Environmental Impact Assessment Review 46 (2014) 58–67

Contents lists available at ScienceDirect

Environmental Impact Assessment Review

journal homepage: www.elsevier.com/locate/eiar

Improving the effectiveness of impact assessment pertaining to Indigenous peoples in the Brazilian environmental licensing procedure

Philippe Hanna [a], Frank Vanclay [a,*], Esther Jean Langdon [b], Jos Arts [c]

[a] Department of Cultural Geography, Faculty of Spatial Sciences, University of Groningen, PO Box 800, 9700 AV Groningen, The Netherlands
[b] Department of Anthropology, Center for Philosophy and Human Sciences, Federal University of Santa Catarina PO Box 5104, 88040-970, Florianópolis, SC, Brazil
[c] Department of Planning, Faculty of Spatial Sciences, University of Groningen, PO Box 800, 9700 AV Groningen, The Netherlands

ARTICLE INFO

Article history:
Received 12 November 2013
Received in revised form 22 January 2014
Accepted 26 January 2014
Available online xxxx

Keywords:
Environmental impact assessment
Social impact assessment
Indigenous Component Study
Self-determination
Territoriality
Ethnogenesis

ABSTRACT

The number of environmental licence applications for projects affecting Indigenous peoples in Brazil has increased since the implementation of a major infrastructure program (*Programa de Aceleração do Crescimento*) in 2007. This increase has caused problems for Brazilian agencies involved in environmental licensing procedures (IBAMA, FUNAI and others). We analyze the Brazilian environmental licensing procedure for situations involving Indigenous peoples, Maroons (*Quilombolas*) or other traditional communities in order to identify potential improvements for Brazil and potentially other countries. Although Brazilian procedures are consistent with international best practice in environmental licensing, in practice social impacts are inadequately addressed, mitigation measures are poorly implemented, and there is a lack of enforcement and compliance. The paper is based on document analysis and interviews with key actors in governmental and non-governmental organizations and Indigenous leaders. We suggest that Free, Prior and Informed Consent (FPIC) processes need to be conducted at the earliest stages of project planning, and that Indigenous peoples should actively participate in impact assessment, monitoring and evaluation processes. In order to achieve a social licence to operate, there needs to be full recognition of traditional knowledge and acceptance of Indigenous values and concepts. We also recommend increased involvement of social experts and mediators as well as improved accountability, enforcement and grievance mechanisms in the licensing process.

1. Introduction

With the rapid development Brazil has experienced as a result of the introduction of a major infrastructure program (*Programa de Aceleração do Crescimento*, PAC) in 2007, and a positive prognosis for the future, the number of environmental licence applications submitted to the relevant institutions has increased considerably. However, the increased workload borne by the environmental licensing agencies has not been matched by an adequate increase in human resources (Borges, 2013). The country has a complicated licensing procedure that requires the involvement of several different institutions. In addition, the quality of the assessment procedure has been further compromised by a recent regulation requiring the speeding-up of agency response (Brasil, 2011a).

Due to the severity of electricity blackouts and a range of other critical infrastructure issues Brazil has faced since 2001, the federal government has stimulated investments in the extractives and energy sectors and other major infrastructure projects as part of PAC. However, the rush to implement such projects has been at odds with appropriate licensing arrangements, especially when Indigenous peoples are affected (Santilli, 2013). Proponents, various lobby groups and some governmental agencies tend to perceive the licensing procedure as mere formality and consider Indigenous peoples to be obstacles to economic development since they are perceived as delaying the implementation of projects (Goldemberg and Lucon, 2007; Verdum, 2012). Sanson (2013) and IWGIA (2013) argue that such a perception has led to a lack of commitment to proper process and ultimately to breaches of Indigenous rights. As a result, Brazil has been the subject of complaints from international institutions, non-governmental organizations (NGOs) and the United Nations Special Rapporteur on the Rights of Indigenous Peoples, James Anaya (Anaya, 2010; ILO, 2012; IWGIA, 2013).

Brazil is a signatory to the 2007 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and, more importantly, has ratified the International Labour Organization Convention 169 (ILO C169) and is thus obligated to apply 'Free, Prior and Informed Consent' (FPIC) procedures (Hanna and Vanclay, 2013). These international agreements confer on Indigenous peoples the right to be consulted in any legislative or administrative procedure that may affect them directly, including environmental licensing procedures. In practice, adequate participatory processes consistent with international understandings of FPIC (Hill et al., 2010; Vanclay and Esteves, 2011) are rarely implemented in Brazil (ILO, 2012). Impact assessment, mitigation and enhancement (João et al., 2011) play only a secondary role in the licensing process with proponents (including state bodies and public–private

* Corresponding author at: Department of Cultural Geography, Faculty of Spatial Sciences, University of Groningen, The Netherlands.
E-mail address: frank.vanclay@rug.nl (F. Vanclay).

http://dx.doi.org/10.1016/j.eiar.2014.01.005
0195-9255/

partnerships) focusing primarily on obtaining project approval and ensuring rapid implementation (Bronz, 2011; Santilli, 2013).

This paper examines the Brazilian environmental licensing procedure and the concerns and complaints of Indigenous peoples affected by project implementation. Also discussed is how environmental impact assessment (EIA), social impact assessment (SIA), mitigation, compensation and other negotiations involved in managing projects are undertaken. Recommendations are provided for Brazil, and these may also be applicable to other countries with a similar context. Our research, which was undertaken in 2012 and 2013, comprised: (1) a thorough document analysis of relevant documents, including legislation, regulatory procedures, court cases, agency procedures and manuals, international and national governmental and non-governmental organization reports and other documents, a review of agency, corporate and NGO websites, together with an extensive monitoring of the conventional media and social media; (2) participation in various workshops in Brazil and elsewhere that were related to impact assessment and/or Indigenous peoples; (3) eight key informant interviews and many informal discussions with stakeholders from various backgrounds, including representatives of governmental agencies (e.g. the Federal Office of Public Prosecution), NGOs, Indigenous organizations, the private industrial sector, and impact assessment practitioners. The lead author is Brazilian and has previously worked as an anthropologist in the mining sector and with Indigenous peoples in Brazil.

2. The complexity of ethnicity and indigeneity in Brazil

Brazil, the fifth largest country in the world at over 8.5 million km^2 and a population of over 190 million inhabitants (Brasil, 2011b), has a considerable ethnic diversity that defies generalization with respect to its Indigenous peoples. There are 241 Indigenous ethnic groups speaking over 150 different languages, with a total of nearly 900,000 individuals or 0.47% of the Brazilian population who identify as Indigenous (ISA, 2013b). In addition, various kinds of 'traditional communities' are also legally recognized (Brasil, 2007). The *National Policy for the Sustainable Development of Traditional Peoples and Communities* (Decree 6040) defines traditional peoples as:

> culturally differentiated groups which recognize themselves as such, have their own forms of social organization, which occupy and use territories and natural resources as a condition for their cultural, social, religious, ancestral and economic reproduction, using knowledge, innovations and practices generated and transmitted by tradition (Brasil, 2007: Article 3, author translation).

In addition to the 241 Indigenous peoples, 27 different 'traditional communities' have been recognized (Ypade, 2013). Decree 6040 provides a differentiated legal status for such groups, requiring the use of culturally appropriate procedures in order to guarantee cultural reproduction in their traditional territory (Brasil, 2007). The word 'territory' has a specific meaning, referring to the land that an Indigenous or traditional group occupies and is dependent upon for its cultural reproduction. There is usually an intense relationship between each group and its territory based on traditional environmental knowledge and place attachment, which is referred to as 'territoriality' (Little, 2003).

The precise identification of which groups and individuals are regarded as 'Indigenous' or 'traditional' is not always clear-cut. As the Brazilian anthropologist, Viveiros de Castro (2006:7, author translation), ironically suggests, "in Brazil everybody is an Indian, except those who are not". He argues that Indigenous identity is a juridical question, not an anthropological one. In many situations, the boundaries and cultural identities between ethnic groups are blurred (Guzmán, 2006; Oliveira, 1998), often making it unrealistic to assign identity, individual or collective, according to specific and mutually exclusive categories, as required by law.

The problems of assigning ethnic identity that are experienced in the Brazilian context are also found at the international level. Defining 'Indigenous' has been incredibly difficult (United Nations, 2004), and most conventions and agreements shy away from providing a definition. For example, the UNDRIP does not provide any definition (UN General Assembly, 2007). The ILO C169 definition also includes the notion of 'tribal peoples', a category that became applied to afro-descendent Maroons in Brazil (descendants of escaped slaves, known as *Quilombolas*). According to Articles 1 and 2 (ILO, 1989):

1. This Convention applies to:
   (a) tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations;
   (b) peoples in independent countries who are regarded as Indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.
2. Self-identification as Indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply.

Although the ILO C169 does not specifically mention 'traditional peoples', its scope is broad and it can be considered adequate to determine which particular communities in Brazil are considered Indigenous or traditional, although Brazilian law emphasizes the need for attachment to a given territory (Brasil, 2007). Furthermore, it must be stressed that the ILO and other international agencies regard self-identification as a fundamental criterion, giving the possibility for Indigenous peoples themselves to say who is Indigenous (Cobo, 1986; IFC, 2012; United Nations, 2004; World Bank, 2005). The self-identification criterion also avoids the situation where states could deny the ethnic identity claims of Indigenous peoples (Corntassel, 2003).

The principle of self-identification is related to the process of ethnogenesis. As a global phenomenon (Sider, 1976; Weisman, 2007; Whitten, 1976), ethnogenesis can be defined as the historical emergence of a group of people who claim a separate sociocultural heritage differentiated from the broader society in situations in which they were not previously recognized as such. In Brazil, the number of new groups claiming a separate heritage (Indigenous, Maroon or traditional) increased considerably during the 1980s and 1990s due to the revised Constitution of 1988 and related public policies that accorded special status to these groups. The emergence of new groups applying for official state recognition of their culturally distinct status continues today (Arruti, 2000). This has been a complicating factor in the licensing process in Brazil. For example, despite an initial assessment based on desktop research or fieldwork which did not identify any Indigenous or traditional group being present in the region of a proposed project, a group claiming special status may emerge during or after the process of conducting an impact assessment.

Another complication with regard to Indigenous rights and the licensing process is caused by the presence of groups who have not been in contact (or only recently in contact) with the larger society. Further, some groups choose to live in voluntary isolation, usually as a consequence of previous violent interactions with non-Indigenous people. The Brazilian National Indigenous Agency (FUNAI) has identified 28 uncontacted groups and estimates that there may be more than 50 unconfirmed cases. All but one of these groups is in the Amazon region (ISA, 2013c). The development of projects in localities near such peoples is very delicate, since an FPIC process cannot be conducted with an unknown group or one that refuses contact. It could be argued that the

very fact that they avoid contact is in itself an indication of their denial of consent for the project.

Indigenous, Maroon and traditional communities in Brazil hold the status of 'culturally-differentiated communities', giving them specific rights (Brasil, 2007). As Brazil is a signatory to ILO C169, when these peoples are affected by legislative or administrative measures, such as the licensing procedures for infrastructure projects, they must be consulted in a manner consistent with FPIC principles (Hanna and Vanclay, 2013). The analysis of the social impacts on Indigenous peoples is considered in an 'Indigenous Component Study', which is part of the EIA. In this paper, the term 'Indigenous peoples' will be used as a generic category to include Maroons and traditional peoples (unless specifically mentioned otherwise), although we point out that there are some situations when not all rights and procedures are shared by all three groups.

3. Indigenous peoples and impact assessment

In order to comprehend how Indigenous peoples can participate in and contribute to impact assessment and environmental management, it is necessary to consider how their knowledge about the environment has developed. There are different cultural traditions to build knowledge about the world; the scientific mode of interpreting the world and solving problems is one of these. However, Indigenous knowledge, which has been built over generations in a specific ecosystem, may be more appropriate than scientific knowledge when considering solutions to issues in their local environment. Knowledge can be understood as analogous to culture, i.e. "what a person employs to interpret and act on the world" (Barth, 2002:1). However, different to culture – which is usually understood as being shared equally in a society – knowledge is unevenly distributed. Therefore, there are people who have knowledge about certain topics and are able to transmit it, while other members of the same cultural group might not have this specific knowledge. In the case of Indigenous cultures, knowledge tends to be distributed according to gender and age groups, as well as according to specific capacities exhibited and authorities held by certain members of these groups.

These alternative ways of comprehending the world can be regarded as forms of 'traditional knowledge' (TK) or 'traditional ecological knowledge' (Berkes, 2008; Mauro and Hardison, 2000). These concepts refer to different ways of understanding the world and/or different ways of doing science (Ellen, 2002; Ingold, 2000). In EIA, specific forms of TK, such as ethnobotany and ethnozoology, can and should be applied. The Convention on Biological Diversity supports the use of TK in impact assessments, considering it not only as legitimate, but also as equally valid to western scientific knowledge (Secretariat of the Convention on Biological Diversity, 2004). Considering the different knowledge systems without prejudice, rather than merely as "native beliefs", is the first step in taking TK seriously (Cochran et al., 2008) and, in fact, is an ethical requirement in impact assessment (Vanclay et al., 2013). Several examples in the literature demonstrate that applying TK in environmental conservation and assessment leads to improved solutions in the mitigation of project impacts (Huntington, 2000; O'Faircheallaigh, 2007; Sallenave, 1994; Stevenson, 1996; Usher, 2000; Wiles et al., 1999).

The Berger Inquiry, a report that assessed the effects of the proposed Mackenzie Valley pipeline in northwest Canada, is considered to be one of the first impact assessment processes to include Indigenous TK (Gamble, 1978; Sallenave, 1994; Tsuji and Ho, 2002), and even one of the first to consider social impacts in the decision making process (Vanclay, 2014). The World Bank has recommended the use of TK in conjunction with scientific knowledge (Davis and Wali, 1994) and various studies demonstrate that TK can be a key component in environmental management, because of the specific techniques and knowledge Indigenous peoples have about their ecosystems (Posey, 1985). In fact, some Amazonian ecosystems are highly anthropogenic, in a positive way, as Indigenous peoples have managed them for extensive periods of time, increasing the biodiversity over the years through the use of traditional environmental management techniques (Balée, 1993; Posey, 1998).

One of the biggest challenges in incorporating TK into environmental management is the lack of acceptance of the spiritual and cosmological values of Indigenous peoples. This is important because the cosmological understanding (worldview) provides the guidance Indigenous people need to maintain a given ecosystem (i.e. their territory) in equilibrium, and provides prescriptions about issues such as the extraction of resources and ways of dealing with the environment, other peoples etc. (Albert, 2002; Arhem, 1996; Posey, 2002).

Brazil has demonstrated its respect for Indigenous peoples by being a signatory to ILO C169 and UNDRIP, and by initiating a consultation process with Indigenous and Traditional Peoples which led to Decree 6040 and other participatory engagements with Indigenous peoples. An underlying concept in Brazil's policies has been the concept of ethnodevelopment (Stavenhagen, 1985), which considers development according to each cultural context, thus giving Indigenous peoples the right to decide their own future (or development path). In 2008 the Brazilian government implemented an extensive process of consultation with Indigenous peoples in order to incorporate the use of TK into the environmental and territorial management of Indigenous reserves, which resulted in the "*Política Nacional de Gestão Territorial e Ambiental em Terras Indígenas*" (PNGATI, National Policy for the Environmental and Territorial Management in Indigenous Reserves) (Brasil, 2012). Formed by an Inter-Ministerial Working Group and Indigenous representatives, PNGATI aims to "guarantee and promote the protection, recovery, conservation and sustainable use of natural resources in Indigenous reserves and territories, assuring the integrity of Indigenous patrimony, improvement of the quality of life, and proper conditions for the physical and cultural reproduction of actual and future generations of Indigenous peoples, respecting their sociocultural autonomy" (Brasil, 2012:1, author translation). PNGATI aims to meet its goals through the use of ethnomapping and ethnozoning, utilizing TK to identify areas of environmental, sociocultural or productive relevance for Indigenous groups. The policy also considers environmental management as a key component of Indigenous territorial protection.

Lane and Corbett (2005) argue that the requirement for Indigenous participation in EIA is not on its own sufficient to ensure a good process. What is needed is a defined and effective process for participation, with early engagement, trust between parties, respect for Indigenous cultural values, long-term perspective, and sufficient time and human resources (Emery, 2000). For Brazil, the guidelines established in the PNGATI policy are very useful for defining participatory processes with Indigenous peoples. Unfortunately, these guidelines are not directly used in Brazil's current EIA procedures. Nevertheless, PNGATI's guidelines could be adapted to apply to EIA when Indigenous peoples are involved.

A good example of including TK in impact assessment is the modification of the Onça-Puma nickel plant project, which is located near the Xikrin do Cateté Indigenous Reserve in state of Pará. Originally the project intended to use water from the Cateté River for mining operations. However, after an ethno-ecological study, which was required as one of the conditions for environmental licensing and conducted with the broad participation of the affected group, it was evident that the river was essential for their livelihood and that the use of its water was strongly opposed, especially by the women (Inglez de Souza and Giannini, 2005). "As an alternative measure, the company constructed a storage dam, built in such a way that it ensured that local streams had water throughout the year, rather than only during the wet season. Therefore, as well as avoiding a potentially negative impact, the new design provided a positive benefit to the Xikrin and other communities" (ICMM, 2010:77).

The use of bottom–up processes can produce very positive results, such as in the example presented above, but it is no guarantee that the outcomes are going to be democratic or beneficial for local communities (Lane and Corbett, 2005). At the local level, inequalities also exist and participation of all segments of the community should be encouraged (Vanclay, 2003). Besides participation in the EIA, it is recommended that an Indigenous committee also be invited to participate in the follow-up of the EIA (Morrison-Saunders and Arts, 2004; O'Faircheallaigh,

2007), a requirement that should be documented in a Social Impact Management Plan (Franks and Vanclay, 2013) or similar instrument. According to Carneiro da Cunha and Almeida (2000:326), "the major bottleneck in involving local communities in conservation plans and putting them in control stems from the effort to give these plans local meaning. Agendas have to merge, benefits have to reach the communities, training and techniques have to be provided". In order to have local meaning, bottom–up processes need to be conducted according to the FPIC philosophy.

4. The Brazilian legislative and regulatory context for impact assessment concerning Indigenous peoples

Brazil is a federation of 26 states plus the Federal District of the capital, Brasília. The environmental licensing procedure may be conducted at the state or national (federal) level. According to Brazilian legislation, projects located near the national borders, involve mining of radioactive materials, or affect two or more states (e.g. roads and railways), military complexes, conservation areas or Indigenous reserves need to be licenced at the national level by the Brazilian Environmental Agency (IBAMA) (Brasil, 1997). This may lead to a major difference in the quality of the licensing process and its results, as "EIA varies greatly in its nature and effectiveness depending on the region, state, or municipality within which it is being carried out" (Glasson and Salvador, 2000:193).

This paper analyzes the federal licensing procedure since it is at this level where projects affecting Indigenous peoples are considered. However, often proponents try to ignore the presence of Indigenous peoples in order to seek approval at a state level, which is considered to be easier and faster, especially in the less-developed states due to the lack of skilled personnel, material resources or political support (Glasson and Salvador, 2000). Nevertheless, in 2013 some 3000 project proposals involving Indigenous peoples were currently under consideration by the relevant federal agencies (Borges, 2013).

According to Brazilian law, an environmental licence is an:

> administrative act by which the competent environmental authority establishes the conditions, restrictions and environmental control measures that must be met by the proponent, physical or juridical person, to locate, install, operate or expand enterprises or activities, which use environmental resources, are considered to be actual or potential polluters, or which in any way may cause environmental degradation (Brasil, 1997: Article 1, author translation).

This same Resolution requires the production of an *Estudo de Impacto Ambiental* (EIA) (i.e. a complete environmental impact statement) and the production of a 'reader-friendly' version called a *Relatório de Impacto Ambiental* (RIMA or simplified Environmental Impact Report). These documents together form the EIA–RIMA, which is used by the competent authority to determine approval, mitigation measures and/or conditions for project implementation. Studies required for the EIA are divided into three categories: (1) physical environment (air, soil, water, etc.); (2) biological environment and natural ecosystems (fauna and flora); and (3) socio-economic environment (Brasil, 1986). IBAMA determines the Terms of References (ToR) for each EIA depending on the context of the project being considered and has produced a generic set as advice to proponents. For a hydroelectric power plant, for example, it states that the socio-economic study should address the following items: population dynamics; use and occupation of land; socioeconomic characteristics of affected communities; the structure of the local economy; social organization, infrastructure and public services; historical, cultural, archaeological and paleontological heritage; leisure, tourism and culture; and Indigenous or traditional communities (Brasil, 1986; IBAMA, 2005).

While IBAMA issues the ToR for the EIA, the responsible institution for issuing a ToR for the Indigenous Component Study is FUNAI. The Indigenous Component is done as part of the EIA, with IBAMA consulting FUNAI on all pertinent matters. In the case of Maroons, separate government agencies, *Fundação Cultural Palmares* (FCP) and *Instituto Nacional de Colonização e Reforma Agrária* (INCRA) are consulted (Brasil, 2011a). *Instituto Chico Mendes de Conservação da Biodiversidade* (ICMBio) is responsible for other traditional communities. Although there is some criticism, in general there is acceptance amongst anthropologists about the quality of the ToRs issued by FUNAI, partly because the ToRs are comprehensive enough to ensure that anthropologists/consultants can write a complete report fully responding to the designated topics without fear that proponents will request omission of certain information (de Paula, 2010).

In the case of Indigenous peoples, FUNAI provides a ToR specific to each proposed project, depending on the nature of the project and characteristics of the affected group. The ToR provides detailed instructions as to what should be considered in the Indigenous Component. The ToR for the Belo Monte Dam (FUNAI, 2008, author translation), for example, required four overarching topics to be addressed:

1. An environmental, hydrological and cartographical description of the affected Indigenous reserves;
2. A description of Indigenous use of the land and use of the physical and environmental resources, especially as these pertain to physical and cultural reproduction;
3. An analysis of the relationships between the impacted Indigenous groups with the surrounding society and other Indigenous groups, taking into account the socio-political, economic and cultural context;
4. An identification and analysis of possible impacts arising from the installation and operation of the project.

The licensing procedure consists of three stages: a Prior License, Construction License, and an Operation License (see Fig. 1). After the EIA is undertaken by the proponent (or its consultants), the resultant EIA–RIMA is submitted to the licensing institutions as well as to the impacted communities in the lead-up to public hearings — or, if Indigenous peoples are affected, an FPIC process consistent with ILO C169 requirements. When Indigenous peoples are affected, the legislation also requires their participation and the utilization of traditional knowledge in conducting the studies and in proposing mitigation measures (Brasil, 2011a, rf. annex III B).

When the EIA is deemed to be acceptable by all the relevant agencies and after completion of public hearings or the FPIC process, IBAMA issues a Prior License usually stipulating certain conditions (or conditionalities) typically relating to mitigation measures. Later the mitigation measures are expanded in a *Plano Básico Ambiental* (PBA or Basic Environmental Plan), the stage in which Indigenous peoples participate. The PBA, which is in effect a social and environmental impact management plan, is the statement of all agreed conditions between the proponent and the impacted groups. Most negotiations about agreement provisions and mitigation measures occur during the development of the PBA. A construction licence is issued when FUNAI and IBAMA have approved the PBA. To obtain the Operation License, proponents need to have complied with all agreed conditions and implemented the necessary mitigation. The Operation License is reviewed after a designated period of operation, which can in some cases be decades.

5. Issues related to the implementation of FPIC

FPIC came to prominence through the drafting of ILO C169 and UNDRIP, although it is not specifically defined in these documents (Hanna and Vanclay, 2013). This has led to debate about the meaning of, and mechanisms to implement, FPIC. There is a growing interest in seeing FPIC as a philosophy about Indigenous rights rather than as merely a consultation mechanism (Doyle and Cariño, 2013). Some authors argue that it should be a philosophy that applies to all communities, Indigenous or otherwise (Hill et al., 2010; Vanclay and Esteves, 2011). It is clear that FPIC should be comprehended and applied as a

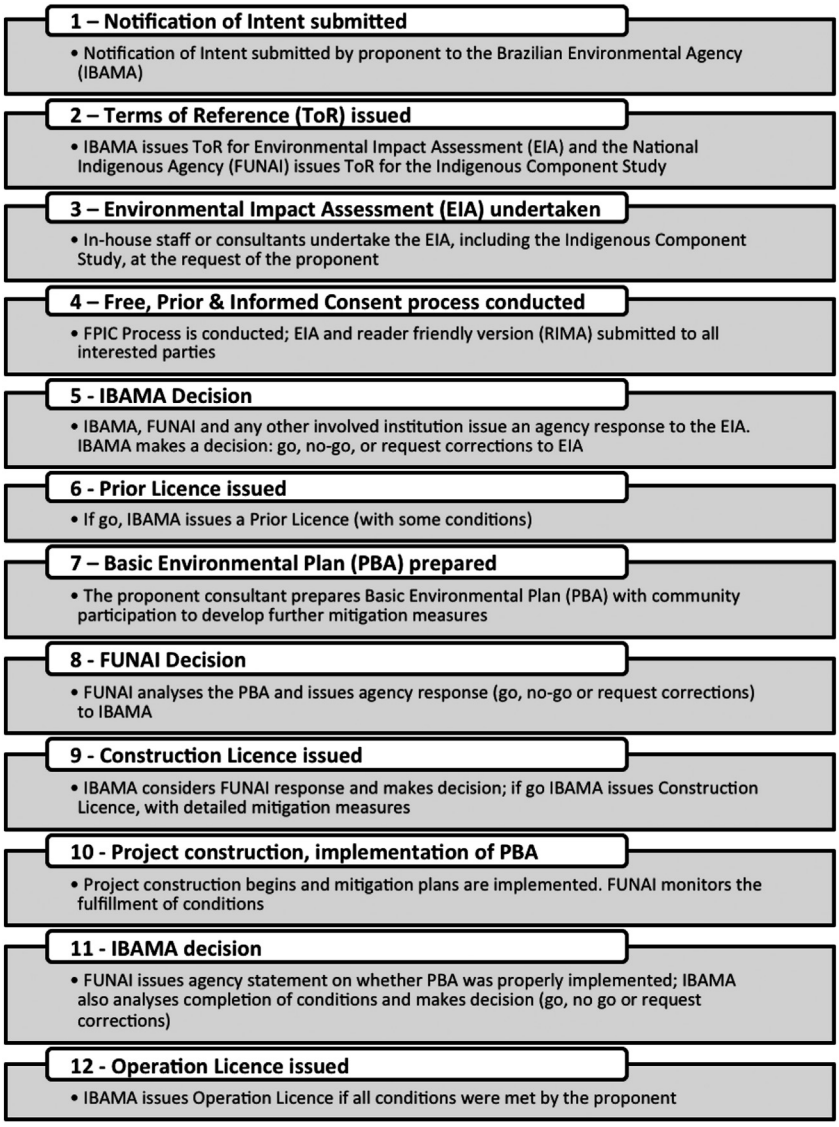

Fig. 1. Simplified scheme of the Brazilian Federal Environmental Licensing Procedure involving Indigenous peoples (based on Figueiredo and Pedroso, 2011).

process of continuous engagement, rather than as a once-off mechanism to obtain approval to proceed. Doyle and Cariño (2013:74) propose that the requirement for FPIC "must apply at each stage in a project life cycle, from concession application through to project closure".

For countries that have signed ILO C169 (and arguably UNDRIP), the environmental licensing procedures (along with all government legislative or administrative matters) must be subject to consultation with Indigenous peoples who are affected by them (ILO, 1989; UN General Assembly, 2007). Despite the fact that ILO C169 was ratified by Brazil in 2002 and is enshrined in local law through Decree 5051 (Brasil, 2004), FPIC is not properly implemented (ILO, 2012; ISA, 2013a). In 2013, there were protests from several Indigenous groups about the lack of adequate consultation (Boadle, 2013).

It is expected that the licensing procedure will become more open and participatory for Indigenous peoples once a new Brazilian regulation to articulate FPIC requirements is adopted (as of November 2013, this is anticipated to be in 2014). The government is already applying FPIC in the process of developing the new regulation. Experiences elsewhere, however, show that even with a regulated FPIC process, such as in the Philippines, fraud, bribery, box-ticking, and a general lack of sincerity or good faith, still happen, and proponents still attempt to 'engineer consent' (Cariño and Colchester, 2010; Doyle and Cariño, 2013).

An example of a controversial consultation is the licensing process for a series of hydroelectric power plants on the Tapajós River, near the Munduruku Indigenous Reserve in the Brazilian Amazon. The Munduruku people organized protests to stop some of the required EIA sub-studies that were being conducted inside or near their territory. To guarantee the safe completion of the studies, the federal government even sent in the military (Watts, 2013). As the protests escalated and the federal government failed to address their claims, the Munduruku kidnaped three biologists and destroyed their research data (Medeiros and Braga, 2013). Aware of what had happened in Belo Monte, another current controversial project (Fearnside, 2006; Jampolsky, 2012), the Munduruku demanded to be consulted before any study was conducted. This particular case raises an important question: at what point in the licensing process should FPIC take place in order to comply with both the 'Prior' and 'Informed' aspects of FPIC? Studies need to be conducted in order for a FPIC process to be fully informed, but then it would not be 'Prior' anymore, as communities had not provided consent for the impact assessment to be conducted.

A possible solution to this paradox is to understand FPIC as a process of continuous engagement and approval involving the ongoing participation of Indigenous peoples at all stages in the impact assessment process. The approval at each phase should be regarded as only valid for that specific stage in the process. This already happens to some extent

in current practices in Brazil, as Indigenous peoples are required to: approve the technical team conducting the studies; approve the work plan; participate in the fieldwork as collaborators of the technical team; and consider the final report. Where an impact assessment is legitimate, participating in the EIA would assist the affected Indigenous groups in becoming properly informed about the likely impacts, as their traditional specialists would be able to help identify many of the specific impacts on the Indigenous group and their territory (i.e. their living environment). An EIA that considers traditional knowledge at the same level as scientific knowledge and that allows the impacted community to participate in the decision making process after being fully informed would be consistent with the philosophy of FPIC. Therefore, communities should participate in the EIA from the beginning in order to better comprehend and define the potential impacts, and to give consent or not for each successive stage. It is important to mention that Indigenous participation in EIA should only be encouraged when the process is legitimate and Indigenous peoples have a chance to influence the outcomes. If it is only a tick-the-box process with no genuine commitment to engagement, then non-participation may be the appropriate strategy, such as in the example of the Munduruku provided earlier.

There is disagreement over whether a community should have power of veto, which is arguably implied by the concept of consent. While many question what could 'consent' possibly mean if it did not imply the ability of communities to withhold approval, others suggest that there is no right to veto (Feiring, 2013; OHCHR, 2010). Part of the problem is what is meant by 'veto'. With the recent recognition of FPIC by the International Council on Mining and Metals (ICMM, 2013), the NGO, First Peoples Worldwide, strongly criticized ICMM's position on veto (FPW, 2013). They referred to the Guidelines on FPIC from the UN-REDD (2013:20) program, which clearly states that consent should be considered as a "freely given decision that may be a 'Yes' or a 'No', including the option to reconsider if the proposed activities change or if new information relevant to the proposed activities emerges". However, according to ILO representatives and Prof. James Anaya (the UN Special Rapporteur), there is no right of veto, as veto would constrain communication and polarize parties into intransigent positions, making it difficult to reach consensus (Feiring, 2013; OHCHR, 2010). Indigenous and traditional peoples' organizations are now concerned about the extent to which their perspectives will be taken into account during the decision making-process, or if they will be considered at all (CPI-SP, 2013), since consultation usually takes place when key decisions have already been made. A suggestion that emerged in one of our interviews was that Indigenous organizations should be represented on the National Council on Energy Policy (*Conselho Nacional de Política Energética*) so that they would have the opportunity to influence Brazil's energy policy in advance, rather than only being consulted when the decision to build the dams has already been made.

Despite the difficulties in implementation, FPIC is becoming widely accepted by many international organizations and leading companies (Voss and Greenspan, 2012). Our interviews revealed that many experts working with FPIC consider that, rather than a 'one size fits all' formula to cater for all situations, each should be done on a case-by-case basis, always respecting the principles of mutual respect and acting in good faith, and understanding FPIC as an ongoing process of dialogue, rather than being a single point in time after which consultation ends.

6. Limitations of the licensing procedure

In theory, the Brazilian environmental licensing procedure meets or even exceeds international best practice standards (Wood, 2003), however, issues with EIA follow-up and the enforcement of provisions are similar to those faced in other countries (Morgan, 2012; Morrison-Saunders and Arts, 2004; Wessels, 2013; Wood, 2003). According to a World Bank (2008:9) report that addressed the hydropower sector in Brazil, in practice "problems include the poor quality of the EIAs submitted by project proponents, the subsequent uneven evaluation of the EIAs (by the Government), the lack of a suitable dispute resolution system, the absence of comprehensive rules for social compensation for populations impacted by hydropower projects, and the shortage of qualified social development specialists within the Government's federal environmental agency". This gap between defined procedure and actual practice, or the 'governance gap' (B&HRI, 2010), is discussed below.

Despite several advances towards greater participation of Indigenous peoples in Brazilian EIA, the impacts of large development projects "are still underestimated; compensatory measures are unsatisfactory and not implemented as planned. Even worse, the proponents are not held accountable" (Santilli, 2013: online, author translation). Communities participate during the design of the PBA, but do not have any legal mechanism to enforce the implementation of conditions. Officially, when conditions are not fulfilled, the project licence should be suspended until the conditions are fully met, however, case history reveals that project construction usually meets its time schedule, while mitigation measures lag far behind (IBAMA, 2013; Santilli, 2013). Besides this, the exertion of power, influence and even corruption to facilitate or speed-up the issuing of licences occurs (Brito and Barreto, 2006; de Paula, 2010; Fearnside, 2005; Sevá Filho and Pinheiro, 2006). For example, in 2011 the IBAMA president resigned over the pressure exerted by the Eletronorte Board to give rapid approval to the Belo Monte dam (Rocha, 2011). Eletronorte is a public–private company and a major shareholder in the Belo Monte dam consortium.

Miranda (2007) argues that manipulations of the licensing procedure are more likely to occur in contexts of hybrid state–corporate enterprises because the roles of the proponents and competent agencies become mixed. Since conflict of interest situations exist, clearer negotiation procedures must be provided. Morrison-Saunders and Early (2008) discuss how procedural fairness and natural justice need to be part of all licensing processes. Also needed is: having clear procedures relating to the management of vested interests; a culture of transparency; and oversight by an office responsible for public integrity and the investigation of corruption [in Brazil, this role is undertaken by an Office of Public Prosecution (*Ministério Público Federal*)]. Intervention and greater supervision at early stages potentially would avoid conflict (and associated deaths) and lead to better outcomes (Prenzel and Vanclay, 2014). In Brazil, there is a major limitation regarding the interventions an Office of Public Prosecution might make in that any high-level judge can overrule any injunction (or stopwork order) on the basis of potential "serious harm to public order, health, safety or the national economy" (Brasil, 1992: Article 15, author translation), a juridical spin known as a 'Security Suspension'. Of note is that this particular law allowed the various stopwork orders applied to the Belo Monte dam (because of the lack of FPIC) to be annulled by quick judicial action (ISA, 2013d).

The presence of Indigenous peoples or Maroons may only be identified at a late stage in the licensing procedure due the lack of skilled social staff and/or the lack of good-faith by the proponents. This leads to circumstances where it becomes impossible to apply the prior aspect of FPIC, because project activities have already begun. An additional point of concern for Indigenous organizations in Brazil regards groups who are not yet recognized by the state and those which do not have their territory demarcated yet. Without official recognition, these groups are not likely to be consulted on projects that may affect them, making them more vulnerable to unfair licensing processes and subsequent negative social and environmental impacts. The possibility of ethnic emergence or state recognition of a new group should be considered during the first steps of a licensing process, so that even if a group is not yet legally recognized, a culturally-sensitive SIA and a proper FPIC process can be followed and their rights respected.

To some extent, Brazilian PBAs are similar to the Impacts and Benefits Agreements (IBAs) (O'Faircheallaigh, 2010) used in other countries. One difference is that Brazilian PBAs usually do not provide for financial benefits or royalty-sharing as in IBAs, but are typically focused on implementing community projects intended to mitigate or offset the potential negative impacts of the proposed project. Officially, financial compensation is not allowed unless it is part of a proper mitigation

plan (i.e. the PBA), and the expected practice is to avoid paying compensation or other entitlements in cash. However in practice, communities use the drafting of the PBA as an opportunity to have some power in the process by using tactics such as delaying the completion of the studies for the PBA (which leads to a delay in the granting of an Operation License) or blocking construction sites in order to negotiate other benefits, such as the provision of houses, vehicles, boats and other equipment, and even money (Vieira, 2013). Some argue that these strategies provide a way by which companies can 'buy' their social licence to operate (Jijelava and Vanclay, in press; Prno and Slocombe, 2012). In fact, some companies use a loophole around an alleged need for 'emergency measures' to address 'alleged impacts' as a way of bypassing the normal procedures of the PBA in order to make payments or other arrangements directly to communities, as was the case with Belo Monte (Vieira, 2013). Bronz (2011) and Santilli (2013) suggest that, in most cases, the primary objective of proponents and consultants is to have the environmental licences issued and the projects implemented as quickly as possible, making only the minimum required efforts they need to do to avoid future legal or economic risks to the company, with actions focused on properly mitigating the identified impacts being of only minor importance. Many proponents may find it easier to buy their way in rather than undertake the appropriate longer-term mitigation and enhancement strategies. This buying-off of various groups leads to division and conflict amongst the various communities involved and significantly increases the social impacts that are experienced (Vanclay, 2002).

Another common way to claim compensation during and after the licensing process is through legal action. Blockades also frequently result in judicial disputes. Court decisions can result in the ordering of financial transfers to the impacted communities, instead of addressing the needed mitigation. Without proper planning (such as via the PBA process), this monetization of mitigation (i.e. offering financial compensation rather than addressing the issue) can exacerbate the social impacts experienced by Indigenous peoples (Burdge and Vanclay, 1996; O'Faircheallaigh, 1999).

Gordon (2006) describes how this process operated amongst the Xikrin, a group from the Brazilian Amazon who were first contacted in the 1950s (ISA, 2013b). Their traditional territory borders the Carajás mine, the largest open-pit iron ore mine in the world. According to Gordon (2006), they negotiated substantial financial transfers from the mining company, Vale, through blockades of the mine site and judicial battles, raising the transfer values exponentially every year in order to keep up with an internal inflation in the group caused by a growing demand for western goods. The financial resources and industrial goods were distributed inside the Xikrin community organization via its traditional leaders. This "inflationary consumerism" and the concentration of resources amongst the community elite derived from an internal dynamics within the Xikrin culture, and were not a simple appropriation of western capitalist culture. Although these cultural aspects and respect for the right to self-determination of the Xikrin to control their own finances must be considered, the transfer of financial resources without proper planning resulted in health, social and environmental impacts comparable to the impacts caused by the mine operation itself, as Gordon (2006:413, author translation) elaborates:

> The high consumption of processed foods, the intake of salt, fats and sugars (and sometimes alcohol), together with a more sedentary lifestyle has resulted in certain bodily changes and the emergence of diseases: obesity, diabetes, hypertension. Non-degradable waste, inorganic waste, plastics and batteries pile up in the village to a considerable extent, permeating the soil, contaminating water and causing other diseases. The Xikrin relate it all to the way of life of the whites, which they now share with increasing intensity.

Anthropologists should play a major role in mediating the relations between companies and Indigenous peoples, especially by conducting participatory impact assessments that incorporate the use of traditional knowledge for the drafting of culturally-appropriate IBAs. Several authors propose that anthropologists should act as facilitators or brokers to achieve a middle ground in such situations, providing cultural translation between such different worlds (Baines, 2011; Cardoso de Oliveira, 2004; de Paula, 2010; Gilberthorpe, 2013; Henriksen, 2004; Oliveira, 2010). Ideally, studies conducted by consultants as part of the EIA process should be objective. However, consultants are hired by the proponents of the projects, and as the motto goes, 'the customer is always right'. This commercial relationship can lead to manipulated reports that understate the impacts of a proposed project, as documented in Australia (Herbert, 2012) and Brazil (Magalhães and Hernandez, 2009). A further limitation is that the anthropologist-consultants hired to design the mitigation plans (PBAs in Brazil) are usually different to those hired to implement them (de Paula, 2010).

In order to speed-up the licensing procedure, in 2011 the federal government issued the Inter-Ministerial Ordinance 419 (Brasil, 2011a), which sets a limit of 90 days for the relevant institutions, such as FUNAI, to issue their response regarding an EIA–RIMA to IBAMA. Unfortunately, this ordinance was not supported with an increase in the number of personnel working in these agencies and led to severe pressure on them. For example, in 2013 it was reported that FUNAI was processing 2958 environmental licensing applications with only 17 professional staff to analyze them (Borges, 2013). In 2012 there was a strike by FUNAI staff, demanding better working conditions, equipment, training and the hiring of new personnel (Agência Brasil, 2012). Our informants indicated that the strike led to a few improvements, but there remains need for more staff.

A final problem is that the Indigenous Component Study is a part of a broader socio-economic study and also part of the overall EIA process. The ToRs and the EIA–RIMA reports tend to be conceived and conducted by environmental professionals, not social experts. This leads to studies that give more importance to the environmental aspect than to the social and/or Indigenous issues (Daou, 2010), and usually results in only superficial consideration being given to the socio-economic component (Fernandes, 2005; Oliveira, 2010; Utsunomiya and Montaño, 2009). This was of great concern to most stakeholders interviewed for this research, and is reported as a common experience internationally (Baines et al., 2013; Slootweg et al., 2001).

7. Conclusion

Indigenous peoples worldwide have historically been excluded from the environmental management and control over the resources located in their lands (O'Faircheallaigh, 2007). Enabling their participation in EIAs about projects that affect their territories is a basic step towards respecting the right of Indigenous peoples to self-determination (Colchester, 2000) and to control their own destiny (Anaya, 2009). However, Indigenous participation in EIA processes has not been as effective as desired (Lane and Corbett, 2005), partly because of the power imbalance between proponents and Indigenous peoples (O'Faircheallaigh and Corbett, 2005). On the basis of our study, we see potential for improvement. Regulation in Brazil and elsewhere needs to provide mechanisms to avoid bias in EIAs and in the licensing process. Companies and the professionals responsible for conducting impact assessments should be held accountable for cases where impacts have been fraudulently understated or where FPIC processes have been manipulated. Greater respect for Indigenous peoples needs to be demonstrated. In a Brazilian context, this respect would imply: carefully considering claims of indigeneity when they are made; always being prepared for the possibility of the emergence of new ethnic groups in a locality facing development; and finally that no approval should be granted for projects that may impact on 'isolated groups', i.e. those who have signaled their desire not to be contacted, and those known not to have been contacted. The fact that groups are in a non-contact situation clearly indicates that they would not give their consent if they

were asked in an FPIC process. To attempt to engage with these groups would be a denial of the right to self-determination and would potentially irreversibly affect their lives.

As demonstrated in emblematic examples such as the Belo Monte dam, Indigenous peoples mobilize through protests and other forms of action in order to have their rights respected (O'Faircheallaigh, 2013). Companies and governments should comply with international legislation (United Nations, 2011), and fully involve impacted groups in the licensing and project planning processes, taking Indigenous perspectives and traditional knowledge fully into account. Indigenous peoples need to participate in the impact assessment in order that the 'prior' and 'informed' dimensions of FPIC can be met. In this way, a fair agreement might be reached, avoiding the blockades and judicial battles that have frequently beset project implementation in Brazil and elsewhere.

The way Indigenous peoples are considered in the environmental licensing process can be improved in Brazil and elsewhere if the following recommendations are considered:

- Indigenous communities need to be consulted at an early stage, while locational and technical alternatives of the project are still feasible, and in a way consistent with FPIC. They also should have a greater involvement in national development planning fora, such as the National Council on Energy Policy, in order to be able to contribute to decision making about projects before licensing processes are underway.
- Indigenous experts need to be included in the impact assessment teams and their traditional knowledge fully considered, without discrimination, by the technical and scientific team members — who ought to be trained in cross-cultural engagement.
- Independent Indigenous committees should be established to monitor the fulfillment of mitigation measures provided in Impacts & Benefits Agreements (PBAs in Brazil) and Social Impact Management Plans. Oversight by an 'honest broker' (such as an office of public integrity or corruption commission) is necessary from an early stage, and not only after conflict occurs.
- The competent agencies and companies should employ more personnel with social science qualifications. Social experts, preferably anthropologists with experience with the specific impacted groups rather than generic environmental specialists, should be engaged to monitor and actively participate throughout the environmental licensing process.
- Accountability, enforcement and grievance mechanisms must be strengthened. Companies, governments and the professionals responsible for conducting the EIAs and SIAs need to be held accountable when impacts are consciously understated, mitigation measures not adequately implemented, and/or when FPIC processes are not conducted in good faith.

References

Agência Brasil. *Servidores da Funai anunciam continuidade da greve por tempo indeterminado* [Homepage of Agência Brasil], [Online]. Available http://agenciabrasil.ebc.com.br/noticia/2012-07-09/servidores-da-funai-anunciam-continuidade-da-greve-por-tempo-indeterminado, 2012. [2013, August 21].

Albert B. O ouro canibal e a queda do céu. Uma crítica xamânica da economia política da natureza (Yanomami). In: Albert B, Ramos A, editors. Pacificando o branco: cosmologias do contato no Norte-Amazônico. São Paulo: IMESP/IRD/Ed.UNESP; 2002. p. 239–74.

Anaya J. The right of Indigenous peoples to self-determination in the post-declaration era. In: Chartres C, Stavenhagen R, editors. Making the declaration work: the United Nations Declaration on the Rights of Indigenous peoples. Copenhagen: International Work Group for Indigenous Affairs; 2009. p. 184–99.

Anaya J. Report by the special rapporteur on the situation of human rights and fundamental freedoms of Indigenous people. Addendum: cases examined by the special rapporteur (June 2009–July 2010). Geneva: United Nations; 2010.

Arhem K. The cosmic food web: human–nature relatedness in the Northwest Amazon. In: Descola P, Pálsson P, editors. Nature and Society. Anthropological Perspectives. London: Routledge; 1996. p. 185–204.

Arruti JMA. From 'mixed Indians' to 'Indigenous remainders': strategies of ethnocide and ethnogenesis in northeastern Brazil. In: Assies W, Haar GVD, Hoekema AJ, editors. The challenge of diversity: indigenous peoples and reform of the state in Latin America. Amsterdam: Thela Thesis; 2000. p. 97–121.

B&HRI. How to do business with respect for human rights: a guidance tool for companies. The Hague: Global Compact Network Netherlands; 2010.

Baines S. Antropologia do desenvolvimento e a questão das sociedades indígenas. Rev Anthropol 2011;15(2):29–46.

Baines J, Taylor C, Vanclay F. Social impact assessment and ethical social research principles: ethical professional practice, Part II. Impact Assess Proj Apprais 2013;31(4):254–60.

Balée W. Indigenous transformation of Amazonian forests: an example from Maranhão, Brazil. L'Homme 1993;33(126):231–54.

Barth F. An anthropology of knowledge. Curr Anthropol 2002;43(1):1–18.

Berkes F. Sacred ecology: traditional ecological knowledge and resource management. Philadelphia: Taylor & Francis; 2008.

Boadle A. *Amazon Indians occupy controversial dam to demand a say* [Homepage of Reuters], [Online]. Available http://www.reuters.com/article/2013/05/03/us-brazil-dams-protest-idUSBRE94211820130503, 2013. [2013, August 21].

Borges A. *Com orçamento de R$ 609 milhões, Funai tem apenas 17 pessoas no licenciamento* [Homepage of Valor Econômico], [Online]. Available http://www.valor.com.br/politica/3089662/com-orcamento-de-r-609-milhoes-funai-tem-apenas-17-pessoas-no-licenciamento, 2013. [2013, September 10].

Brasil. Resolução 001, 23 de Janeiro de 1986. Dispõe sobre critérios básicos e diretrizes gerais para a avaliação de impacto ambiental [Resolution 001, 23 January 1986] Brasília: Diário Oficial da União (DOU); 19862548–9 [17 February 1986].

Brasil. Lei 8.437, de 30 de Junho de 1992. Dispõe sobre a concessão de medidas cautelares contra atos do Poder Público e dá outras providências [Law n. 8.437, 30 June 1992]Brasília: Diário Oficial da União (DOU); 19928357 [01 July 1992].

Brasil. Resolução 237, 29 de Dezembro de 1997. Estabelece a revisão dos procedimentos e critérios utilizados no licenciamento ambiental, de forma a efetivar a utilização do sistema de licenciamento como instrumento de gestão ambiental, instituído pela Política Nacional do Meio Ambiente [Resolution 237, 19 December 1997]Brasília: Diário Oficial da União (DOU); 199730841–3 [24].

Brasil. Decreto 5051, 19 de Abril de 2004. Promulga a Convenção no 169 da Organização Internacional do Trabalho - OIT sobre Povos Indígenas e Tribais [Decree n. 5051, 19 April 2004]Brasília: Diário Oficial da União (DOU); 20041 [20 April 2004].

Brasil. Decreto 6.040, 7 de Fevereiro. Institui a Política Nacional de desenvolvimento sustentável dos povos e comunidades tradicionais [Decree n. 6.040, 7 February 2007]Brasília: Diário Oficial da União (DOU); 2007p.316 [08 February 2007].

Brasil. Portaria Interministerial 419 de 26 de Outubro de 2011 - Regulamenta a atuação dos órgãos e entidades da Administração Pública Federal envolvidos no licenciamento ambiental, de que trata o art. 14 da Lei no 11.516, de 28 de agosto de 2007. Brasília: Diário Oficial da União (DOU); 2011a81 [28 February 2011].

Brasil. Sinopse do censo demográfico 2010. Rio de Janeiro: Ministério do Planejamento, Orçamento e Gestão, Instituto Brasileiro de Geografia e Estatística – IBGE; 2011b.

Brasil. Decreto 7.747, de 5 de Junho de 2012. Institui a Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas – PNGATI, e dá outras providências [Decree n. 7.747, 5 June 2012]Brasília: Diário Oficial da União; 20129 [109].

Brito B, Barreto P. A eficácia da aplicação da lei de crimes ambientais pelo Ibama para proteção de florestas no Pará. Rev Direito Ambiental 2006;1(43):35–65.

Bronz D. Empreendimentos e Empreendedores: formas de gestão, classificações e conflitos a partir do licenciamento ambiental, Brasil, século XXI (PhD Thesis) Universidade Federal do Rio de Janeiro; 2011.

Burdge RJ, Vanclay F. Social impact assessment: a contribution to the state of the art series. Impact Assess 1996;14(1):59–86.

Cardoso de Oliveira R. O mal-estar da ética na antropologia prática. In: Víctora C, Oliven RG, Maciel ME, Oro AP, editors. Antropologia e Ética: O debate atual no Brasil. Niterói: EdUFF; 2004. p. 21–32.

Cariño J, Colchester M. From dams to development justice: progress with 'Free, Prior and Informed Consent' since the World Commission on Dams. Water Altern 2010;3(2):423.

Carneiro da Cunha M, Almeida M. Indigenous people, traditional people, and conservation in the Amazon. Daedalus 2000;129(2):315–38.

Cobo JM. Study of the problem of discrimination against Indigenous populations. International Covenant on Civil and Political Rights. Geneva: United Nations; 1986.

Cochran PA, Marshall CA, Garcia-Downing C, Kendall E, Cook D, McCubbin L, et al. Indigenous ways of knowing: implications for participatory research and community. Am J Public Health 2008;98(1):22–7.

Colchester M. Self-determination or environmental determinism for Indigenous peoples in tropical forest conservation. Conserv Biol 2000;14(5):1365–7.

Corntassel J. Who is Indigenous? 'Peoplehood' and ethnonationalist approaches to rearticulating Indigenous identity. Nationalism Ethn Polit 2003;9(1):75–100.

CPI-SP. *Até que ponto a nossa opinião vai valer?* [Homepage of Comissão Pró-Índio de São Paulo], [Online]. Available http://cpisp3.wix.com/proindio-saopaulo#!galiza/c9sv, 2013. [2013, 09 September].

Daou AML. Notas comprometidas sobre a discussão dos efeitos sociais de grandes projetos hidrelétricos, antropologia e a atualidade da temática. Rev Antropol 2010;2(2):282–98.

Davis SH, Wali A. Indigenous land tenure and tropical forest management in Latin America. Ambio 1994;23(8):485–90.

de Paula LR. Antropologia, desenvolvimento e estudos de impacto ambiental — a responsabilidade social do antropólogo revisitada. Rev Antropol 2010;2(2):252–81.

Doyle C, Cariño J. *Making free, prior and informed consent a reality, Indigenous peoples and the extractive sector* [Homepage of Piplinks], [Online]. Available http://www.piplinks.org/system/files/Consortium+FPIC+report+-+May+2103+-+web+version.pdf, 2013. [2013, 03 September].

Ellen R. 'Déjà vu, all over again', again: reinvention and progress in applying local knowledge to development. In: Sillitoe P, Bicker A, Pottier J, editors. Participating in development: approaches to Indigenous knowledge. London: Routledge; 2002. p. 235–58.

Emery AR. Guidelines: integrating Indigenous knowledge in project planning and implementation. Washington: World Bank; 2000.

Fearnside P. Brazil's Samuel Dam: lessons for hydroelectric development policy and the environment in Amazonia. Environ Manage 2005;35(1):1–19.

Fearnside P. Dams in the Amazon: Belo Monte and Brazil's hydroelectric development of the Xingu River Basin. Environ Manage 2006;38(1):16–27.

Feiring B. Understanding the Indigenous and Tribal people Convention, 1989 (No. 169): Handbook for ILO tripartite constituents. Geneva: International Labour Organization; 2013.

Fernandes RC. Produto e processo: desafios para o antropólogoa na elaboração de laudos de impacto ambiental. In: Leite IB, editor. Laudos Periciais Antropológicos em Debate. Florianópolis: Nova Letra; 2005. p. 191–206.

Figueiredo C, Pedroso O. Licenciamento ambiental e comunidades Indígenas. 1st ed. Brazil: Programa de Comunicação Indígena UHE Belo Monte; 2011.

FPW. *Mining Council's "new" commitment to FPIC falls short* [Homepage of First Peoples Worldwide], [Online]. Available http://firstpeoples.org/wp/mining-councils-new-commitment-to-fpic-falls-short/, 2013. [2013, August 6].

Franks DM, Vanclay F. Social impact management plans: innovation in corporate and public policy. Environ Impact Assess Rev 2013;43:40–8.

FUNAI. Termo de referência. Estudos socioambientais do componente Indígena no âmbito do EIA–RIMA do projeto AHE Belo Monte. Brasília: Fundação Nacional do Índio; 2008.

Gamble DJ. The Berger Inquiry: an impact assessment process. Science 1978;199(4332):946–52.

Gilberthorpe E. Community development in Ok Tedi, Papua New Guinea: the role of anthropology in the extractive industries. Commun Dev J 2013;48(3):466–83.

Glasson J, Salvador NNB. EIA in Brazil: a procedures–practice gap. A comparative study with reference to the European Union, and especially the UK. Environ Impact Assess Rev 2000;2(20):191–225.

Goldemberg J, Lucon O. Energia e meio ambiente no Brasil. Estud Avançados 2007;59(21):7–20.

Gordon C. Economia Selvagem: Ritual e Mercadoria entre os Índios Xikrin-Mebêngôkre. São Paulo: UNESP/ISA/NuTI; 2006.

Guzmán D. Índios misturados, caboclos e curibocas: análise histórica de um processo de mestiçagem, Rio Negro (Brasil), séculos XVIII e XIX. In: Adams C, Murrieta R, Neves W, editors. Sociedades Caboclas Amazônicas: Modernidade e invisibilidade. São Paulo: Annablume; 2006. p. 67–78.

Hanna P, Vanclay F. Human rights, Indigenous peoples and the concept of free, prior and informed consent. Impact Assess Proj Apprais 2013;31(2):146–57.

Henriksen G. Consultancy and advocacy as radical anthropology. In: Morris B, Bastin R, editors. Expert knowledge: first world peoples, consultancy and anthropology. New York: Berghahn Books; 2004. p. 67–79.

Herbert B. *Fortescue accused of rigging land rights deal* [Homepage of ABC], [Online]. Available http://www.abc.net.au/news/2012-11-20/fmg-accused-of-rigging-meeting/4382826, 2012. [2013, July 25].

Hill C, Lillywhite S, Simon M. Guide to free prior and informed consent. Australia, Carlton: Oxfam; 2010.

Huntington HP. Using traditional ecological knowledge in science: methods and applications. Ecol Appl 2000;10(5):1270–4.

IBAMA. Termo de referência para elaboração de EIA/RIMA de aproveitamento hidreletrico. Brasília: Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis; 2005.

IBAMA. Análise do 3° relatório consolidado de andamento do projeto básico ambiental e das condicionantes da licença de instalação 795/2011, da usina hidrelétrica Belo Monte, processo 02001.001848/2006-75; 2013 [Brasília].

ICMM. Indigenous peoples and mining: good practice guide. London: International Council on Mining and Metals; 2010.

ICMM. *Indigenous peoples and mining — position statement May 2013* [Homepage of International Council on Mining and Metals], [Online]. Available http://www.icmm.com/document/5433, 2013. [2013, 12 November].

IFC. Performance standard 7 — Indigenous peoples. International Finance Corporation's performance standards on social and environmental sustainability. Washington: International Finance Corporation; 2012.

ILO. Indigenous and Tribal peoples Convention: C169. Geneva: International Labour Organization; 1989.

ILO. Report of the committee of experts on the application of conventions and recommendations (report III — Part 1A). Geneva: International Labour Organization; 2012.

Inglez de Souza C, Giannini I. Estudo etnoecológico na Terra Indígena Xikrin do Cateté. Brasília: Relatório Final; 2005.

Ingold T. The perception of the environment: essays in livelihood, dwelling and skill. London: Routledge; 2000.

ISA. *A Convenção 169 da OIT no Brasil* [Homepage of Instituto Socioambiental], [Online]. Available http://www.socioambiental.org/inst/esp/consulta_previa/?q=convencao-169-da-oit-no-brasil, 2013. [2013, 28 August].

ISA. *Indigenous peoples* [Homepage of Instituto Socioambiental], [Online]. Available http://pib.socioambiental.org/en/c/no-brasil-atual/quem-sao/povos-indigenas, 2013. [2013, August 21].

ISA. *Índios isolados* [Homepage of Instituto Socioambiental], [Online]. Available http://pib.socioambiental.org/pt/c/no-brasil-atual/quem-sao/Indios-isolados, 2013. [2013, 02 September].

ISA. Porque a Justiça não consegue decidir sobre Belo Monte, [Homepage of Instituto Socioambiental], [Online]. Available https://www.socioambiental.org/pt-br/blog/blog-do-xingu/porque-a-justica-nao-consegue-decidir-sobre-o-caso-de-belo-monte, 2013. [2013, 20 January].

IWGIA. The Indigenous World 2013. Copenhagen: The International Work Group for Indigenous Affairs; 2013.

Jampolsky JA. Activism is the new black! Demonstrating the benefits of international celebrity activism through James Cameron's campaign against the Belo Monte Dam. Colo J Int Environ Law Policy 2012;23:227–56.

Jijelava D, Vanclay F. Assessing the social licence to operate of development cooperation organizations: the case of Mercy Corps in Samtskhe-Javakheti, Georgia. Soc Epistemol 2014. [in press].

João E, Vanclay F, den Broeder L. Emphasising enhancement in all forms of impact assessment. Impact Assess Proj Apprais 2011;29(3):170–80.

Lane MB, Corbett T. The tyranny of localism: Indigenous participation in community-based environmental management. J Environ Policy Plan 2005;7(2):141–59.

Little PE. Territórios sociais e povos tradicionais no Brasil: por uma antropologia da territorialidade. Annu Antropol 2003;2003:251–90.

Magalhães S, Hernandez F. Painel de especialistas: análise crítica do estudo de impacto ambiental do aproveitamento hidrelétrico de Belo Monte, Belém; 2009.

Mauro F, Hardison PD. Traditional knowledge of Indigenous and local communities: international debate and policy initiatives. Ecol Appl 2000;10(5):1263–9.

Medeiros E, Braga J. *Governo negocia libertação de biólogos sequestrados por índios no Pará* [Homepage of Correio Braziliense], [Online]. Available http://www.correiobraziliense.com.br/app/noticia/brasil/2013/06/23/interna_brasil,372901/governo-negocia-libertacao-de-biologos-sequestrados-por-indios-no-para.shtml, 2013. [2013, September 10].

Miranda L. The hybrid state–corporate enterprise and violations of Indigenous land rights: theorizing corporate responsibility and accountability under international law. Lewis Clark Law Rev 2007;11:135–83.

Morgan RK. Environmental impact assessment: the state of the art. Impact Assess Proj Apprais 2012;1(30):5–14.

Morrison-Saunders A, Arts J. Assessing impact: handbook of EIA and SEA follow-up. London: Earthscan; 2004.

Morrison-Saunders A, Early G. What is necessary to ensure natural justice in environmental impact assessment decision-making? Impact Assess Proj Apprais 2008;26(1):29–42.

O'Faircheallaigh C. Making social impact assessment count: a negotiation-based approach for Indigenous peoples. Soc Nat Resour 1999;1(12):63–80.

O'Faircheallaigh C. Environmental agreements, EIA follow-up and Aboriginal participation in environmental management: the Canadian experience. Environ Impact Assess Rev 2007;27(4):319–42.

O'Faircheallaigh C. Aboriginal-mining company contractual agreements in Australia and Canada: implications for political autonomy and community development. Can J Dev Stud 2010;30(1–2):69–86.

O'Faircheallaigh C. Extractive industries and Indigenous peoples: a changing dynamic? J Rural Stud 2013;30:20–30.

O'Faircheallaigh C, Corbett T. Indigenous participation in environmental management of mining projects: the role of negotiated agreements. Environ Polit 2005;14(5):629–47.

OHCHR. *Declaración pública del Relator Especial sobre los derechos humanos y libertades fundamentales de los Indígenas, James Anaya, sobre la "Ley del derecho a la consulta previa a los pueblos indígenas u originarios reconocido en el Convenio No. 169 de la Organización Internacional de Trabajo" aprobada por el Congreso de la República del Perú* [Homepage of Office of the High Commissioner for Human Rights], [Online]. Available http://www.ohchr.org/SP/NewsEvents/Pages/DisplayNews.aspx?NewsID=10194&LangID=S, 2010. [2013, September 09].

Oliveira JPd. Uma etnologia dos 'índios misturados'? Situação colonial, territorialização e fluxos culturais. Mana 1998;4(1):47–77.

Oliveira JEd. Sobre a necessidade do trabalho antropológico para o licenciamento ambiental: avaliação dos impactos socioambientais gerados a partir da pavimentação asfáltica da Rodovia MS-384 sobre a comunidade Kaiowa de Ñande Ru Marangatu. Rev Electron Hist Reflect 2010;7(4). [Online, Available http://www.periodicos.ufgd.edu.br/index.php/historiaemreflexao/article/view/754/470].

Posey D. Indigenous management of tropical forest ecosystems: the case of the Kayapó indians of the Brazilian Amazon. Agrofor Syst 1985;3(2):139–58.

Posey D. Diachronic ecotones and anthropogenic landscapes in Amazonia: contesting the consciousness of conservation. Adv Hist Ecol 1998:104–18.

Posey D. Upsetting the sacred balance: can the study of Indigenous knowledge reflect cosmic connectedness? In: Sillitoe P, Bicker A, Pottier J, editors. Participating in development: approaches to indigenous knowledge. London: Routledge; 2002. p. 24–42.

Prenzel P, Vanclay F. How social impact assessment can contribute to conflict management. Environ Impact Assess Rev 2014;45:30–7.

Prno J, Slocombe SD. Exploring the origins of 'social licence to operate' in the mining sector: perspectives from governance and sustainability theories. Resour Policy 2012;37:346–57.

Rocha L. *Belo Monte derruba presidente do Ibama* [Homepage of Revista Época], [Online]. Available http://colunas.revistaepoca.globo.com/politico/2011/01/12/belo-monte-derruba-presidente-do-ibama/, 2011. [2013, September 09].

Sallenave J. Giving traditional ecological knowledge its rightful place in environmental impact assessment. North Perspect 1994;22(1):16–8.

Sanson C. *Povos indígenas: Um estorvo ao modelo da esquerda* [Homepage of Radioagência NP], [Online]. Available http://www.radioagencianp.com.br/11577-povos-indigenas-um-estorvo-ao-modelo-da-esquerda, 2013. [2013, September 2].

Santilli M. *Impactos subavaliados em grandes obras* [Homepage of O Globo], [Online]. Available http://oglobo.globo.com/amanha/impactos-subavaliados-em-grandes-obras-7780720, 2013. [2013, August 21].

Secretariat of the Convention on Biological Diversity. *Akwé: Kon voluntary guidelines for the conduct of cultural, environmental and social impact assessment regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by Indigenous and local communities* [Homepage of Secretariat of the Convention on Biological Diversity], [Online]. Available https://www.cbd.int/doc/publications/akwe-brochure-en.pdf, 2004. [2013, August 28].

Sevá Filho A, Pinheiro MF. Conflitos sociais e institucionais na concretização recente de algumas concessões de aproveitamentos hidrelétricos assinadas entre 1997 e 2000. XI Congresso Brasileiro de Energia. Rio de Janeiro: UFRJ; 2006.

Sider G. Lumbee Indian cultural nationalism and ethnogenesis. Dialect Anthropol 1976;1(2):161–72.
Slootweg R, Vanclay F, van Schooten M. Function evaluation as a framework for the integration of social and environmental impact assessment. Impact Assess Proj Apprais 2001;19(1):19–28.
Stavenhagen R. Etnodesenvolvimento: uma dimensão ignorada no pensamento desenvolvimentista. Annu Antropol 1985;84:13–56.
Stevenson MG. Indigenous knowledge in environmental assessment. Arctic 1996;49(3):278–91.
Tsuji LJ, Ho E. Traditional environmental knowledge and western science: in search of common ground. Can J Nativ Stud 2002;22(2):327–60.
UN General Assembly. United Nations Declaration on the rights of Indigenous peoples. New York: UN General Assembly; 2007 [A/RES/61/295].
United Nations. The concept of Indigenous peoples. New York: United Nations Permanent Forum on Indigenous Issues Secretariat; 2004 [PFII/2004/WS.1/3].
United Nations. Guiding principles on business and human rights: implementing the United Nations "protect, respect and remedy" framework. New York: United Nations; 2011 [HR/PUB/11/04].
UN-REDD. Guidelines on free, prior and informed consent. Geneva: UN-REDD Programme Secretariat; 2013.
Usher PJ. Traditional ecological knowledge in environmental assessment and management. Arctic 2000;53(2):183–93.
Utsunomiya R, Montaño M. Análise do enfoque no meio antrópico em estudos de impacto ambiental para verificação de viabilidade ambiental de projetos de desenvolvimento. VI Congresso de Meio Ambiente da Associação de Universidades Grupo de Montevidéu. São Carlos: UFSCar; 2009.
Vanclay F. Conceptualising social impacts. Environ Impact Assess Rev 2002;22(3):183–211.
Vanclay F. International principles for social impact assessment. Impact Assess Proj Apprais 2003;21(1):5–11.
Vanclay F. Developments in Social impact assessment: an introduction to a collection of seminal research papers. In: Vanclay F, editor. Developments in social impact assessment. Cheltenham: Edward Elgar; 2014. p. 15–39.
Vanclay F, Esteves AM. Current issues and trends in social impact assessment. In: Vanclay F, Esteves AM, editors. New directions in social impact assessment: conceptual and methodological advances. Cheltenham: Edward Elgar; 2011. p. 3–19.
Vanclay F, Baines J, Taylor CN. Principles of ethical social research: ethical professional practice Part I. Impact Assess Proj Apprais 2013;31(4):243–53.
Verdum R. As obras de infraestrutura do PAC e os povos indígenas na Amazônia brasileira. Observatório de Investimentos na Amazônica, 9. Nota Técnica; 2012.
Vieira W. *Quanto vale um índio?* [Homepage of Carta Capital], [Online]. Available http://www.cartanaescola.com.br/single/show/49, 2013. [2013, September 12].
Viveiros de Castro E. *No Brasil, todo mundo é índio, exceto quem não é* [Homepage of Instituto Socioambiental], [Online]. Available http://pib.socioambiental.org/files/file/PIB_institucional/No_Brasil_todo_mundo_%C3%A9_%C3%ADndio.pdf, 2006. [2013, August 26].
Voss M, Greenspan E. *Community consent index: oil, gas and mining company public positions on Free, Prior, and Informed Consent (FPIC)* [Homepage of Oxfam America], [Online]. Available www.oxfamamerica.org/publications/community-consent-index, 2012. [2013, September 09].
Watts J. *Amazon tribe threatens to declare war amid row over Brazilian dam project* [Homepage of The Guardian], [Online]. Available http://www.theguardian.com/environment/2013/apr/03/brazil-dam-activists-war-military, 2013. [2013, 13 August].
Weisman BR. Nativism, resistance, and ethnogenesis of the Florida Seminole Indian identity. Hist Archaeol 2007;41(4):198–212.
Wessels J. Factors that influence the independence of EIA follow-up verifiers: a developing country perspective. Impact Assess Proj Apprais 2013;3(31):169–79.
Whitten Jr NE. Ecuadorian ethnocide and Indigenous ethnogenesis: Amazonian resurgence amidst Andean colonialism. International Work Group for Indigenous Affairs Document 1976(23).
Wiles A, McEwen J, Sadar MH. Use of traditional ecological knowledge in environmental assessment of uranium mining in the Athabasca Saskatchewan. Impact Assess Proj Apprais 1999;17(2):107–14.
Wood C. Environmental impact assessment: a comparative review. 2nd ed. Essex: Pearson Education; 2003.
World Bank. Operational Policy 4.10 on Indigenous peoples. Washington: World Bank; 2005.
World Bank. Environmental licensing for hydroelectric projects in Brazil: a contribution to the debate. Summary report, vol. 1. Washington: World Bank Latin America and the Caribbean Regional Office Brazil country, Management unit; 2008.
Ypade. *Povos e comunidades* [Homepage of Portal Ypade], [Online]. Available http://www.caa.org.br/ypade/index.php?pg=11, 2013. [2013, August 19].

Philippe Hanna is currently a PhD student at the University of Groningen, The Netherlands. A Brazilian national, he has a Master's degree in social anthropology from the Federal University of Santa Catarina and has been working in the area of public policies and Indigenous peoples in Brazil.

Frank Vanclay is Professor of Cultural Geography in the Department of Cultural Geography, Faculty of Spatial Sciences, the University of Groningen. He is a specialist in the field of Social Impact Assessment.

Esther Jean Langdon is full professor in the Anthropology Department at the Federal University of Santa Catarina and has extensive research experience with South American Indigenous peoples. Her interests include public policy and Indigenous health.

Jos Arts is a special professor in the Department of Planning, Faculty of Spatial Sciences, at the University of Groningen, The Netherlands. He is a specialist in environmental impact assessment and environmental licensing procedures.