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ORIGINAL PAPER

Why conservationists should be concerned about natural resource legislation affecting indigenous peoples' rights: lessons from Peninsular Malaysia

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Abstract For conservation to be effective in forests with indigenous peoples, there needs to be greater recognition of indigenous customary rights, particularly with regards to their use of natural resources. Ideally, legislation regulating the use of natural resources should include provisions for the needs of both indigenous peoples and biodiversity. In reality, however, legislative weaknesses often exist and these can result in negative impacts, either on indigenous peoples' livelihoods, their surrounding biodiversity, or both. Here, our case study demonstrates why conservationists need to pay greater attention to natural resource legislation affecting indigenous peoples' rights. Apart from examining relevant laws for ambiguities that may negatively affect biodiversity and livelihoods of indigenous people in Peninsular Malaysia (known as the Orang Asli), we also provide supporting information on actual resource use based on questionnaire surveys. In order to address these ambiguities, we propose possible legislative reconciliation to encourage policy reform. Although there are positive examples of conservationists elsewhere adopting a more inclusive and participatory approach by considering the needs of indigenous peoples, greater recognition must be afforded to land and indigenous rights within natural resource laws for the benefit of indigenous peoples and biodiversity.

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Introduction

The importance of engaging local people in biodiversity conservation cannot be overemphasised. If affected local people living in and around forests are not adequately engaged, conservation efforts can fail or even backfire (Brechin et al. 2002; Dressler et al. 2010; Gill et al. 2009; Nicholas 2005; Waylen et al. 2010). Now, more than ever, local communities must be integrated into conservation solutions. In some countries, conservationists have involved local communities as part of the solution, particularly when traditional ecological knowledge can be employed to benefit projects (e.g. Borrini-Feyerabend et al. 2004; Dressler et al. 2010; Pretty 2010). In fact, participation and consultation of local people in conservation programs can even lead to rebounding wildlife populations (e.g. Steinmetz et al. 2010).

Conservation programs have attempted to include forest-dependent communities, either through consultation, participation, or attempts to generate alternative/supplementary incomes (Rodríguez-Izquierdo et al. 2010; Shackleton et al. 2010). However, one important (but often neglected) issue can render these strategies ineffective: weaknesses in natural resource legislation affecting indigenous peoples' rights to access and use forest resources (e.g. Gill et al. 2009; Filer 2011; Shackleton et al. 2010). In fact, there have been many cases demonstrating the negative effects of state policies and external intrusion into communities' ancestral forests (e.g. Brechin et al. 2002; Clarke and Jupiter 2010; Dressler et al. 2010; Fiallo and Jacobson 1995; Hood and Bettinger 2008; Kothari et al. 1995; Larson 2011; Newmark et al. 1993; Richards 1996; Shackleton et al. 2010; TILCEPA 2008). Most recently, RRI (2012) reported that although indigenous rights in tropical forests are increasing, many gaps remain concerning the effectiveness of these laws and their implementation.

The situation in Peninsular Malaysia underscores why conservationists should be increasingly concerned about weaknesses in natural resource legislation. This region contains one of the world's most biodiversity-rich forests (e.g. Olson and Dinerstein 2002), which are home to a highly diverse group of indigenous peoples known as the Orang Asli. Legislation granting the Orang Asli occupancy and use rights in protected forests was first introduced prior to Malaysia's independence, and remains in force today. However, many issues related to indigenous peoples' rights (and consequently biodiversity conservation) have surfaced since then, despite Malaysia supporting the adoption of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), in 2007, both at the Human Rights Council and the General Assembly (Jaringan Orang Asal SeMalaysia 2010a). For example, there are increasingly more conflicts due to the lack of acknowledgment and legal standing of the Orang Asli's land tenure rights, particularly involving acquisitions of land for forest conversion and projects to develop lands where they reside (e.g. Bernama 2011; Boo and Ang 2010; Nicholas 2004; Nicholas et al. 2010; The Star 2011). Also, while resource harvesting by the Orang Asli is permitted (subject to some limitations), ambiguities in legislation have resulted in unsustainable resource use or illegal off-take in some cases (e.g. NST 2011; Yeng 2010).

We present a case study to argue that holistic natural resource legislation which integrates indigenous rights is key in promoting effective biodiversity conservation in

countries such as Malaysia, where the fate of indigenous peoples and biodiversity are inextricably linked. Here, we first provide a background on the Orang Asli and their legal rights pertaining to access to and use of natural resources, and subsequently highlight natural resource legislation pertaining to protected forests where they reside. Next, we highlight key weaknesses in the legislation by comparing relevant legal provisions with questionnaire data on actual resource use by Orang Asli from one study site in Peninsular Malaysia. Most importantly, we suggest how these weaknesses in the relevant natural resource laws in Peninsular Malaysia can be addressed in order to safeguard the rights of indigenous peoples without compromising the future of biodiversity in forests that they depend on.

The Orang Asli and their rights

The Orang Asli, which means 'original people' or 'first people' in the Malay language, are the indigenous minority peoples of Peninsular Malaysia. However, the Orang Asli are not a homogenous group and the term is used collectively to denote the 18 tribal subgroups which are generally classified according to three main ethnic groups: Negrito, Senoi and Proto-Malay. They are considered to be descendants of the Peninsula's earliest inhabitants, with some groups dating back at least 25,000 years (Nicholas 2004).

There is a tendency to view the Orang Asli historically as hunter-gatherers who only depended on natural resources for subsistence (e.g. Azrina et al. 2011). However, since the first millennium A.D. they have bartered forest products with foreign traders in exchange for salt, cloth and iron tools (Nicholas 2004), with some sources suggesting that they had been customarily trade-oriented for thousands of years (Andaya 2011). Therefore, the Orang Asli's customary and historical use of forest resources includes commercialised trade, rather than just a simple need for subsistence as implied by the current legislation.

In matters relating to general Orang Asli rights, the principal law applicable in Peninsular Malaysia is the Aboriginal Peoples Act 1954 (which refers to the Orang Asli as "aborigines"). This legislation, criticised today as being "discriminatory" and "paternalistic" (e.g. Koshy 2009), was enacted in response to the country's communist insurgency (Hood and Bettinger 2008; Nicholas 2004), and primarily outlined rights in relation to land occupation and use by Orang Asli. Nevertheless, it does provide some measure of indigenous rights, including provisions for the right to continue occupying land they have inhabited—the Act stipulates that they are not required to leave lands that are gazetted as parks or reserves under any law. Also, the "State Authority" may gazette land occupied by Orang Asli as an Aboriginal Reserve or Aboriginal Area under this Act, in which they have the right to clear forest and collect forest produce.

However, the State Authority is given the power to grant these rights, and can revoke these rights at any time. This law treats the Orang Asli as tenants-at-will, with the assumption being that the land ultimately belongs to the State. The State is therefore seen as having absolute decision-making powers over land, and that the Orang Asli have no overriding ancestral claims to it. Even the process of gazetting Aboriginal Reserves is rife with inefficiencies, delays and lack of political will, and does not necessarily equate to positive results on the ground (e.g. AITPN 2008; Boo and Ang 2010; Nah 2008; Nicholas 2004; Toh 2010). Many problematic ambiguities also exist within the law; the Act, for example, defines the "aboriginal way of life" as "living in settled communities", which appears to contradict the traditional semi-nomadic shifting lifestyles of some Orang Asli groups. Also, the law allows for the "taking of wild birds and wild animals" by the Orang

Asli, subject to regulations, but it does not actually define the meaning of "wild animals", nor specify what the regulations are.

The Aboriginal Peoples Act is currently being reviewed and amended by the government as a consequence of the National Land Policy's controversial "Policy of Awarding Land Titles", which would further limit indigenous rights to own, occupy and use forests (e.g. AlJazeeraEnglish 2012; Boo and Ang 2010; Koshy 2010; The Star 2010a). It is also a unilateral move by the Federal government, lacking consultation and neglecting principles of Free, Prior and Informed Consent (FPIC), and despite an ongoing National Enquiry into the Land Rights of Indigenous Peoples (e.g. Bhatt 2012). The review process requires greater transparency and consultation efforts, as it has met with vocal opposition from the Orang Asli and human rights movements (e.g. AlJazeeraEnglish 2012; Boo and Ang 2010; Koshy 2011a, b, c; The Star 2010b).

From a conservation perspective, these ambiguities in natural resource legislation must also not be overlooked. We contend that instead of being left solely to social or indigenous rights activists, these are within the remit of conservationists to address. Below, we demonstrate how natural resource laws (see below) and their own ambiguities can either impose restrictions on the rights of Orang Asli, or allow abuse of those rights—this not only has negative impacts on their livelihoods, but also on the surrounding biodiversity that they depend on.

Weaknesses in legislation governing natural resource use by indigenous people

While others have also reviewed natural resource management laws in relation to Orang Asli and their rights (e.g. Hood and Bettinger 2008; Lim 2011; Nicholas 2005), we present an updated and expanded analysis, detailing how these laws could affect conservation efforts. Legislation that have provisions directly or indirectly related to the use of natural resources by Orang Asli in Peninsular Malaysia are summarised in Table 1.

We specifically discuss how weaknesses in some of these laws affect the livelihoods of Orang Asli in the Belum-Temengor Forest Complex in the state of Perak, Peninsular Malaysia (Fig. 1). This landscape consists of a protected area, production forests, and state land forests. There are two main sub-ethnic groups of Orang Asli in Belum-Temengor: the Jahai and Temiar. While one group of Jahai remains semi-nomadic, many have been resettled by the government in villages. Where possible, we provide supporting evidence from a WWF-Malaysia questionnaire survey conducted in Belum-Temengor, where 229 Orang Asli respondents from 20 villages were interviewed during May–September 2010 on their activities pertaining to natural resource use (Rayan et al. unpublished data). Below, we show how ambiguities in natural resource legislation can affect four main categories of resource use—hunting, fishing, harvesting of non-timber forest products (NTFPs), and land use.

Hunting

Even within protected areas, wildlife populations have suffered declines as a result of unsustainable hunting by local communities (Bennett et al. 2000). As such, conservationists should aim to address existing ambiguities in natural resource laws regulating hunting. In Belum-Temengor, the Orang Asli are known to hunt small-to-medium sized mammals for their own consumption and/or to sell (Azrina et al. 2011). The Perak State Parks Corporation Enactment 2001 is the State law that applies within Royal Belum State

Table 1 Legislation affecting use of natural resources by Orang Asli in Peninsular Malaysia

Legislation	Scope
Federal laws	
Aboriginal Peoples Act 1954*	Management, rights and welfare of Orang Asli communities in Peninsular Malaysia
Wildlife Conservation Act 2010*	Protection of wild animals; gazettement and management of Wildlife Sanctuaries/Reserves
National Forestry Act 1984*	Collection of forest produce (including timber); gazettement and management of Forest Reserves (mainly production forests but can include protected areas)
National Fisheries Act 1985*	Fishing activities; gazettement and management of rivers for protection and conservation
National Land Code 1965*	Land ownership and areas gazetted for public purpose
National Parks Act 1980	Gazettement and management of protected areas across Peninsular Malaysia
State laws	
Johor National Park Corporation Enactment 1989	Gazettement and management of protected areas in the State of Johor
Perak State Parks Corporation Enactment 2001*	Gazettement and management of protected areas in the State of Perak
Taman Negara (Pahang) Enactment 1939	Gazettement and management of the portion of Taman Negara in the State of Pahang
Taman Negara (Trengganu) Enactment 1939	Gazettement and management of the portion of Taman Negara in the State of Terengganu
Taman Negara (Kelantan) Enactment 1938	Gazettement and management of the portion of Taman Negara in the State of Kelantan

Laws marked with (*) are relevant to our case study and were examined to identify ambiguities that require attention from conservationists

Park. It specifically prohibits hunting, catching, collecting and removing "wildlife", which the Enactment defines as including fish. However, the Enactment does not make any reference to indigenous resource use within the park. Nevertheless, the Enactment states that it does not derogate from the powers of the Protection of Wild Life Act 1972, which was repealed by the Wildlife Conservation Act 2010 in December 2010. In this sense, indigenous hunting as permitted by the Wildlife Conservation Act 2010 (see below), is implicitly permitted within the state park.

In Belum-Temengor, there has been ample evidence of illegal hunting activities (Clements et al. 2010). These may have been responsible for the decline of endangered species such as rhinos (Ahmad Zafir et al. 2011), and if not reduced could cause the decline of elephants, tigers (Clements et al. 2010) and other threatened species (WWF-Malaysia 2011). Orang Asli have been implicated (Yeng 2010) or caught (e.g. Jamaludin 2008) in illegal hunting activities before. These incidents reflect a weakness in the Federal law governing terrestrial wildlife in Peninsular Malaysia—the Wildlife Conservation Act 2010. The approach of this law is to regulate hunting and possession of wildlife through a licensing/permit system. However, the Orang Asli (referred to in the law as "aborigines") are granted an exception to hunt certain species for "sustenance" purposes only. For this purpose, the Wildlife Conservation Act 2010 has introduced a Sixth Schedule, which specifically lists the 10 species the Orang Asli are allowed to hunt (Table 2). Although this list improves on the old law by including hunting of the ubiquitous wild pig (*Sus scrofa*), it

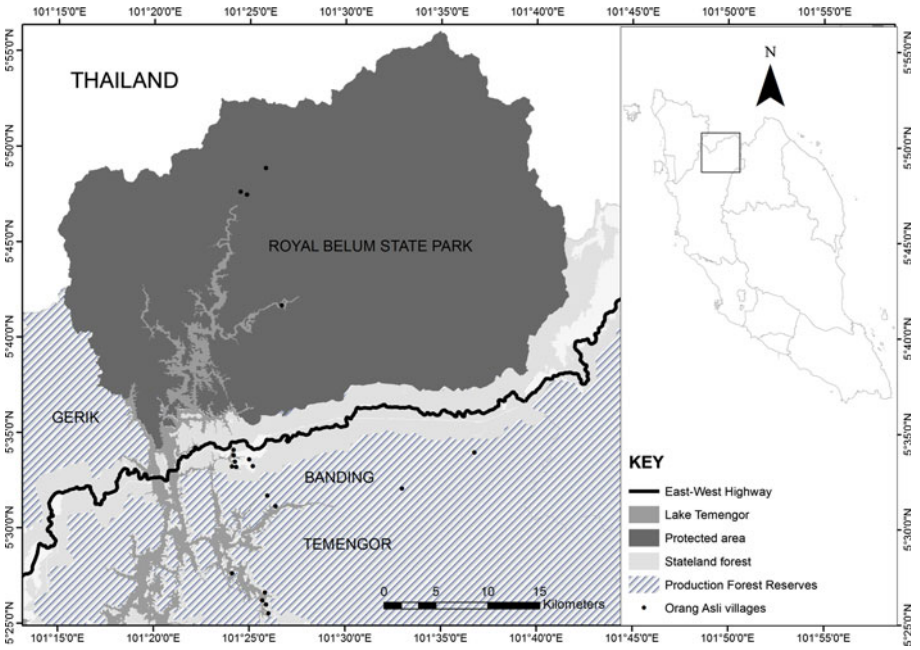

Fig. 1 Map of Belum-Temengor Forest Complex in the state of Perak, Peninsular Malaysia, including 20 Orang Asli villages where 229 Orang Asli were interviewed on their use of natural resources within the complex

worryingly includes the increasingly threatened sambar deer (*Rusa unicolor*; IUCN Red List status—vulnerable), for which a two-year moratorium was imposed on the issuance of hunting licences throughout Malaysia (Tan 2009). It also includes the threatened pig-tailed macaque, (*Macaca nemestrina*; IUCN Red List status—vulnerable) and two species of leaf monkey (one of which is only found in coastal mangroves), whilst excluding two other leaf monkey species and the more common long-tailed macaque (*Macaca fascicularis*; IUCN Red List status—least concern). It also fails to list any squirrels, which happen to be one of the main target species hunted (67 % of the Orang Asli who hunt listed squirrels as one of the main wildlife they hunted) by blowpipe for consumption (Rayan et al., unpublished data).

Table 2 Wild animals listed in the Sixth Schedule of the Wildlife Conservation Act 2010, which the Orang Asli ("aborigines") are allowed to hunt for consumption

Scientific name	Common name
1. *Sus scrofa*	Wild pig
2. *Rusa unicolor*	Sambar deer
3. *Tragulus javanicus*	Lesser mouse deer
4. *Macaca nemestrina*	Pig-tailed macaque
5. *Trachypithecus cristatus*	Silvered leaf monkey
6. *Trachypithecus obscurus*	Dusky leaf monkey
7. *Hystrix brachyura*	Malayan porcupine
8. *Atherurus micrurus*	Brush-tailed porcupine
9. *Amaurornis phoenicurus*	White-breasted waterhen
10. *Chalcophaps indica*	Emerald dove

It is unclear how the list of species was selected, whether relevant Orang Asli communities were consulted or surveyed, or whether any quantitative hunting data was collected for this purpose. In contrast, WWF-Malaysia interviews (Rayan et al. unpublished data) discovered that the top three wildlife hunted by the Orang Asli in Belum-Temengor are actually primates (79 % of hunters), squirrels (67 % of hunters) and birds (68 % of hunters). Clearly, there may be a disparity between the listed species and the actual species hunted by the Orang Asli for sustenance. Also, as it is almost impossible to monitor whether wildlife hunted by an Orang Asli is used for sustenance or for commercial trade, a provision in the Act that specifies the 10 species the Orang Asli are allowed to hunt could actually facilitate wildlife trade. This is particularly significant given that in November 2008 the Department of Wildlife and National Parks introduced a moratorium (Tan 2009) on legal hunting of sambar deer and barking deer (that to date still stands). Yet the Orang Asli are still allowed to hunt sambar deer under the Sixth Schedule. Compounding this problem is the fact that many middlemen and wildlife traders (who are non-indigenous) have learnt to exploit these special rights by paying Orang Asli to hunt for them (Jamaludin 2008; Yeng 2010). One unfortunate effect could thus be that the Orang Asli continue to legally hunt the very species that may already have declined and were intended to be safeguarded through the moratorium (Kawanishi et al. in press). At the same time, the middlemen and wildlife traders will continue to make a profit by exploiting these special rights.

There appears to be a widely held misconception that the Protection of Wild Life Act 1972 allowed the Orang Asli to hunt every single species listed in Schedule Two and Four (e.g. Azrina et al. 2011; Nicholas et al. 2010; Tan 2011). However, we believe that this is an erroneous assumption, as "The Orang Asli and their rights" section under Part V clearly specifies: "…the wild animals and the wild birds described in Schedules Two and Four as deer, mouse deer, game birds and monkeys…". We contend that this ought to have been interpreted to mean that indigenous hunting was only limited to these types of animals expressly. In light of this, both conservationists and social activists should realise that the new law's inclusion of the Sixth Schedule is more likely an attempt to clarify and specify actual permitted species, and is not a new introduction (though the omission of "game birds" in the new law is problematic). While some would see this as positive for wildlife conservation (e.g. NST 2010), others have cautioned that it further restricts Orang Asli rights (e.g. Azrina et al. 2011; Nicholas et al. 2010; Tan 2011). These polarised views are reflective of a wider difference in perspectives between conservationists and social activists at a time when they should be working together to address and solve common issues such as deforestation and human-wildlife conflict (see Filer 2011; Robinson et al. 2011; Waylen et al. 2010; West and Brockington 2006).

Fishing

Laws that regulate fish off-take in protected areas should be examined for ambiguities because for local communities, fishing can be a more important and frequent livelihood activity than hunting (e.g. Rao et al. 2010). In Belum-Temengor, the rivers and lakes contain protected fish species such as the Malaysian Mahseer (*Tor tambroides*), which is highly prized for subsistence and commercial trade. Overfishing could further depress fish stocks of this and other native species, which generally appear to have been negatively impacted by the construction of the Temengor dam (Jackson and Marmulla 2001).

The Federal law governing fishing is the National Fisheries Act 1985, and can be used to gazette rivers as Conservation & Resource Protection Zones, where fishing is prohibited

(WWF-Malaysia 2011). Yet it makes no mention of the Orang Asli. The Perak State Parks Corporation Enactment 2001 includes fish within its hunting prohibitions, but does not make any reference to indigenous resource use within the park. While the Enactment states that it does not derogate from the Protection of Wild Life Act 1972 (now the Wildlife Conservation Act 2010), which does allow hunting, this does not cover fish. Yet in Belum-Temengor, 20 % of Orang Asli interviewed ($n = 229$) consider fishing to be one of their main sources of income, while others fish to supplement their income (Rayan et al. unpublished data). Both Federal and State laws therefore contain ambiguities which must be addressed, as the Orang Asli's rights to fish for their livelihood could one day be legally revoked.

Conversely, if authorities allow the Orang Asli to continue unlimited and unregulated fishing in the park, fisheries of threatened species may become overexploited by commercial traders utilising Orang Asli fishermen. Evidence exists to suggest that for the Orang Asli communities in RPS Banun (a resettlement scheme consisting of several villages situated between Royal Belum and Temengor FR), a greater reliance on fishing came about due to the actual resettlement, which created a higher population density without supplying the necessary subsidies or projects promised to support their livelihoods, resulting in rapid depletion of traditional food resources in the area (Nicholas 2004). It is not difficult to see how this situation, if left unaddressed, will lead to the eventual depletion of local fish stocks.

Collection of NTFPs

The harvesting of NTFPs is arguably the most important livelihood option for local communities at the edge of tropical forests (Shaanker et al. 2004). In Peninsular Malaysia, it has been assumed by some that the National Forestry Act 1984 permits Orang Asli to collect NTFPs in forest reserves (e.g. Azrina et al. 2011). However, our review of the legislation showed that this Act merely provides the State Authority with the power and decision to exempt them from the need to obtain licences to collect; it would appear that no automatic exemption is actually granted to the Orang Asli, and that even if an exemption is prescribed, this only applies specifically to alienated (private) land, not production forests or protected areas. Therefore, the Act does not provide the Orang Asli with explicit permission to actually access resources within reserves. Thus while the Orang Asli are mentioned in the Act, this does not extend to the larger context of rights or conservation, with no mention of consultation or other livelihood issues which might be relevant to conservation.

The Act does include very specific definitions and examples of "forest produce". However, it restricts the permissible collection of forest produce by Orang Asli specifically to the purpose of building and maintaining houses, maintaining fish stakes and landing places, use as fuelwood "or other domestic purposes", and construction and maintenance of "any work for the common benefit of aborigines". No specific mention is made of forest produce for consumption or trade, though perhaps consumption might be covered under "other domestic purposes". Yet the Act does not make it clear what this means.

Certain Orang Asli groups in Peninsular Malaysia are known to be heavily dependent on the extraction of NTFPs for cash and subsistence income (e.g. Howell et al. 2010). There are reports documenting that the Orang Asli sell harvested NTFPs to traders operating around protected areas (e.g. gaharu [agarwood], *Rafflesia* buds; Lim and Noorainie 2010; Tan 2011). Interviews with the Orang Asli in Belum-Temengor revealed that about 55.7 % of the 229 respondents state that they rely on the sale of NTFPs for their livelihood (Rayan et al. unpublished data). Such NTFPs include gaharu, rattan, honey, bamboo, forest fruits,

rafflesia buds and various herbal plants—many of which are sold to outsiders and not consumed. As with the fishing example above, resettlement in RPS Banun caused the Orang Asli to develop a greater reliance on the sale of rattan for cash incomes (Nicholas 2004).

Again, the Perak State Parks Corporation Enactment 2001 compounds this problem in Royal Belum by failing to explicitly acknowledge its Orang Asli inhabitants, much less those living outside the park, and their need to harvest the park's natural resources for their livelihoods. In addition to this, the Aboriginal Peoples Act 1954 only states that "aborigines" are allowed to take forest produce in "aboriginal areas" (subject to regulations). It would seem then, that there is a definite gap in the legislation when it comes to the Orang Asli's need to access and use NTFPs in production forests and protected areas.

Despite the need to ease restrictions imposed on Orang Asli livelihoods, the extraction of NTFPs can have a detrimental impact on biodiversity (SCBD 2001). Driven by payments from middlemen who exploit indigenous ecological knowledge (Hood and Bettinger 2008), Orang Asli including the Jahai and Temiar are reportedly the most important collectors of agarwood, contributing to an extensive trade throughout the Peninsula since at least the early 19th century. The two main methods of harvesting agarwood are: lethal, where the entire tree is cut down, and sub-lethal, which involves coppicing. While some Orang Asli groups have been known to practise sub-lethal harvesting on a 2–3 month rotation, others do not, and have carried out such intensive harvesting as to cause exhaustion of local stocks in their traditional territories. This is now further compounded by transnational harvesting by foreign syndicates (Lim and Noorainie 2010).

The agarwood situation thus illustrates how unregulated indigenous harvesting can and does lead to depletion of natural resources. Granting harvesting rights on their own, without specific accompanying protocols/quotas and monitoring, can be dangerous. This underscores the need for conservationists to address this issue by initiating constructive engagement with the relevant Orang Asli communities, as the only way such protocols and quotas can be effectively and equitably derived and implemented is through the full participation and consent of the harvesters themselves.

Land use

Community-based land ownership has proven to be an important weapon against deforestation in the tropics (e.g. Laurance et al. 2011). Unfortunately, in Peninsular Malaysia, forest conversion to plantations (e.g. Aziz et al. 2010) threatens both the survival of biodiversity as well as the livelihoods of forest-dependent peoples such as the Orang Asli (e.g. Bernama 2010, 2011; Hood 1993). In extreme examples, there have been scenarios where the Orang Asli were relocated from forests to make way for development projects (e.g. Khalid 2009; The Star 2009). The explicit recognition of customary land rights could have prevented the demise of these forests.

In Peninsular Malaysia, the National Land Code 1965 governs land ownership, including the issuance of land titles. Again, ultimate decision-making powers are granted to the State. It does however include an ambiguous statement that it will not affect legal provisions "relating to customary tenure", unless "expressly provided to the contrary" (Lim 2011). Yet an explicit recognition of Orang Asli customary law is not included within any legislation, not even the Aboriginal Peoples Act 1954, which weakens their claim in a court that may not have any respect, understanding or recognition of such a marginalised traditional culture.

Many Orang Asli communities have now been resettled by the government, sometimes in new areas not within their ancestral lands (e.g. Nicholas 2004). In this case, customary

law alone may not be sufficient and there is a need to fall back on safeguards within the Aboriginal Peoples Act 1954, underscoring the importance of creating new Aboriginal Reserves and Areas. RPS Banun is one positive example where the court ruled in favour of the Orang Asli's claim. In this instant, the Act was invoked to prove that the land had been approved for gazettement as an Aboriginal Area, even though no official gazette had yet been issued. This ruling helped to prevent the area from being logged by a private company that was issued a licence by the Perak Forestry Department without obtaining FPIC (Lim 2011; Nicholas et al. 2010). The Act states that people who are not resident "aborigines" cannot be issued licences to harvest "forest produce" within that Aboriginal Area without consulting the "Director General for Orang Asli Affairs" (although, consultation with the affected Orang Asli communities themselves is not mentioned). Thus, this example shows how in some cases, explicit recognition of customary rights can help to conserve forests and the inherent biodiversity within them, as long as the community in question is sufficiently invested in maintaining and protecting the forest.

There is another side to this issue however. Although the Aboriginal Peoples Act 1954 gives the Orang Asli the right to continue occupying land, conversely it also grants the State Authority the power to appropriate this land for other purposes, and to displace resident Orang Asli communities with no obligation to directly compensate the individuals involved, apart from the loss of fruit trees and rubber trees on state land. A natural, primary forest, and the reliance of the Orang Asli on it for their livelihoods, is not recognised as being worthy of compensation under the Act. A state government thus has the legal right to clear a forest within the Orang Asli's traditional territory for a plantation, or to build infrastructure, with no need to obtain Orang Asli consent, and no safeguards in place to ensure that biodiversity, livelihoods and customary rights are protected.

In this case, the Act can be used as a legal instrument to remove Orang Asli control and ownership over their own lands (Nicholas 2004). It is this situation which has given rise to contemporary land conflict issues such as the Sagong Tasi court case (Lim 2011; Nah 2008; Nicholas et al. 2010; The Star 2010a) and the Temiar blockade in Gua Musang (e.g. Chun 2012; Kuek 2012; The Star 2011, 2012), which are only the newest additions to a long list of grievances (e.g. Nicholas, 2004 and Nicholas et al. 2010). In all cases, proclamations by the authorities that the Orang Asli are "illegal settlers" (Nicholas 2004), or that the land belongs to the state because the Orang Asli do not possess land titles (Kuek 2012), demonstrates a profound ignorance of, and disrespect for, Orang Asli culture, customs and way of life. Again, these institutionalised attitudes still persist despite Malaysia signing the UNDRIP.

Such land conflict cases could potentially increase and be exacerbated if proposed amendments to the Act are passed by Parliament. These amendments are the result of a new policy proposed by the National Land Council which purports to allocate land, along with specific titles, for Orang Asli. However, the proposed amount of land is significantly less than that of the Orang Asli's traditional customary land. More alarmingly for conservationists, the land titles will only be issued once the land has been planted with rubber or oil palm (by an "authorised" third party) and the crop has matured (AlJazeeraEnglish 2012, Datuk Ranita 2011; Boo and Ang 2010). In actual fact, this means that any Orang Asli who wishes to maintain (or restore) the natural forest on his land runs the risk of forfeiting his right to the land title. A perverse incentive for deforestation will thus be created. Yet so far conservationists have remained largely ignorant over this grave transgression on both Orang Asli rights and biodiversity conservation.

Conversely however, if land is gazetted as an Aboriginal Reserve or Area, Orang Asli may also be permitted to clear the forest on this land. Conservationists must thus be

prepared to ask some hard questions about how to deal with situations where granting of customary rights runs counter to biodiversity objectives. This is particularly pertinent because conversion of forest to agriculture frequently provides poor communities with a fast track to a higher standard of living (Larson 2011).

Possible legislative reconciliation

Brechin et al. (2002), who highlighted the frequent negative impacts of conservation efforts that disregard social and political processes, have argued persuasively for the need for "environmental justice", which among others requires cognisance of the legal jurisdictions that apply to specific conservation projects. Their arguments have been more recently reiterated by Dressler et al. (2010) and Filer (2011). Conservation efforts can result in social impacts which exacerbate social justice problems, likely generating more resistance and conflict. As conservation projects do not take place in a vacuum, the only way for these projects to operate effectively in their complex social and political settings is to acknowledge, understand and openly address these conditions (see Robinson et al. 2011).

Hood and Bettinger (2008) have pointed out how the lack of a clear, integrated and overriding policy on the treatment of Orang Asli in and around protected forests means that decisions made regarding this issue are completely *ad hoc*. Conservationists should therefore be concerned about the legislative ambiguities highlighted above, as these can hinder biodiversity conservation. In addition, Malaysia is a signatory to the Convention on Biological Diversity (CBD), which states in Article 10(c) that countries must "Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements" (SCBD 1993). Here, we suggest potential legislative reconciliation for the benefit of both biodiversity conservation and Orang Asli rights. These should be accompanied by mitigating measures to address potential conflicts arising from legislative gaps and ambiguities, in which conservationists can play an active role.

Both the Aboriginal Peoples Act 1954 and the National Land Code 1965 deal with far more than just natural resource use, and require further, interdisciplinary examination. The Malaysian Bar Council (2009) has already recommended specific legal measures related to both, and we strongly urge the conservation movement to start considering and addressing the ramifications of such measures. They include: individual land titles for families, gazettement of communal land parcels, and perpetual and unlimited foraging rights. In addition to this, we suggest that the Aboriginal Peoples Act 1954 should include a specific acknowledgement of Orang Asli customary law, the need to consult Orang Asli communities directly, and specific compensation for their traditional ecological knowledge. Indeed, specific legal protection is needed in order to ensure that the Orang Asli's indigenous knowledge of medicinal (and other economically important) plants is not exploited or abused—financial and other benefits must be channelled back directly to the communities.

In order to curb potential overhunting and illegal hunting, the Wildlife Conservation Act should not stop short at listing prohibitions and regulations regarding hunting; it should adopt a more holistic approach to biodiversity conservation and the many social facets impacting it or impacted by it. For example, the Wildlife Conservation Act should include clauses specific to resolving disputes/conflicts that may arise between prohibition of hunting of wildlife and the needs or rights of the Orang Asli (or at least incorporate this

into orders/regulations under the Act). While the new law's inclusion of the Sixth Schedule is an attempt to clarify the species that can be legally hunted by Orang Asli, the schedule should be revised to better protect more threatened species according to the IUCN Red List (i.e. sambar deer, pig-tailed macaque), and also address the Orang Asli's subsistence needs more realistically by including the species they actually hunt. This can only be done via a more comprehensive and in-depth process that includes consultation and empirical data-gathering, and is sufficiently representative (e.g. Robinson et al. 2011).

In order to curb potential overfishing, the National Fisheries Act 1985 should list fish species that can be caught by the Orang Asli for self-consumption and regulated commercial trade, provide scientifically-defensible quotas for their harvesting with monitoring and enforcement mechanisms, and list threatened species that are prohibited from harvesting to prevent local extinctions. At the very least, it should contain provisions for the commissioning of studies for determining such quotas. The process of devising these quotas has to undergo a rigorous consultation process with various Orang Asli communities. The National Parks Act 1980 and state enactments (e.g. Perak State Parks Corporation Enactment 2001) should also be amended to explicitly include the same. On this aspect, the state of Sabah in Borneo provides an excellent example of Community-based Resources Management (CBRM) developed from the traditional indigenous Tagal system of sustainable river fishing (Wong et al. 2009). Although caveats exist in practice, it is worth trying to implement such a system in Peninsular Malaysia through partnership with the Orang Asli and the Fisheries Department. If continuous monitoring and support is provided to the participating communities, this system could potentially reduce the likelihood of traders exploiting Orang Asli fishermen to overharvest threatened species for commercial gain.

Gaps within the National Forestry Act 1984 need to be addressed in order to minimise possible overharvesting of forest products, but also to ensure that the subsistence and cash needs of forest-dependent Orang Asli are provided for. Conservationists must initiate dialogues and discussions with and between the Orang Asli, the Forestry Department and scientific institutions in order to formulate mutually agreed protocols, and/or quotas for NTFP harvesting. This is especially urgent given that as with hunting, outsiders exploit Orang Asli rights in order to obtain and sell NTFPs (Hood and Bettinger 2008). Measures need to be put in place to ensure that these special rights are not taken advantage of—this can only be done through holistic consultation of all relevant parties.

The National Parks Act 1980 and the Perak State Parks Corporation Enactment 2001 should both be reviewed in order to recognise and address the impact of parks on Orang Asli livelihoods, as well as the Orang Asli's impact on parks. As an example, the Taman Negara (Pahang) Enactment 1939 actually contains provisions to allow for the Orang Asli's continued enjoyment of privileges such as fishing and collection of produce within the park—which the Orang Asli communities living in the area had habitually been practising before the Enactment came into force. The National Parks and Nature Reserves Ordinance 1998 (Amended) of Sarawak also contains similar provisions for its "natives" in "any area designated as a national park" under the Ordinance. While the actual implementation of the law is far from perfect and subject to further caveats, these examples show that it is entirely possible to include such provisions within protected area legislation. However, these need to be supplemented with additional provisions that provide for equal input from the Orang Asli on park management issues, decision-making processes, and conflict management mechanisms e.g. through official membership and participation in a park management committee. Such a process should be done in full consultation with the relevant Orang Asli communities as equal partners, in order to settle on solutions that are

beneficial to all (WWF-Malaysia 2011). Another point to note is that formal, legal recognition of indigenous rights to access and use natural resources is the first necessary building block to facilitate concrete and effective conservation partnerships. This can pave the way towards creating Indigenous and Community Conserved Areas (ICCAs)—a concept that, although far from being new, is now emerging as "a major new phenomenon in formal conservation circles" according to TILCEPA (2008), who outlined several desired forms of this formal recognition of rights. This recognition is crucial if conservationists wish to secure indigenous support for conservation projects.

In summary, any legislation that purports to protect natural resources must be holistic in its approach; carefully taking into account the needs of indigenous communities who are dependent on these natural resources, and catering for them in a sustainable manner. Specifically there is a need to:

(i) clarify all rights to natural resources situated within or outside protected areas and forest reserves
(ii) clearly define purposes and limits to access to natural resources
(iii) clearly define all exemptions made for sustenance and livelihood purposes
(iv) clearly provide for the need to consult affected communities
(v) create other, appropriate and equitable benefits in situations where prohibitions affect livelihoods
(vi) specify harvesting quotas and/or protocols to ensure that resource use is sustainable and protected from abuse.
(vii) include safeguards to prevent indigenous ecological knowledge from being exploited or abused.

Ultimately, it is crucial to ensure politically constructive participation by the affected communities. While most conservationists automatically applauded the Wildlife Conservation Act 2010 as being a victory for conservation (e.g. Azrina et al. 2011), they should realise that such legislation which directly affects a marginalised community's use of natural resources requires more in-depth consultation and empirical studies in order to be fully aligned with conservation objectives. There is clearly potential for conflict, and solutions and mechanisms to overcome this need to be collectively agreed upon, based on compromise and mutual benefit (Hood and Bettinger 2008) rather than coercion. This is where conservationists have both the opportunity and the responsibility to initiate dialogue between policymakers and Orang Asli communities in order to effect meaningful policy reform.

Also, there can sometimes be a significant gap between recognition of rights and actual implementation of these rights on the ground (RRI 2012). Government bureaucracy, conflicts and competing claims with other groups (whether also indigenous or not) can cause delays or complications to the extent that it is not worthwhile for communities to invest themselves in the process (Larson 2011). Policy reform alone is thus powerless if existing institutional structures or systems prevent or do not facilitate effective implementation and enforcement; improved policies must be accompanied by the necessary institutional reforms to deliver them. This is where conservationists can, and should, play a crucial role in ensuring that the rights of minority groups such as indigenous, forest-dependent communities are effectively protected hand-in-hand with biodiversity through dialogue, outreach and projects. Without this, conservation efforts will struggle to succeed. This is particularly true for projects that seek to engage indigenous communities as part of their work, or which depend on indigenous communities for cooperation and collaboration.

Recognition of indigenous rights in the wider conservation context

Conservationists clearly need to consider the importance of indigenous peoples' rights. This is particularly significant given the development of schemes such as Payment for Ecosystem Services (PES) and Reducing Emissions from Deforestation and Forest Degradation (REDD and REDD+), with their attendant social justice issues revolving around the needs and rights of forest-dependent communities. As Larson (2011) and RRI (2012) have pointed out, such schemes require clear tenure rights, and REDD+ in particular may require changes in resource use. Indeed, issues such as community rights to tenure and resources are central to REDD+, and crucial to ensure its success. The implementation of such schemes in Malaysia remains problematic and controversial, with indigenous groups from the country issuing statements of criticism at international fora (e.g. Jaringan Orang Asal SeMalaysia 2010b, c, d), and therefore REDD+ strategies cannot be entered into until such problematic forest governance issues are resolved. Even IUCN has acknowledged that in order for local people to adapt to climate change, secure rights to resources are necessary (TILCEPA 2008). Therefore, input and involvement from forest-dependent communities who are impacted by conservation efforts must be solicited through partnerships, consultation and participation, and this includes addressing the issue of indigenous rights under federal and state laws.

Encouragingly, there is already evidence that this has started to happen in other parts of the world. In Australia, traditional Aboriginal land rights were officially recognised in the landmark Mabo Decision of 1992 (Meyers and Mugambwa 1993). Elsewhere, the National Constitution of Honduras explicitly recognises land occupation rights of indigenous forest-dwellers. Some communities have also successfully obtained communal land-titles (Richards 1996), such as in Africa (Larson 2011). Indeed, in Central and South America a model of indigenous land tenure and management has been developed based on the concept of "indigenous territory" (Davis and Wali 1994), and indigenous peoples in Canada have been allowed to manage forests under community forest tenure (Dressler et al. 2010). Closer to home, several countries in South and Southeast Asia have also begun implementing policy reform. Nepal has proven to be a successful example of participatory community forestry, whilst Indonesia and Vietnam have reversed centralised forest policies in order to return forest lands back to local people (Gill et al. 2009). Now, about 31 % of forests in tropical developing countries are either owned by indigenous peoples, or designated for their use (RRI 2012).

In Peninsular Malaysia, there is now a growing voice among the Orang Asli calling for state governments to recognise their right to ancestral land and have a greater say in development (e.g. Chun 2012; Koh 2009; Kuek 2012; The Star 2012), and some state governments are making laudable efforts to consider their requests (e.g. Bernama 2012a; Khalid 2009; NST 2012; The Star 2010a). There have also been calls from within Malaysia arguing that any conservation efforts, particularly those related to protecting and managing natural resources, must solicit and include Orang Asli participation as custodians and equal partners (e.g. Gill et al. 2009; Hood and Bettinger 2008; Jaringan Orang Asal SeMalaysia 2010d; 2005), echoing the arguments and guidelines put forth by Borrini-Feyerabend et al. (2004) on protected areas and indigenous/local communities. This is even more urgently needed now in Malaysia, given that recent disturbing reports indicate that the Orang Asli are still being victimised in the name of conservation (Bernama 2012b; Chelvi 2012).

There have been recent examples of court cases where Orang Asli customary rights were legally recognised and upheld, demonstrating that Malaysian courts have indeed

recognised that Orang Asli rights are far more extensive than the limited provisions included within the laws (e.g. Lim 2011; Nah 2008; The Star 2010a). However, the success of all these cases impinged on the respective judges' discretion to interpret the legislation using Common Law and the Constitutional protection of custom in a way that gave priority to the Orang Asli's special rights. We maintain that ultimately, the benefit of enshrining these rights explicitly within all the relevant laws will ensure that there is no need to rely on a favourable personal interpretation from a sympathetic judge—a condition which cannot be guaranteed for every case.

Given the expansion of indigenous communities, the loss of traditional knowledge and practices, and the need to sell forest products for their livelihoods, consultations and discussions are the only way to effectively devise and implement sustainable solutions to this problem—and conservationists may find that it is easier to ensure participation by the relevant authorities if this issue were actually given due recognition within the law. Although it may be convenient for conservationists to believe that land rights and indigenous rights are irrelevant to their work, our experience shows that these issues ultimately affect biodiversity conservation efforts on the ground—and that we cannot afford to assume otherwise.

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