Heritage and the Arts, 2009). Sustainable livelihood, as teased out by the global education community, is more concerned with the ability to continue an activity or maintain a certain condition indefinitely (Eckersley, 1998, 6). Just as the term 'sustainable development' has shifted its meaning to mean 'sustaining development' – rather than sustaining nature, ecosystems or the earth's life support systems[4] so too Oxfam sees sustainable livelihoods as a means whereby 'an individual or group has the capacity to maintain or improve social, political, economic, and other opportunities in life, without jeopardising the opportunities for others or for future generations. The capacity to resist 'shocks' and sudden changes, and to create opportunities, is a characteristic of sustainable livelihoods' (Eade & Williams, 1995, 20). Here, the notion encapsulated in the Brundtland Report, Our Common Future, is perpetuated in that sustainable patterns of living meet the needs of the present without compromising the ability of future generations to meet their needs (ACARA, ND). Sadly, many of the ecological dimensions of sustainability have now been set aside.[5]

Sustainable livelihoods, whether at the individual, household or community level, must be built on the integrity of ecosystems, the maintenance of biodiversity, rates of use of renewable resources do not exceed regeneration rates, and, rates of waste generation of pollution emission that do not exceed the assimilative capacities of the environment (Black, 2005, 25). This collection of ideas has been described by Harvey (1996) as 'environmental issues' arguing as he does that each and every one of us is situated in an environment[6],

[1] 'Crouching Tiger, Hidden Dragon' is a common expression which refers to the mysteries that lie below the surface of society and our everyday lives'. Retrieved June 2012 from http://csc.ziyi.org/filmography/cthd/titlemeaning.html

[2] Porritt (2007) discusses the mismatch between the core principles of ecological limits and the ways in which sustainable development is used in business circles 'here the language of the triple bottom line (economic, environmental and social bottom lines) still prevails, or 'stakeholder strategies', or corporate social responsibility (CSR), all jumbled together in a goulash of jargon and lofty aspiration that somehow still serves to keep physical reality at bay' (33).

[3] The triple bottom line: economic, ecological and social, also known as people, planet, profit or three pillars was coined by John Elkington in 1994. Retrieved June 2012 from http://www.economist.com/node/14301663

[4] This was encapsulated in a 1992 World Bank report which asked, 'What is sustainable? Sustainable development is development that lasts' (Sachs, 1993,10)

[5] McManus (1996, 56) points out, ' since the release of Our Common Future (1987) relatively less attention has been paid to sustainability. I believe this is largely due to the ease with which the word 'development' can be interpreted to mean "growth" '.

[6] Described by Harvey as, 'whatever exists in the surroundings of some being that is relevant to the state of that being at a particular place and time' (1996, 118).

there we focus on the relationships between human activity and well being on the one hand and the series of issues outlined above on the other.

Unifying society and nature

Some geographers and science and technology scholars have gone much further to question whether it is useful or instructive to make an artificial divide between society and nature, or, people and the environment. Head (2004, 244) explained that the origin of the society-nature split is to be found in the process of urbanisation that historically divided the city from the countryside and alienated labour from nature. Smith (2008) coined the term *the production of nature* to explain how economic growth in societies finds a way of altering nature so completely that nature is made to order in capitalism's relentless pursuit of profits. This *second nature*[7] is far removed from a notion of pristine wilderness, ecological unity and the interdependence of all species or 'first nature bequeathed by evolution' (Castree, 2005, 161).

However, we need to dig deeper to unearth the notion of sustainable livelihood, to tease out the complex interactions among the many specialism within geography and to contemplate how it is that human actors are, and always have been, part of complex and changeable biophysical systems (Castree, 2005, 235) Smith is not implying that every 'atom of some tree, mountain or desert is humanly created, any more than every atom of the Empire State Building is created' (Smith & O'Keefe, 1996, 291) because matter is neither created or destroyed. But he does argue that human activity is instrumental in the production of nature rather than envisage a mere human domination of nature.

Ecologists similarly see human activities as embedded in nature. Suzuki (1990, 109) explains, 'The atoms we take in the air to become parts of our bodies were once the parts of other people, of trees, of worms, of snakes and spiders. The water we drink in Australia was once part of the Amazon jungle, the forests of Canada and the oceans of the world'.

Many indigenous people would also see themselves as an integral part of the environment further legitimating the notion of sustainable livelihood as an entry point for geographical inquiry. Berkes (2008, 7) explained that indigenous ecological knowledge is '... a cumulative body of knowledge, practice and belief evolving by adaptive processes and handed down through the generations by cultural transmission about the relationship of living beings (including humans) with one another and with their environment'. For indigenous groups, land is held communally, and is seen as held in trust for future generations. In Irian Jaya, this is '… the place where their bones remain and where their ghosts and spirits still wander' (Eaton, 1997, 225-6). Land, both farmed and forested, holds a deep social and spiritual significance. The notion of sustainability is an absolutely integral part of indigenous culture.

Geographers have long written about human domination of the earth's surface, ecosystems, hydrosphere and atmosphere (Thomas, 1956, Marsh, 1965, Glacken, 1967, Goudie, 1981, Turner et al 1990) but contemporary geographers go further. Head (1993) showed how human and physical geographies can usefully combine to demonstrate how Aboriginal cultural landscapes have affected the natural environment over successive periods of time extending back to the Pleistocene, a view that has been substantiated more recently by Gammage (2011). Head also (2004, 245) referred to the creation of fertile terra preta soils in Amazon rainforests, rich black or brown soils enriched with humus and imbricated with pottery shards and animal bones. A number of recent studies now suggest that 'prehistoric' human activities were far more extensive than originally thought in the Amazon, Congo and rainforests of Southeast Asia. For example, the lowland rainforests of Thailand have been managed from as early as 8000 years ago and in these forests human occupation and management of the land may have increased tree diversity (Willis, Gillson & Brncic, (2004)

On the one hand Pittman advocates 'the study of the earth as a single, integrated physical and social system' (Inkpen, 2009, 387) but this implies study at the macro rather than household level.

[7] Head (2000) in *Second Nature: The History and Implications of Australia As Aboriginal Landscape* saw second nature in terms of habits or characteristics 'not innate but so long practiced or acquired as to seem so' She also referred to Glacken's (1967) conception of second nature as the transformations that humans make of the earth. Glacken, in turn, based his ideas of second nature on Cicero (Smith, 2008, 66–7)

On the other, many geographers now focus on the personal scale, the body being poetically construed as 'the geography closest in' (Rich, 1986, cited in Bell & Valentine, 1997, 25), a scale crucial to the understanding of a sustainable livelihood. At the macro scale Kates (cited in Inkpen, 2009, 396–7) has shown how sustainability science has altered our understanding of the fundamental character of interactions between society and nature by focusing on the interaction between global sociological and ecological processes. But these manifestations vary from place to place and the focus of such inquiry can be usefully reduced to the scale of the individual, household, or community in terms of sustainable livelihood.

The notion of the hybridity of society and environment developed outside geography by science and technology scholars such as Haraway (1991, 1997) and Latour (1993); and inside geography by Whatmore (2002) and Hinchcliffe (2007) is a further attempt to dissolve the distinction between culture and nature. Whatmore moves geographical inquiry far beyond its traditional attention to 'the interface between social and natural worlds' (2002, 2). Similarly, Hinchcliffe argues that 'non-humans are lively and dynamic colleagues in the making of worlds' (2007, 1). But it is to the real world of sustainable livelihoods played out in place rather than a 'thinking space' that is my focus here.

Moral geographies

If we accept that environmental sustainability, economic viability, and social justice are important organising ideas in Australian Curriculum: Geography and, should we accept that 'society's proper objective should be to obtain the highest feasible welfare' (Beckerman, 1995, 2) then people in Southeast Asia cannot morally be condemned to live in poverty and destitution in the interests of preserving ecosystems. Blaike (1985) talks of the 'desperate ecocide of the poor' whereby people living on marginal lands tend to be poor and they lack the resources to make the land more productive. This forces them to degrade the resource on which their lives depend.

In the last few decades of the 20thc Geographers wrote of 'the illegal encroachment of land-starved farmers into reserved forest — a widespread phenomenon in South-East Asia (Potter, 1993). But perhaps there was no alternative to this course of action? 'Encroachers may be acutely aware of the environmental impact of their actions, both on themselves and on others, but their individual short-term needs have to take priority over the longer-term consequences for society as a whole' (Parnwell & Bryant, 1996, 320). These 'forest eaters'[8] were regularly condemned for their actions, often made scapegoats for rainforest degradation and widespread wildfire[9] but there were usually other structural forces at work to explain their dilemma, for example, wealthy landowners with disproportionate shares of land, chronic indebtedness, and, lack of land reform. The 'ecocide of the poor' thesis has tended to be discredited because there is much evidence in Southeast Asia that farmers can adjust their cultivation methods, embracing new crops, using organic and artificial fertilisers, developing agro-forestry systems, contour ploughing, building rock walls and constructing hedgerows (Rigg, 2003). For example, in the provinces of Yogyakarta and Central Java, Nibbering (1991) showed farmers successfully adapting their methods following rapid population growth. He writes that: 'the destitution of the population and the seemingly hopeless nature of the environmental situation some 30 years ago did not hinder but rather generated a drive for change' (1991,130).

When Mahathir Mohamad, Prime Minister of Malaysia, 1981–2003, spoke at the 1992 ASEAN summit in response to the suggestion that tropical

[8] 'The heritage of future generations (if any) is being wantonly sacrificed for short-term gain in a manner that recalls to mind the old and almost forgotten weight of criticism directed at farmers practicing shifting cultivation. In denigrating the improvidence and lack of foresight of these supposedly primitive 'mangeurs de la foret' it seems we were in greater truth describing ourselves' (Brookfield, 1975, 2003) cited in Connell & Waddell, 2007, 13.

[9] During the last five years of the 20thc Indonesia, and particularly Sumatra and Kalimantan, suffered from extensive forest fires. 'The Indonesian authorities have tended to 'blame' small-estate crop growers and shifting cultivators for the fires. In the official view of events, they are 'ignorant' of the environment and clear their land using fire. This allocation of blame to shifting cultivators – often termed, in rather more incendiary terms, 'slash and burn' cultivators – is not accurate. There are few true shifting cultivators in Indonesia and most of those who use fire to clear their land are settled agriculturalists employing rotational systems' (Rigg, 2003, 298).

rainforests are part of the world's common heritage his response reflected an 'Asian Way[10]': a counter to western environmental imperialism. He sought to mock those that condemned primitive forest tribes to 'eating monkeys and suffering all kinds of tropical diseases' instead of making them conform to modern habits (Mallet, 1999, 191). On the other hand, Dr. Mahathir met with NGOs in 1992 after the Rio Earth Summit to declare that NGOs were no longer the enemy thus leading to discussions about the previously denied problems of illegal logging and the implementation of existing logging laws themselves (Eccleston & Potter, 1996). When we contrast this with the poetic lamentations of anthropologist Wade Davis: 'Today, throughout Sarawak, the sago and rattan, the palms, lianas and fruit trees lie crushed on the forest floor. The hornbill has fled with the pheasants, and as the trees fall from the forest, a unique way of life, morally inspired, inherently right, and effortlessly pursued for centuries, is collapsing in a single generation' (Davis, 1993, 31) some of the complexities of an examination of sustainable livelihood arise.

'By our theories you shall know us' (Harvey, 1969, 486)

Beneath all these powerful discourses we can disentangle a number of perspectives. Dr Mahathir was at first espousing modernisation theory, strongly grounded in neoliberal ideology, implicitly believing that market mechanisms are the preferred solutions to most political problems and that a 'remedial science' (Harvey, 1996, 374) exists to cope with the difficulties that arise after forest harvesting. His altered stance, and it should be appreciated that he was addressing different audiences, might better reflect 'ecological modernisation' whereby prevention is regarded as preferable to cure and that society should adopt a proactive stance with respect to environmental regulation and ecosystem control (Harvey, 1996, 377). Davis points to an 'environmental justice and defence of the poor' perspective that rejects universal economic and ecological rules to favour the rights of local people to be in charge of their resources and to build sustainable livelihoods, their rights to communal ownership, traditional worldviews, and cultural autonomy (Sachs, 1993)

Recent ideas about what Castree (2005, 234) calls 'new ecology' have become important for environmental geographers. The old ecology tended to stress the stability of interactions within ecosystems. So, for example, in the Dipterocarp forest ecosystems of Southeast Asia trees, climbers, stranglers, herbs and epiphytes interact with decomposers such as termites, tiny soil animals and microorganisms, with the various manifestations of monsoon climates, the ion pool bound up in the soil minerals and with the movement water through, across and out of the ecosystem (Schulte & Schone, 1996, 7). The old ecology treated humans as well adapted parts of the wider ecosystem, for example, the Penan of Sarawak, referred to by Davis; or, as disruptive exogenous forces that affected these ecosystems, for example, through the RM13.44 billion Ninth Malaysian Plan (2006-2010) for Sarawak, designed to lead to high growth, employment opportunities and the reduction of poverty. With a twin emphases on large-scale commercialisation of oil palm and the development of an industrial corridor, the Sarawak Corridor of Renewable Energy (SCORE) will inevitably degrade the biophysical environment.

The new ecology not only challenges the equilibrium assumptions in the new model but rather 'accents disequilibria, instability, and even chaotic fluctuations in biophysical environments, both "natural" and human-impacted' (Zimmerer, 1994, 108) it also refers to 'nature-society hybrids' with humans as already part of complex and changeable systems and challenges the assumption that human interference is always deleterious. The new ecology asks us to 'see the world as a mesh of multi-scalar and sometimes knottings of people (with varied outlooks, economic practices etc), plants, animals, soils, water, forests and much more' (Castree, 2005, 235).

Disequilibria is evident in the forest garden, or

[10] An apparently distinctive Asian approach to development that achieved rampant economic growth but avoided the social costs of progress such as high crime rates, family break down and the abuse of drugs

Theun-Hinboun Dam Wall, Central Southern Laos. Photographer: Laurence McGrath. Source: Wikimedia Commons

Tembawang system in Sanggau Regency, in West Kalimantan, Indonesia where the villagers of Lape respond to the vagaries of the ENSO phenomenon by rapidly harvesting valuable tengkawang nuts and durian fruit to sell them on roadside stalls on the road to Sanggau, particularly relying on the more wealthy travellers from Kuching in Sarawak. The tenkawang harvest of 2002 was the first since 1997 causing considerable excitement among the villagers (Potter & Badcock, 2007). A sustainable community[11], such as Lape village, that specialises in rice production and fruit selling has to adapt to various contingencies. Throughout Southeast Asia people have to adapt to fluctuating environmental conditions (for example, rainfall, temperature, tectonic activity), demographic changes and technological developments. What is interesting about Lape is that the villagers have twice rejected the overtures from the government oil palm plantation that borders their village; they also dislike acacia plantations.

The enmeshed multi-scalar world is evident in Laos, one of the four Least Developed Countries[12] that exist in Southeast Asia. A number of countries have farms and plantations in Laos. There are Chinese owned enterprises in the north, Scandinavian, Japanese and Indian ones in central Laos and Thai, Vietnamese and Malaysian-owned farms and plantations in the south (Paul, 2010, 61). A small village of 65 households in central Laos, Ban Pak Veng, in Khammouane province serves to illustrate the intricate webs of the 'new ecology'. The villagers were shifting cultivators, growing hill rice in the forested uplands but have more recently developed wet rice cultivation based on the annual flooding of the Nam (river) Hinboun. Their lifestyles have been altered by a number of exogenous factors and subsequent changes to the river regime and their access to communal land. Firstly, in 1998 the Lao PDR initiated the Theun-Hinboun hydropower project, a scheme that diverted the headwaters of the Theun-Kading river system into the neighbouring Hinboun catchment. The rice paddies were inundated with water and local fisheries severely disrupted in

[11] There is a further aspect to sustainability here because small farm households spend their incomes on locally produced goods and services, thereby stimulating the rural non-farm economy and creating additional jobs (Hazell, Poulton, Wiggins & Dorward, 2007). Employment –intensive small-scale farming also tends to be more pro-poor than in larger enterprises (Hunt & Lipton, 2011).

[12] 49 countries are currently designated by the United Nations as 'east developed countries LDCs; they include Cambodia, Lao PDR, Myanmar, and Timor-Leste

subsequent years. Villagers reverted to upland rice production and the collection of non-timber forest products and wildlife, in a precarious attempt to maintain rural livelihood. However, in 2001, one third of the village's upland rice growing land was zoned as commercial eucalyptus plantation by the Lao Land and Forest Allocation program. The villagers received paltry compensation amounting to some $600 per year. The New Zealand-based transnational corporation BGA-Laos Plantation Forestry Ltd sold out to Asia's largest paper producer (Oji, from Japan) in 2005 (Barney, 2007). By 2007 the eucalyptus plantations were well established with villagers attempting to plant upland rice between the company's trees. Two years later the rapidly closing canopy and acidic leaf litter precluded upland rice cultivation. The Lao forestry sector explicitly encourages the export production of eucalyptus wood pulp but vulnerable local communities like Ban Pak Veng become increasingly impoverished. Many of the young women and female teenagers and some of the male teenagers have sought work in Vientiane and across the border in Thailand but many of these migrants from Pak Veng don't have official documentation or passports. They are illegals in Thailand and are thus very vulnerable to exploitation. The money that is sent home from these young people are currently being used by their parents to invest in a new agricultural boom crop – ***nyang phala***, or rubber[13] trees (Barney, 2009). New dwellings, wood-framed with corrugated iron roofs, elevated on stilts are being constructed in Pak Veng.

Realising hope: a better world for all?

To what extent does the 'new ecology' allow for a consideration of the wider geographical framework, a construct based on modernisation theory? Paul (2010, 135) argues, 'A neoliberal global economic order fuels competition within ASEAN to attract foreign investors by securing cheap and obedient labour and offering attractive financial incentives and pressures for countries to export more to pay for the rising costs of import dependency'. Obviously, the perturbations of the global economy have direct affects on the sustainable livelihoods of households and communities. One can but imagine the affects on people living in Johor Baru, Malaysia, at the height of frenetic economic development in Southeast Asia, before the 1997/8 Asian financial crisis, where the extravagantly named 'river' the Sungei Segget 'is a rank, black, stagnant, noisome ditch, filling the town centre of Johor Baru with the aroma of raw sewage and rotting carcasses. At first sight and smell of the Sungei Segget, it is no longer difficult to imagine the river must flow through Hell (Rashid, 1993, quoted in Mallet, 1999, 168).

The 2008–9 global financial crisis had marked nocuous effects on rural households in Cambodia. Young women were being laid off in the garment industry, centred on Phnom Penh, as a result of reduced demand from United States and European consumers. Textile exports to the US and Europe, the country's main markets, fell by 23% in 2009 (Dasgupta & Williams, 2009). The vast majority of garment workers were obliged to send money home to their families in the rural villages providing an economic lifeline for rural livelihoods across the country. Typically these young women supported three to five family members living in the villages. They have come from rural, subsistent agriculture-based families with few assets. Their parents were often too elderly to work on the farm, and female members were not considered capable of much of the manual farm work, so the family needed to hire seasonal workers. Female household members were thus sent to work in Phnom Penh to help finance the seasonal workers and provide vital support the household economy.

A survey of these workers in 2009 revealed that 52% said they had insufficient income to send money home to their families. The rural families sought to cope in a number of ways. The young women's parents sent rice and food to their migrant children in the city; any surplus household labour was sent to work on available agriculture jobs in the village and nearby villages, for example, cattle watching and rice harvesting to earn extra income; young children had to help out on

[13] Rubber plantations are expanding rapidly throughout mountainous mainland Southeast Asia By 2050, the area of land dedicated to rubber and other diversified farming systems could more than double or triple, largely by replacing lands now occupied by evergreen broadleaf trees and swidden-related secondary vegetation (Ziegler, Fox & Xu, 2009).

the farm and/or household after school and on weekends. Once these resources were exhausted, parents expected their children to return home. Many chose to stay in the city and they were joined by a young female sibling sent to the city to seek work when, by 2009, 80% of these young women were looking for work (Dasgupta & Williams, 2009). If they were lucky they were offered short term, three month or six month contracts.

Smith (2008, 266) recalled the thoughts of Donna Harraway some twenty years ago. 'If I had to be honest with myself, I have lost the ability to think of what a world beyond capitalism would look like.' Some governments have attempted to work within the capitalist system and attempt to redistribute the wealth towards poorer households. In 2005 the Indonesian government initiated the 'unconditional cash transfer program' in an attempt to compensate poor families for an increase in fuel prices, and, Thailand has adopted universal health care. Originally called the '30 baht scheme' people had to pay a little less than $1 for each out patient or hospital visit but now the co-payment has been abolished, and drugs on prescription are also free of charge (ESCAP, ADB &UNEP, 2010, 61).

On a multilateral level there are efforts to redefine poverty at the household level. A new multidimensional poverty index has been recently launched where one the developers of the index explained 'Before, you might know a person was poor but did not know if their children went to school, if they had a floor or if they cooked on wood' (Burke, 2010). However, more conventional views of sustainable livelihood under capitalism have been replaced by 'an appreciation of geography – different places develop in different ways' (McGregor, 2008,13). Further, Blaikie, explained that projects that looked at sustainable livelihoods, whether they be sustainable agriculture or health, welfare or education-based emphasised participation in which 'local people use their own knowledge and skills to work out their own solutions to the problems that they set themselves' (2000, 1044). Geographers specialising in Southeast Asian development recognised that 'Rather than liberating poorer countries development is portrayed as a myth that has dislocated people from their cultures, lands, spirituality and traditions as they unsuccessfully pursue the consumptive lifestyles of rich countries. Only a small selection of elites actually achieve this end while the vast majority become stuck within a global production system that severs them from their past while promising them an unachievable future' (McGregor, 2008, 14).

Of course there are those that reject any notion of sustainable livelihood, believe that social justice is part of a left wing conspiracy and expunge any notion of environmental sustainability from their vocabulary in an all out focus on economic viability. Parnwell and Bryant (1996, 332) refer those that deliberately over-exploit resources for personal or corporate gain, explaining that these people are often drawn from the political, business and military élite. It is easy to be seduced by the 'Southeast Asian Miracle' that preceded the 1997-8 cataclysm. 'In the years running up to 1997, a select band of East and Southeast Asian countries experienced perhaps the most rapid and sustained period of growth in human history. This growth was not a mere statistical sleight of hand: never had so many people been plucked out of poverty over such a short period of time' (Rigg, 2002, 137 quoted by McGregor, 2008, 55). Whether this miracle was accomplished by neoliberal economic policies, high domestic saving and investment, tax incentives, secure financial systems, competitive exchange rates, export-focused enterprise that is open to overseas investment and the transfer of technology, and, hospitable to investment in property; **or** whether it was accomplished by strong government, targeted government intervention, sizeable investment in human and physical capital and firm control over workers wages both sets of ideas say little about sustainable livelihoods. Nevertheless, it is difficult to deny that the lives of millions of people in Southeast Asia have been improved materially in a climate of remarkable political stability.

Such a broad-brush examination paints over a number of internal contradictions that mitigate sustainable livelihoods. Firstly, accepting the notion that capitalism is the most efficient system for generating wealth in Southeast Asia and even accepting the manner in which it generates inequality because this can be more equitably

distributed in later stages there still remains a major problem: such development fails to account for environmental decline. Harvey (1996) asks us to imagine a conversation between an economist and geologist. 'The former holds that the appropriate time horizon is set by the interest rate and market price, but the geologist, holding to a different conception of time, argues that it is the obligation of every generation to leave behind an aliquot share of any resource to the next', (229). Sachs (1993) criticised viewpoints that both favoured ecological and economic arguments because, 'both pass over the rights of local communities to be in charge of their resources and to build a meaningful society. The conservation of nature [should be] intimately related to rights of communal ownership, traditional ways of knowing, cultural autonomy, religious rituals and freedom from state-centred development' (quoted in Harvey, 1996, 390). Pivotal to the notion of sustainable livelihoods, these kinds of arguments were reinforced, in somewhat more forceful terms, by Sen (1999). He maintained that despite the apparent overall increase in wealth development is the process of expanding human freedom. It is 'the enhancement of freedoms that allow people to lead lives that they have reason to live'. Hence 'development requires the removal of major sources of ***unfreedom***: poverty as well as tyranny, poor economic opportunities as well as systemic social deprivation, neglect of public facilities as well as intolerance or overactivity of repressive states (1999, 35).

Visioning a sustainable society

What does a sustainable society look like? Meadows et al (1992, 209) maintain that it is 'one that can persist over generations, one that is far seeing enough, flexible enough and wise enough not to undermine either its physical or its social systems of support' Orang Suku Laut, or Sea Tribe People of the Riau archipelago resisted the efforts of the Suharto regime to resettle them in pile driven villages, adjacent to the sea. For the majority of Indonesian these 'sea gypsies' were regarded as primitive people without religion and culture, impure people from an Islamic point of view. Orang Suku Laut have shown remarkable flexibility and wisdom. Many now make a living in a growing marine ecotourism sector. They are involved as guides, boat handlers and running home-stays and warungs[14]; they make ornaments from local sea shells; and, they act as marine park rangers where their knowledge of the reefs, fish stocks and clams are invaluable (Djohani, 1996, Lenhart, 2001).

The three dimensions of sustainable communities the ecological, economic, and social (Cocklin & Dibden, 2005, 25) can be illustrated by reference to a number of case studies from Southeast Asia. In the 1980s Chin (1985, cited in Parnwell and Taylor, 1996, 261) made an intensive study of a lowland Kenyah community in the upper tracts of the Baram River, Sarawak. They were able to enjoy the abundance of a forest ecosystem because the ecosystem integrity had been preserved. They hunted, fished and collected traditional non-timber forest products to the extent that the contribution of purchased food was negligible. However, Chin also saw the day rapidly advancing when logging would destroy primary and secondary forests, resulting in a scarcity of trees for boat building and the destruction of wild *illipe* nuts.

Another aspect of the ecological dimension involves the maintenance of biological diversity. Biodiversity is maintained in Brunei's primary rainforest reserves where public access is limited by legislation and the destruction of plants and animals is strictly forbidden. One such reserve, the Batu Apoi Reserve is said to contain the 'finest remaining generally undisturbed Mixed Dipterocarp rainforest in Southeast Asia' (Dykes, 1996, 291). However, we should pay heed to Cochrane's observation, 'As a result of Brunei's valuable oil and gas resources, the government has so far been able to promote national economic development without significant environmental degradation. However, as oil and gas reserves are depleted, maintaining a balance between conservation and development will prove more difficult' (299).

Another, is the dictum to ensure that rates renewable resource use do not exceed regeneration rates. The taungya system of shifting cultivation as practised by Karen in Burma involved

[14] A warung can be a little shop, a small outdoor restaurant, a cafe, or a stall/booth and usually it is a business place owned by a family.

Bario village, Sarawak Source: Wikimedia Commons

the replanting of teak in abandoned gardens where trees were cared for, monitored and harvested selectively and sustainably (Perry, 2007, 85). Unfortunately, as with the exploitation of other resources in Myanmar the military junta has been keen to sell off teak and offer concessions to Thai and more latterly Chinese interests to the extent that there has been uncontrolled logging in states bordering Thailand and China (ITTO, 2004).

Rates of waste generation of pollution emission should not exceed the assimilative capacities of the environment. Such a condition can be examined in relation to an urban solid waste management project in Bandung, Indonesia (Poerbo, 1991, cited in Pacione, 2001, 586) where over a three year period waste was sorted and resold, organic waste was composted, seeds were collected from the refuse and a seed farm was set up, rabbit raising was encouraged, housing improved, toilets dug and health and maternal care facilities were set up. The tips in Bandung became a source of sustainable livelihood for significant numbers of town dwellers living on the tip.

The economic dimension of sustainability relates to the degree by which systems of production, exchange and consumption can continue into the future. Pred Nai Community Forest, one of the last remaining mangrove forests on Thailand's eastern seaboard, is managed sustainably. The villagers have replanted mangrove trees and imposed strict harvesting regulations on catches of small crabs and set up 'crab banks' for mud crabs – capturing the eggs and setting up cages in the canals. The mangrove ecosystem not only provides a source of income, it also is the basis of a whole way of life. Although the village is not particularly poor it is the poorest who benefit most from collecting crabs. Economic sustainability has been enhanced through the establishment of a credit union. The accumulated funds totalled some six million Baht ($72 000) in 2004 (Kaewmahanin, Sukwong & Fisher, 53). The villagers now conduct study tours for interested overseas visitors, teach local children about mangrove ecosystems and marine resources and, in 2002, gained recognition in the form of a prize awarded by the royal Forest Department.

To be economically sustainable satisfactory standards of living for all should be achieved now and maintained into the future. Thirty years ago the spread of Green Revolution high yielding varieties throughout Java raised farmers living standards. They were able to grow three crops of rice a year as year round irrigation water supplies were secured. They could grow sufficient rice for their needs with the proceeds of two crops so farmers began to look at more profitable alternatives to sell in local markets. ***Lokal*** rice commanded a higher prices than the high yielding

varieties and ***palawija*** crops, dry season crops of maize, manioc, sweet potatoes, ground nuts, soy beans and mung beans also became attractive (Brookfield, 2001, 234). More risky but higher priced tomatoes and chillies were grown by some farmers as the growers established more economic security. To what extent this kind of lifestyle can be maintained into the future is problematic, to say the least. As far back as the early 1990s researchers were reporting that in rural East Java the population was increasingly dependent on employment in the industrial sector; that paddy fields had been abandoned to bushes and shrubs in Negeri Sembilan, Malaysia and that the rubber holding were so overgrown indicating that no one goes tubber tapping anymore (Rigg, 2003, 242). From the town of Majayja, 35 km southeast of Bandung, in Java, the mini buses full of commuters clog the roads at 6.30 am and 5 pm as workers are carried in and out of the factory gates (Rigg, 2003, 230).

For a community to be sustainable rates of use of non-renewable resources should not exceed the rate at which sustainable renewable substitutes are developed. Hmong people, an ethnic minority living in the highlands of northern Vietnam, have rapidly developed a market for non-timber forest products for which there does not appear to be a substitute. They cultivate Black Cardamom, used as an ingredient in over 30 Chinese medicines to treat stomach aches, constipation and dysentery among other ailments (Tugault-Lafleur & Turner, 2009). The cardamom used to grow wild in Hoang Lien National Park but the Hmog have propagated the rhizomes and successfully grown them under the shade of trees in Lao Cai province. The villagers have been able to buy TVs and motor-bikes with their returns from cardamom and save for weddings, funerals and celebrations at Hmong New Year.

The social dimension of sustainability can be illustrated by the extent to which there are some widely accepted and enduring norms or values, such as reciprocity, procedural equity and respect for law. In the study of the Kenyah, reported by Chin above in the past the people of the longhouse, or bilek, were obliged by adat[15], or traditional law, to share their resources. When there was plenty of game to be had hunting parties were obliged under traditional law to share their spoils with other members of the longhouse community. More recently hunters consume all their own bush meat or sell it on to others. The sense of reciprocity that underpinned sustainable livelihood in this community has been eroded. Commonly heard statements included, 'if I have no money I just have to watch others eat [meat]' (Parnwell and Taylor, 1996, 281).

Another social aspect of sustainability asserts that both individual identity and cultural diversity should be maintained. The Lakag T'boli fought a long battle with wealthy cattle ranching interests over their ancestral land in the southern Philippines. At one stage the local armed forces became involved shelling the Lakag T'boli occupation of their traditional land. The families retaliated by camping outside the provincial government headquarters in town. Such was the resolve of the Lakag T'boli that after each destructive act the community replanted their crops and set about re-establishing their livelihoods. Such was their resolve that the cattle ranchers abandoned T'boli land in 1995(Hyndman & Duhaylungsod, 1996). Lakag T'boli strong sense of ownership both as individual and as a cultural group always maintained that the ranchers had been squatting on their land.

Finally, social institutions should be able to make a continuing contribution to the fulfilment of people's needs. There is some evidence that the social institution of the family, more particularly women's roles in the family has been changing in Southeast Asia. Generally women were regarded as prominent members of Southeast Asian society in terms of descent, ritual matters, marketing and agriculture (Reid, 1988, 6). But, as young women have been given the opportunity to work in urban areas they have been able to escape 'the overweaning clutches of the household' (Rigg, 2003, 245). Interestingly, when these

[15] In neighbouring Indonesia the customary land rights of rainforest dwellers was recognized under law but adat was superseded by the nationalization of the forests and rendered obsolete by logging and plantation agriculture (Pearce, 2012).

young people return to the village to take up the responsibilities of farm work and family life their roles in the household has frequently changed. In Sulawesi, in the aftermath of the 1997–8 financial crisis young women forced to return to the village rather than resume household roles they instigating local credit associations and becoming increasingly involved in non-agricultural income generating activities such as petty trading, selling snacks and managing small shops or warungs. 'While this boosted household income it was rarely accompanied by a reduction in reproductive[16] duties that were seen as women's work, even if unemployed men had more time on their hands' (McGregor, 2008, 123).

Competing sustainabilities

In the conclusion to 'Environmental Change in South-East Asia: People, Politics and Sustainable Development', Parnwell and Bryant (1996) speak of the issue of a number of overlapping or competing sustainabilities. Consider the contradiction involved in meeting Southeast Asia's spiralling energy demand whereby ostensibly 'green', renewable hydro-electric power schemes are developed which, at the same time, undermine the sustainable livelihoods of those who must be resettled, or whose ecosystem will be radically transformed in the process. The Sarawak Corridor of Renewable Energy (SCORE) scheme mentioned above involves the construction of the Bakun Dam. Scheduled for completion last year, it will result in a complete and irreversible destruction of roughly 70 000 hectares of biodiverse forest ecosystem and fifteen Kenya, Kayan, Lahanan, Ukit and Penan indigenous communities have been relocated in poorly built longhouses with a mere one hectare of land available to each community member (Mohamad Idris, 2010). The SCORE scheme will be one of the major beneficiaries of power from the Bakun Dam and will support ten priority industries: oil-based, aluminium, steel and glass, tourism, palm oil, timber, livestock, aquaculture and marine engineering industries (Rose, 2010).

Parnwell and Bryant also refer to the Indonesian transmigration program 'which offers the prospect of a fresh start for the destitute of Java, but their arrival in transmigration sites often significantly interferes with the livelihood strategies of native populations' (1996, 333). Transmigration has also had a more sinister face where the TNI (the Indonesian military) have been waging war against the Free Papua Movement (OPM) in disputes that centre on the Freeport mine, operated by Rio Tinto Zinc. Whereas many Indonesians have been relocated to Irian Jaya, ironically, local Amungme and Kamoro tribes were forcefully relocated from their highland home, with thousands of indigenous people removed from traditional farming and food gathering territory. Moving Amungme tribes to the lowlands brought people without natural malarial immunity into contact with mosquitoes, resulting in higher mortality rates. Between 1996 and 2004 at least $50 million was spent by Freeport, officially on providing vehicles, accommodation and food for TNI personnel. Some of this money was also directed to the police's Mobile Brigade, notorious for its human rights abuses and murders (Kenny, 2006). Little prospect here for sustainable livelihood.

Other ways to examine sustainable livelihood focus on participatory development: from traditional ideologies through to Buddhist and Islamic perspectives that are concerned with ethical and moral issues as well the as practicalities of sustainable livelihoods. Such approaches are often more prone to include an ecological rather than a business or economic framework. For example, 'gotong-royong' or mutual assistance in Indonesia strengthened the movement that led to thousands of university students visiting rice growing villages to spread the benefits of Integrated Pest Management to farmers beset with plagues of brown plant hoppers. Under Buddhism 'right livelihood' is paramount, Buddhists reflect on the holistic nature of existence and, 'Buddhism is so close to nature that the religion deserves to be called a "religion of nature" ' (Rigg, 2003). Islam teaches about 'a concern for inequality and intractable poverty, a disgust with rampant materialism and consumerism, and a fear that mores are being undermined and ignored' (Rigg, 2003,60).

[16] 'Reproduction refers to both the biological and social roles that are acted out to enable the conditions for families, households and societies to be maintained' (Mcgregor, 2008,121)

Rigg (2003, 63) explains that a sense of the environment has a long history in Southeast Asia. 'In Thailand, for example, forest monks and the teachings of the Buddha, traditional human-land systems and modes of thought, and the communal management of village forests and wildlands all pre-date the rise of 'modern' environmental management and modern environmentalism'. By way of example, 'Across Thailand, for example, trees have been ordained (buat) to protect them from the chainsaw by encircling them in saffron cloth, while sacred groves (phai aphaithaan) have been created by enclosing them in sacred thread (saii sin)' (Rigg, 2003, 64).

A more romantic, or even ***Edenic***, view of sustainable livelihoods, one popular with young people on backpacking holidays, favours the development of ecotourism. The experience of the Mentawaians of Siberut National Park, on the Sumatran island of Siberut, is instructive. Obviously, for tourism to be sustainable indigenous communities have to be involved but the backpackers are brought in by guides from the Sumatran mainland to photograph people who still practise traditional lifestyles as hunter-gatherers. Unfortunately, most of the islanders 'cannot speak Indonesian, let alone English or other tourist languages; there are no handicrafts to buy; and the accommodation (which the local people share with their pigs) is unsuitable for foreigners' (Cochrane, 1996, 240). Tragically, it is the island's timber resources that are more valued than tourism by Indonesia. The prognosis for Mentawaians is not good.

However, we should not lose sight of the notion that sustainable livelihood presumes that that the human condition is being improved. Working in the mountains of northern Luzon, Philippines Lewis (1992) described Buguias as an environmental disaster area as a consequence of the spread of commercial vegetable farming. And yet the people were better off. In the old days a woman explained to Lewis 'life was terrible – we only ate sweet potatoes' (1992, 80).

Jagna municipality, Bohol Province, Philippines points to another approach to sustainable livelihoods (Gibson-Graham, 2006, 170-8). Here the aim is to strengthen the resilience of a local community by building on its assets and reducing reliance on external forces such as exchange rate fluctuations, that affect the amount of money Filipinos send home from overseas, or the roller-coaster ride in the price of agricultural commodities, that affect the farming communities. Small and income poor, the municipality consists of 30 000 people in 33 barangay, or subdistricts, half in the town of Jagna, adjacent to the Mindanao Sea, and half in small agricultural and fishing villages. The villagers grow wet and dry rice, coconuts, bananas, and in the uplands, cooler climate vegetables and flowers. The coastal villagers find it difficult to make a living from the sea because of the paucity of near-shore fish stocks.

A survey of the assets of the community included waterfalls, caves and beaches, lush forests, an unpolluted environment and adequate water supply. It was served by an active local government unit, supported by a local NGO, had schools,

Jagna, Bohol Province, Phillipines Source: Wikimedia Commons

hospitals, church organisations and a strong tradition of law and order. Jagna was connected to the outside world by useful mobile phone connections, Fed Ex, a government courier service and a large modern port. The people were well educated, showed respect for their elders, took care of the poor, send money home in the form of remittances, followed traditional and strongly held religious beliefs and showed enthusiasm for new practices. There are people working in the waged economy for the Philippines Port Authority, as waterside labourers, as farmers, fishers, drivers and artisans but many of the farmers are virtually working under feudal conditions as tenant farmers.

However, there are many different forms of unpaid labour in Jagna. 'Different forms of reciprocal labour exchange include the group practice of *hungus*, where a group of rice farmers band together to do voluntary planting, weeding or harvesting work on one person's farm with the expectation that this favour will be returned when needed, and the individual practice of *badsanay* in which labour services are exchanged upon verbal agreement. Payment in kind for labour includes the *sagod* system, a labour arrangement introduced after agrarian reform whereby landless labourers perform weeding on another's land and are granted the exclusive right to harvest that same plot for a percentage of the crop, usually one-sixth if the crop is threshed and cleaned; *guno*, the harvesting of corn in return for one-seventh share of the total; and *hagpat*, helping a fisherman pick fish out from the net in return for one-third of the catch' (Gibson-Graham, 2005, 15). There are many other reciprocal arrangements whereby people pool their savings to buy a water buffalo ceremoniously barbecued at fiesta time or allow villagers to draw out money sequentially from the pool each month. There is a tradition of giving goods or money to a family celebrating fiesta and providing interest free credit for the very poor in the sari- sari stores[17]. Volunteers help out in moving a house built of Nipa palm, clearing the irrigation channels and under the leadership of the Barangay Captain or a youth or women's organisation, everybody in the community helps in fixing up the roads or cleaning up the villages. 'Barter between coastal communities and the rice-growing uplands is still current with coastal people travelling to rural areas during harvest time to barter dried fish, wine, claypots, salt and cigarettes for rice. Rice farmers engage in a barter system called tihap, in which they receive money or fertilisers before or during the land preparation period and repay the donor in rice, with interest added in, after the harvest season' (Gibson-Grahame, 2005, 15). Community members share in funeral and wedding expenses and take part in a number of fund raising activities.

Gibson-Graham (2005) explain, 'This initial documentation of the diverse economy of Jagna indicates that there is a thin veneer of capitalist economic activity underlain by a thick mesh of traditional practices and relationships of gifting, sharing, borrowing, volunteering, and reciprocated individual and collective work'. The apparent resilience of the Jagna community could be likened to an ecological system where increased biodiversity enhances the resilience of the system. Gibson, Cahill & McKay (2010, 245) explain, in the Jagna context, 'The greater the variety of self-provisioning sectors and the more import replacing activities a local economy hosts, the less dependent it is on outside forces, and the more able it is to find favourable modes of relating to other local and distant economies'.

Urban dreams and realities

It is self evident that cities are placed upon, and integral parts of, a natural system consisting of land, water, plants, wildlife and climate (Davey, 1983, 143). Thus a city seen as an ecosystem draws our attention to these biophysical factors as the various elements of the city interact. Harvey (1996) claimed that New York City is an 'ecosystem' opening up the possibility for the study of a number of urban issues that affect sustainable livelihood: not only water supply, clean air, effluent, waste, and green space but also the demands that a city makes drawing its hydro electric power from dams in Quebec, water pipeline from up state New York and the gravel beds beneath the city (Braun, 2006, 218-9). As a global city, it is interconnected

[17] A sari-sari store is a convenience store found in the Philippines. The word sari-sari is Tagalog meaning "variety". Such stores form an important economic and social location in a Filipino community. It is present in almost all neighbourhoods, sometimes even in every street. Most sari-sari stores are privately owned shops and are operated inside the shopkeeper's house.

to the garment labourers' plight in Cambodia, the remittances sent back to Jagna and the minerals gouged out from Freeport in Irian Jaya.

Many of the consequences of rampant urbanisation are widely apparent in Southeast Asia: massive congestion in Bangkok, heavy pollution in Metro Manila and a generally poor living environment in Phnom Penh. But there are a number of surprises. There are peculiarly Southeast Asian urban developments described by McGee and Greenberg (2002) as Extended Metropolitan Regions 'mega-urban regions characterised by wide peri-urban zones with dense populations, a vital mosaic of agricultural and non-agricultural activities, and a tight interaction of people and activities ' (2002). McGee and Greenberg (2002) describe the Bangkok EMR as dynamic and Rigg (2003, 245) sees these agglomerations as reshaping three elements of Southeast Asian rural livelihood, the household, what it means to be rural and agricultural pursuits themselves. The Bangkok EMR can be seen as a form of industrial decentralisation but some of the industrial areas are very extensive. Ayutthaya province contains more than1 400 factories, employing nearly 200 000 workers, with less than 2 per cent of output of Ayutthaya province now accounted for by the agricultural sector. Here wage labouring in a factory for a stable salary has become the preferred livelihood choice for the young. But something is missing in terms of socially construed sustainable livelihood. No longer do people gather together for village events; they prefer to watch television alone. Fences and iron window gratings protect the inhabitants and their newly accumulated wealth, whereas in former times houses were left open as a sign of welcome (Rigg, Veeravongs, S., Veeravongs, L. & Piyawadee (2008)

In 2009, the online magazine ***Smart Travel Asia*** ranked Hanoi Asia's sixth best city for shopping after Hong Kong and Singapore but ahead of Bali, Shanghai, Tokyo, Beijing and Seoul (Montheard, 2010). A recent book 'Urbanization and Sustainability in Asia: Good Practice Approaches to Urban Region Development in Asian Countries" (Roberts and Kanaley, 2006), contains 37 case studies of "good practice' urban development projects presented from 12 countries in Asia: Bangladesh, Cambodia, China, India, Indonesia, Lao PDR, Malaysia, Pakistan, Philippines, Sri Lanka, Singapore, Thailand, and Vietnam. The section on Phnom Penh: municipality 'planning for all', reveals that an estimated 20% of the Phnom Penh City population is considered poor, with about 570 squatter and slum communities established throughout the city. The master plan looks at setting up four small satellite towns in order to cope with the city's urban sprawl. Should the four small towns be built successfully the core historical inner centre of the city will be preserved (Roberts & Kanaley, 2006).

Putrajaya, Malaysia, is planned as a model city

The model city of Putrajaya, Malaysia Source: Wikimedia Commons

designed to alleviate traffic congestion in Kuala Lumpur. Putrajaya has been developed as a model environmentally friendly city, embracing two main themes, city in a garden and 'intelligent' city. Here about 38% of the land is being developed into parkland. It contains the largest artificial; wetland in Malaysia with a total area of about 160 hectares, which is used for recreational activities as well as scientific and biological research. The city has a good communication network consisting of a monorail and water taxis, a broadband platform, and a common utility tunnel for services, hospitals, and schools.

Far from such planned environments are the shanty and squatter settlements of the poor. But even these areas can contribute to sustainable livelihoods. Pearce sees them as effectively functioning, socially vibrant and chaotic urban ecosystems. 'They are high-density but low-rise; their lanes and alleys are largely pedestrianised; and many of their inhabitants recycle waste materials from the wider city. So perhaps something can be taken from the chaos and decentralised spontaneity embodied in the shanties, and combined with the planned infrastructure of a designed city' (Pearce, 2006)

Southeast Asian cities can be spaces of hardship, with informal or poorly paid workers, inadequate housing and dangerous living conditions. On the other hand, 'Each narrow street is one long bustling market of food stalls, bars, cafes, hair salons, churches, schools, health clubs and mini-shops of tools, trinkets, clothes, electronic gadgets and pirated videos and music' (Brand, 2006, 6).

McGregor (2008, 151) maintains that 28% of all urban dwellers in Southeast Asia live in slum settlements. But whether these spaces should be seen as sites of crime, disease and poverty or whether they should be seen as vital cogs in a sustainable urban society is contestable. They can be portrayed as spaces of hope, places where many resourceful people are striving to escape poverty with every means at their disposal. Many of these people have flooded in from the countryside, with 70% of the petty street traders in Manila comprising migrants to the city. In Hanoi, more than 50% of the trash and treasure vendors come from one rural district south of the capital. Up to 40% of Bangkok's saam lor (trishaw) drivers are rural seasonal migrants and most tukang (manual workers) in Jakarta come from Central and East Java where they were former wage labourers in sawah (rice paddies) (Rigg, 1998, 504). Children work in the informal sector to improve their own and family livelihoods working as comic or newspaper sellers, umbrella bearers, 3-in-1 jockeys[18], food or toy vendors, scavengers, factory or construction workers, domestic workers or shoe shiners (Sanie & Baum, 2003).

Brand cites a 2003 United Nations report the points to the efficacy of community-based organisations: 'community theatre and leisure groups, sports groups, residents associations or societies, savings and credit groups, child care groups, minority support groups, clubs, advocacy groups, and more (Brand, 2006, 11). These institutions occupy an unfilled space in the city fabric running communal kitchens and setting up income earning and cooperative schemes. They provide a complex gel between the formal and informal sector with the home-based screen printer delivering freshly printed laundry bags to hotels and the bicycle courier delivering lunch boxes to a myriad of office spaces.

Learn from the past, watch the present, and create the future

By the turn of the century it was clear that Singaporeans were among the wealthiest people in the world (Leaf, 2007,158) and Malaysia was destined to become a fully industrialised economy by the year 2020 (Mallet, 1997:301). Samai pattana (the era of development) began as long ago as 1962 in Thailand and by the end of the first decade of the 21st century Thailand could be described as a middle income, mixed economy (Rigg & Salamanca 2009). Many Filipos now enjoy higher standards of living than they did twenty years ago and many

[18] 3 in 1 car pool jockeys are young people who occupy extra car seats in downtown Jakarta where the regulations decree that there needs to be at least three people in the car between 7:30 to 10:00 in the morning and 4:30 to 7:00 in the afternoon. A teenager described how he spent his income as a 3 in 1 jockey: 'Since my dad died and I became the provider for the family, my money goes to keeping my sister in school. She's 9 years old now. I want to make sure she gets a better education than I did. Also, I go and eat bakso [meatballs] occasionally with friends and buy myself jeans at Blok M Plaza every three months or so'. Retrieved June 2012 from http://www.thejakartaglobe.com/myjakarta/my-jakarta-muhammad-jian-3-in-1-car-pool-jockey/393424

citizens of Timor Leste and Myanmar look forward to more sustainable livelihoods.

But there are rumbles of discontent. Strikes are commonplace in the garment factories of Phnom Penh (Beaugé, 2010) and Indonesian workers are exploited in the growth triangle of 'the borderless world' set in the Riau Islands (Sparke, Sidaway, Bunnell & Grundy-Warr (2004). Unbridled environmental destruction continues, Southeast Asia has the highest relative rate of deforestation of any major tropical region, and could lose three quarters of its original forests by 2100 and up to 42% of its biodiversity (Sodhi, Koh, Brook. & Ng, (2004).

Two futures studies workshops help ion the Philippines in 1994 and 2007 pointed to quite different futures with varying ramifications for sustainable livelihoods. In 1994, using typhoon as a metaphor, the first typhoon is the rush to become a dragon, to export the nation into wealth; the second is a migrant society chasing better standards of living in the city and overseas; the third, increased tourism and the rise of a consumer society with resultant environmental costs; and, the final typhoon sees the growth of NGOs and a strong civil society (Inayatullah, 1995,683) By 2007 this had morphed into a different future scenario, the long typhoon whereby the Philippines is stuck in a political quagmire of never ending mistrust in the highest office of the land, thanks to allegations of corruption, long unanswered, and cheating in the last presidential election (Stevenson: 2007). At another futures workshop in Malaysia one participant saw a new Kuala Lumpur that was highly technological and environmentally friendly. Public transport would be inviting, eventually almost replacing the car. The city would be both accessible and architecturally rich (Inayatullah, 1995,685). By way of contrast a futures workshop in Indonesia wanted to redress a dystopian future by a series of interventions. They would intervene to stop Indonesia in 2020 that would be experiencing deforestation, poverty, malnutrition, disregard for the law, pollution, high crime, growing use of pornography, high incidence of corruption and an increase in separatism (Sebastion & Laksmana, 2009).

Inquiries into sustainable livelihoods in Southeast Asia reveals much about the mysteries that lie beneath the surface of societies and environments and that affect everyday lives. It also provides a vehicle for reviving interest into one of the central concerns of geography to fuse the dichotomy between human and physical geography and dissolve the distinction between culture and nature.

References

AAEE (2009). ***Australian Association for Environmental Education Position on the National Curriculum***. Retrieved June 2012 from www.aaee.org.au/wp-content/uploads/aaee-position-paper-on-the-national-curriculum-aug-091.pdf

ACARA (ND). ***Cross curriculum priority: sustainability***. Retrieved June 2012 from www.australiancurriculum.edu.au/CrossCurriculumPriorities/Sustainability

ACARA (2011). ***Shape of the Australian Curriculum: Geography***. Retrieved June 2012 from www.acara.edu.au/verve/_resources/Shape_of_the_Australian_Curriculum_Geography.pdf

Australian Government Department of Environment, Water, Heritage and the Arts (2009). ***Living Sustainably: The Australian Government's National Action Plan for education for Sustainability***. Retrieved June 2012 from www.environment.gov.au/education/publications/pubs/national-action-plan.pdf

Barney, K. (2009). Laos and the making of a 'relational' resource frontier. ***The Geographical Journal***, 175.2.146–159

Barney, K. (2007). ***Power, Progress and Impoverishment: Plantations Hydropower, Ecological Change and Community Transformation in Hinboun District, Lao PDR.*** Toronto: York Centre for Asian Research (YCAR),York University

Beaugé , F. (2010). Cambodia garment workers strike for minimum wage hike. ***Guardian Weekly***. 21 September

Brand, S. (2006). ***City Planet, Strategy + Business***, Chicago: Booz & Company Inc., 42:1–15

Braun, B. (2006). Towards a New earth and a New Humanity: Nature, Ontology, Politics, in N. Castree & D. Gregory ***David Harvey: A Critical Reader*** Oxford: Blackwell

Beckerman, W. (1995). How Would you Like your 'Sustainability', Sir? Weak or Strong? A Reply to my Critics ***Environmental Values*** 4.169–79

Bell, D. & Valentin, G. (1997). ***Consuming geographies: we are where we eat*** London: Routledge

Berkes F. (2008). ***Sacred Ecology: Traditional Ecological Knowledge and Management Systems***. Philadelphia and London: Taylor and Frances

Black, A. (2005). Rural communities ans sustainability, in C. Cocklin & J. Dibden (eds.) ***Sustainability and change in rural Australia,*** Sydney: UNSW Press

Blaikie, P. (2000). Development, post-, anti-, and populist: a critical review ***Environment and Planning A*** 32.1033–1050

Blaikie, P. (1985). ***The political economy of soil erosion in developing countries,*** London: Longman

Braun, B. (2006). Towards a New earth and a New humanity, in N. Castree & D. Gregory, ***David Harvey: A Critical Reader,*** Oxford: Blackwell

Brookfield, H. (2001). ***Exploring Agrobiodiversity***. New York: Columbia University Press

Brookfield, H. (1975). ***Interdependent Development*** London: Methuen

Burke, J. (2010). More of world's poor live in India than in all sub-Saharan Africa, says study. ***The Guardian.*** 14 July. Retrieved September 2010 from www.guardian.co.uk/world/2010/jul/14/poverty-india-africa-oxford

Castree, N. (2005). ***nature*** London: Routledge

Chin, S. (1985). Agriculture and resource utilisation in a lowland rainforest Kenyah community, ***Sarawak Museum Journal*** XXXV (56 n.s.) Special Monograph No 4, cited in Parnwell & Taylor (1996) Environmental Degradation, Non-timber Forest Products And Iban Communities in Sarawak: Impact, response and future prospects, (261) in M. Parnwell, & R. Bryant, (eds.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development***. London: Routledge

Cochrane, J. (1996). The Sustainability of Ecotourism in Indonesia: Fact or Fiction. In M.J.G. Parnwell, & R.L. Bryant (1996) (Ed.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development***. London: Routledge

Cocklin, C. & Dibden, J. (2005). ***Sustainability and change in rural Australia.*** Sydney: UNSW Press

Connell, J. and Waddell, E. (2007). (eds) ***Environment, Development and Change in Rural Asia-Pacific***, London & New York: Routledge

Dasgupta , S. & Williams, D. (2009). ***The impact of the economic crisis on women workers in Cambodia's garment sector***. Bangkok: ILO

Davey, C. (1983). The metropolis and its natural environment, in J. Holmes & R. Simpson (eds.) ***Man and the Environment: Regional Perspectives.*** Melbourne: Longman Cheshire

Davis, W. (1993). Death of a people: logging in the Penan Homeland, in Cultural Survival ***State of the Peoples: A Global Human Rights Report on Societies in Danger*** Boston: Beacon Press, 23–32

Department of the Environment, Water, Heritage and the Arts (2009) ***Living sustainably: the Australian Government's National action plan for education for Sustainability*** Canberra: DEWHA

Djohani, R. (1996). The Bajau: Future marine park managers in Indonesia, in M. Parnwell, & R. Bryant, (eds.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development***. London: Routledge

Dykes, A. (1996) Environmental characteristics of Brunei's Temburong Rainforests and implications for Conservation and Development, in M. Parnwell, & R. Bryant, (eds.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development***. London: Routledge

Eade, D. & Williams, S. (1995). ***The Oxfam Handbook of Development and Relief*** Vol 1–3. Oxford: UK: OXFAM

Eaton, P. (1997). Reinforcing Traditional Tenure: wildlife Management areas in Papua New Guinea, in S. Stevens (ed.) ***Conservation Through Cultural Survival: Indigenous Peoples and Protected Areas,*** 225–236, Washington DC: Island Press

Eccleston & Potter, (1996). Environmental NGOs and different political copntexts in Southeast Asia, in Parnwell, M.J.G. & Bryant, R.L. (1996) (Ed.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development.*** London: Routledge

Eckersley, R. (1998). Perspectives on progress: Economic growth, quality of life and ecological sustainability. In R. Eckersley (ed.) ***Measuring Progress: Is life getting better?*** Collingwood, Victoria: CSIRO Publishing, pp.3–34.

Economic and Social Commission for Asia and the Pacific , Asian Development Bank & United Nations Development Program (2010). ***Achieving the Millennium Development Goals in an Era of Global Uncertainty: Asia-Pacific Regional Report 2009/10.*** Bangkok: United Nations

Gammage, B. (Oct 2011). ***The Biggest Estate on Earth: How Aborigines Made Australia.*** Crows Nest, NSW: Allen & Unwin

Gibson-Graham, J.K. (2006). ***A Postcapitalist Politics*** Minneapolis: The University of Minnesota Press

Gibson-Graham, J.K (2005). Surplus possibilities: post-development and community economies, ***Singapore Journal of Tropical Geography*** 26.4–26

Gibson, K., Cahill, A. & McKay, D. (2010). Rethinking the dynamics of rural transformation: performing different development pathways in a Philippine municipality, ***Transactions of the Institute of British Geographers*** 35.2.237–255

Glacken, C. (1967). ***Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century***. Berkeley: University of California Press.

Goudie, A. (1981). ***The human impact on the natural environment: past, present, and future.*** Oxford: Blackwell

Harraway, D. (1997). ***Modest_Witness@Second_Millennium. FemaleMan©Meets_OncoMouse™: Feminism and Technoscience***. New York: Routledge

Harraway, D. (1991). ***Simians, Cyborgs and Women: The Reinvention of Nature***, New York: Routledge, and London: Free Association Books

Harvey, D. (1996). ***Justice, Nature & the Geography of Difference.*** Oxford: Blackwell

Harvey, D. (1969). ***Explanation in geography.*** London: Edward Arnold

Hazell, P., Poulton, C., Wggins, S. & Dorward, A. (2007). ***The Future of Small Farms for Poverty Reduction and Growth*** Washington: International Food policy Research Institute

Head, L. (2004). Landscape and Culture, in J. Matthews & D.

Herbert (Eds.) ***Unifying Geography: Common heritage, shared future***. London: Routledge

Head, L. (2000). ***Second Nature: The History and Implications of Australia As Aboriginal Landscape*** New York: Syracuse University Press

Head, L. (1993). Unearthing Prehistoric Cultural Landscapes: A View from Australia, ***Transactions of the institute of British Geographers***, 18.4.481–499

Hinchcliffe, S.(2007). ***Geographies of Nature: Societies, Environments, Ecologies***. London: Sage.

Hunt, D. & Lipton, M. (2011). ***Green Revolutions for sub-Saharan Africa?*** Retrieved June 2012 from www.chathamhouse.org/publications/papers/view/109557

Hyndman, D. & Duhaylungsod, L. (1996). Reclaiming T'Boli land: ancestral domain claim in the southern Philippines. In R. Howitt, with J. Connell & P. Hirsch (eds.) ***Resources, Nations and Indigenous Peoples: Case Studies from Australasia, Melanesia and Southeast Asia***. Oxford: Oxford University Press

Inayatullah, S. (1995). Futures visions for South-east Asia: some early warning signals. ***Futures***, 27. 6.681–688

Inkpen. R. (2009). Development : Sustainability and Physical Geography, in N. Clifford, S. Holloway, S Rice & G. valentine (eds.) ***Key concepts in Geography***. London: Sage

ITTO (2004). Tropical Forest Update 14/1 ***Status of forest management in Myanmar***, Retrieved June 2012 from www.itto.int/direct/topics/topics_pdf.../topics_id=6730000&no=1

Kaewmahanin, J. Sukwong, S. & Fisher, R.J. (2005). Pred Nai Community Forest, Trad Province, Thailand, in R.J. Fisher, S. Maginnis, W.J. Jackson, E. Barrow and S. Jeanrenaud ***Poverty and Conservation: Landscapes, People and Power***. Gland, Switzerlandand Cambridge, UK: IUCN

Kenny, Z. (2006). Indonesia: protests demand Freeport mine closure, ***Green Left***, March 8. Retrieved June 2012 from www.greenleft.org.au/node/34487

Latour, B. (1993). ***We have never been modern.*** Cambridge: Harvard University Press

Leaf, M. (2007). New aspirations and old dilemmas: the New Economy and development in SE Asia, in P. Daniels, A. Leyshon, M. Bradshaw & J. Beaverstock (Eds.) ***Geographies of the New Economy: Critical reflections***. London: Routledge

Lenhart, L. (2001). Orang Suku Laut Communities at Risk: effects of modernisation on the resource base and culture of the 'sea tribe' people of the Riau Islands, Indonesia. ***Nomadic Peoples***.5.2.67–88

Lewis, M. (1992). ***Green delusions: an environmentalist critique of radical environmentalism***. Durham NC: Duke University Press

Mallet, V. (1999). ***The trouble with tigers: the rise and fall of Southeast Asia***. New York: Harper Collins

Marsh, G Perkins (1965). ***Man and Nature.*** Cambridge: Harvard University Press

McGee, T.J. & Greenberg, C. (2002). 'The Emergence of extended metropolitan regions in ASEAN', ASEAN ***Economic Bulletin***, 9, 1: 22–44

McGregor, A. (2008). ***Southeast Asian Development***. London: Routledge

McManus, P. (1996). 'Contested terrains: Politics, stories and discourses of sustainability', ***Environmental Politics***, 5: 1, 48–73

Meadows, D., Meadows, D. & Randers, J. (1992). ***Beyond the limits: confronting global collapse envisioning a sustainable future.*** Claremont, New Hampshire: Chelsea Green Publishing Company

Mohamed Idris, S.M. (2010). ***Natives lose appeal in Bakun Dam case*** Sahabat Alam Malaysia. Retrieved September, 2010 from http://borneoproject.org/article.php?id=810

Montheard, X. (2010). Greater Hanoi swallows the countryside. ***Le Monde Diplomatique***. April

Nibbering, J. (1991). Crisis and resilience in upland land use in java, in J. Hardjono (ed.) ***Indonesia: resources, ecology, and environment*** Singapore: Oxford university Press, 104–32

Pacione, M. (2001). ***Urban Geography: a global perspective.*** London: Routledge

Parnwell, M. & Bryant, R. (1996). (ed.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development***. London: Routledge

Parnwell, M. and Taylor, D. (1996) Environmental Degradation, Non-timber Forest Products and Iban Communities in Sarawak: Impact, Response and Future Prospects, in M. Parnwell, & R. Bryant, (eds.) ***Environmental Change in South-East Asia: People, Politics and Sustainable Development.*** London: Routledge

Paul, E. (2010). ***Obstacles to Democratization in Southeast Asia*** London: Palgrave Macmillan.

Pearce, F. (2012). ***The Land Grabbers: The New Fight Over Who Owns the Earth***. Boston: Beacon Press

Pearce, F. (2006). Ecopolis now. ***New Scientist.*** 17 June

Perry, P. J. (2007). ***Myanmar (Burma) since 1962: the Failure of Development***. Aldershot : Asghgate

Poerbo, H. (1991). Urban solid waste management in Indonesia ***Environment and Urbanization,*** 3.1.60–9

Porritt, J. (2007). ***Capitalism: as if the world matters.*** London: Earthscan

Potter, L. (1993). The onslaught on the forests in Southeast Asia, in H. Brookfield and Y. Byron (eds.) ***South-east Asia's Environmental Future: The Search for Sustainability,*** Kuala Lumpur: Oxford University Press, pp. 103-23

Potter, L. & Badcock, S. (2007). Can Indonesia's complex agroforests survive globalisation and decentralisation? Sanggau District, west Kalimantan. In J. Connell & E. Waddell (Eds.). ***Environment, development and change in rural Asia-Pacific between local and global***. London: Routledge

Reid, A. (1988). ***Southeast Asia in the Age of Commerce,*** 1450–1680, New Haven: Yale University Press

Produce market, Cambodia Source: Wikimedia Commons

Rich, A. (1986). ***Blood, Bread and Poetry*** London: W. W. Norton & Co.

Rigg, J. (2003). ***Southeast Asia: The human landscape of modernization and development***. (2nd ed.). New York: Routledge.

Rigg, J. (2002). Of miracles and crises: re-interpretations of growth and decline in east and Southeast Asia, ***Asia Pacific Viewpoint*** 43.2.137–156

Rigg, J. (1998). Rural-urban interactions, agriculture and wealth: a Southeast Asian perspective, ***Progress in Human Geography*** 22,4,497–522

Rigg, J. and Salamanca, A. (2009). Managing risk and vulnerability in Asia: A (re)study from Thailand, 1982–83 and 2008. A***sia Pacific Viewpoint***, 50: 255–270

Rigg, J., Veeravongs, S., Veeravongs, L. & Piyawadee, R. (2008). Reconfiguring rural spaces and remaking rural lives in central Thailand, ***Journal of Southeast Asian Studies,*** 39.3 (Oct 2008)

Roberts, B. & Kanaley, T. (2006). Urbanization and Sustainability in Asia. Philippines: Asian Development Bank

Rose, D. (2010). Second wave of development, ***The Star Online***, Retrieved September, 2010 from http://biz.thestar.com.my/news/story.asp?file=/2010/3/27/business/5910576&sec=business

Sachs, W. (1993). Global ecology and the shadow of 'development', in W. Sachs, (ed.). ***Global ecology — a new arena of political conflict.*** London and New Jersey: Zed Books, 3–21.

Sanie, S. & Baum, S. (2003). Job Opportunities for Working Children in Jakarta's Informal Settlements, in T. Scrase (ed.) ***Globalization, culture and inequality in Asia*** Melbourne: Trans Pacific Press.

Schulte, A. & Schone, D. (eds) (1996). ***Dipterocarp Forest Ecosystems: Towards Sustainable Management*** Singapore: World Scientific Publishing

Sebastion, L. & Laksmana, E. (2009). (eds.) ***The Future of Indonesia Beyond 2014: Prospects and Challenges.*** Singapore: Nanyang Technical University

Sen, A. (1999). ***Development as Freedom*** Oxford: OUP

Smith, N. (2008). ***Uneven Development: Nature, Capital, and the Production of Space***, (Third Edition) Athens: The University of Georgia Press

Smith, N. & O'Keefe, P. (1996). Geography, Marx and the Concept of Nature, in J. Agnew, D. Livingstone, & A. Rogers (eds.) ***Human Geography An Essential Anthology,*** Oxford: Blackwell

Sodhi, N. S., Koh, L.P., Brook. B.W. & Ng, P.K.L. (2004). Southeast Asian biodiversity: an impending disaster. ***TRENDS in Ecology and Evolution,*** 19.12 .664–660, December

Stevenson, T. (2007). Courage and resilience: Creating Filipino futures. ***Futures,*** 39.463–474

Suzuki, D. (1990). ABC Radio National Science Show, recorded from an Australian Museum Lecture, 24 April, 1989, cited in N. Hutchinson & C. Bonnor ***Focus on Global Futures.*** Milton: The Jacaranda Press

Sparke, M., Sidaway, J.D., Bunnell, T. & Grundy-Warr, C. (2004). Triangulating the borderless world: geographies of power in the Indonesia–Malaysia–Singapore Growth Triangle, ***Transactions of the Institute of British Geographers,*** 29.4.485–498

Thomas, W. (1956). (ed.) ***Man's role in Changing the Face of the Earth.*** Chicago: University of Chicago Press

Tugault-Lafleur, C. & Turner, S. (2009). The price of spice: Ethnic minority livelihoods and cardamom commodity chains in upland northern Vietnam. ***Singapore Journal of Tropical Geography,*** 30.388–403

Turner, B., Clark, W., Kates, R., Richards, J., Mathews, J. & Meyer, W. (1990). (eds.) ***The Earth As Transformed by Human Action: Global And Regional Changes in the Biosphere over the past 300 years.*** Oakleigh, Victoria: Cambridge University Press

Willis, K., Gillson, L. & Brncic, T. (2004). How "Virgin" Is Virgin Rainforest? ***Science***, 4/16/ Vol. 304 5669, 402–403

Whatmore, S. (2002). ***Hybrid Geographies: Natures Cultures Spaces***. London: Sage

Ziegler, A., Fox, J. & Xu, J. (2009). The Rubber Juggernaut, ***Science Magazine,*** 324.5930.1024–25, May

Zimmerer, K. (1994). Human geography and the 'new ecology', ***Annales of the Association of American Geographers,*** 90.2.357–70

Zimmerer, K. & Young, K. (1998). (eds.) ***Nature's Geography: New lessons for Conservation in developing Countries.*** Madison: University of Wisconsin Press