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Mining and the value of place in New Caledonia: negotiation, evaluation, recognition

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Abstract (200 words)

Mining is a land-based activity and mining companies have to negotiate with local landowners their license to operate. Even when they succeed in negotiating impact and benefit agreements with local communities, and start their operations, companies can face various claims and contests arising at various moments of the project cycle and that they are often unable to anticipate or analyse. The program presented in this contribution – NERVAL: 'negotiate, evaluate, and recognise the value of place' funded by the agency CNRT 'Nickel and its environment' – was conceived on these premises by an interdisciplinary team of anthropologists, geographers, and economists. It developed, following a participatory and inter-sectoral logic, a research-based approach to provide stakeholders (mining companies, local governments, customary authorities) with an analytical grid helping them to decipher the land-related contexts and issues and to identify stakes and actors. Based on case studies carried out in mining localities of New Caledonia and a non-mining site, an analytical grid was developed around the four categories of territory, event, risk, and social actor. The paper presents and discusses this toolkit both in conceptual terms and as regards its operational potential.

Keywords. Value of place, event, recognition, basic/applied research, land-mine nexus

Mining and the value of place in New Caledonia: Negotiation, Evaluation, Recognition

"A cynic is one who knows the price of everything and the value of nothing", Oscar Wilde

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1. Introduction

Mining is a land-based activity and mining companies have to negotiate their "social licence to operate" with local landowners and other stakeholders beyond legal requirements (Owen and Kemp, 2017). Where land need for mining is held in customary tenure, this inevitably requires that companies develop a detailed understanding of how community members relate to land. Standard corporate social responsibility (CSR) toolkits are generally insufficient in this regard, and corporations often find themselves at a loss when facing the complexity of land realities.

In Papua New Guinea, mining companies have followed State guidance to identify landowners and to negotiate with their political representatives at the local level. The weak governmental capacity to modernise colonial-era legislation means that the side-effects of coping with the highly variable customs of more than 800 language groups are often profound. At the same time, customary owners themselves have developed what Filer has called an ideology of landownership. On the one hand, they use the 'appeal and resonance derived from indigenous custom' to battle against giant corporations but, on the other hand, they have a 'thoroughly modern desire for … money, goods and services' and 'seek deliverance from the … web of social obligations' which made them landowners in the first place (Filer, 1997: 157-158). Other writers have described the ways custom has been distorted through 'entification' (Ernst, 1999) as local people try to render their complex customary arrangements legible to institutions of governance (see also Jorgensen, 1997; Filer, 2007; Golub, 2007; Wesch, 2008; Stead, 2017; Dwyer & Minnegal, 2018).

Such processes can create the precondition for conflict between mining companies and the collectivities of local people who possess the rights over land needed for mining, whatever the efforts deployed by companies to identify and compensate them for actual and potential damages. Mining companies are simply not well equipped to decipher and manage conflicts over land, let alone to anticipate them.

That is the situation acknowledged by mining companies in New Caledonia (NC) in 2008, when the industry-government CNRT (National Centre for Technological Research/*Centre National de Recherche Technologique*)[1] 'Nickel and its environment' was created. The objective was to advance pure and applied research on nickel mining in New Caledonia. Specifically in relation to conflicts over land, company representatives explained how difficult it was for them to manage disputes that they thought would be put to rest when they signed agreements with landowner representatives. It surprised them that they continued to experience unrest in the communities around their operations. However, beneath the demand for better analysis, we could detect a deeper request. Was it possible to imagine a means of measuring the value of places affected by mining activities and calculating monetary compensation?

As a response, an interdisciplinary team bringing together anthropologists, geographers, and economists developed a research program in 2012 called NERVAL (Negotiate, evaluate, and recognise the value of place) funded by CNRT 'Nickel and its environment.' It aimed to provide stakeholders, which included mining companies, local governments, customary authorities, consultancy agencies, civil society organisations, with a toolkit to decipher the land-related contexts and issues and to pinpoint origins of grievances and the actors involved in them. We deliberately chose not to answer the deeper question about compensation, but this did not prevent us from tackling the issue empirically and theoretically (Le Meur and Levacher, 2019).

The first part of this paper discusses how we developed the toolkit to identify, anticipate, analyse and manage mine-related land tensions and conflicts. The second part presents the rationale of NERVAL, with a focus on the core concept of the value of places. The third part is dedicated to the analytical grid 'TERA' that is the acronym of its four descriptive and analytical components: territory, event, risk and actor. The fourth part presents the translation of research results into a practical tool in the form of a guidebook intended for mining operators and local governments, and the customary authorities, civil society organisations and consultancy agencies involved in land-related negotiations. More broadly, this guidebook has been designed as an instrument for consultation and dialogue between all the stakeholders in the mining arena, meaning it must be made available to all of them. It is not intended as a technical manual but rather a means of encouraging a more inclusive view of how the take-up and subsequent management of land needed for mining should be approached – by all parties. The guidebook also has the potential to be adapted to other forms of development, for example, tourism, coastal management, etc.).

2. Mining and the value of place. The NERVAL project.

2.1 Combining fundamental and applied research

[1] A CNRT (National Centre for Technological Research/*Centre National de Recherche Technologique*) is a French 'Group of Public Interest' (GIP – *Groupe d'Intérêt Public*) aiming to strengthen or create public-private partnerships in the field of technological research and development. The CNRT 'Nickel and its environment' was founded with joint funding from the mining companies themselves and the French and New Caledonian governments. See https://cnrt.nc/le-cnrt/ for more details of CNRT 'Nickel and its environment'.

The NERVAL project came into being in 2012 following discussions with mining companies and local governments within the forum provided by CNRT 'Nickel and its environment' (Le Meur, 2015). As mentioned above, this enabled coming to an understanding of what was feasible – developing an analytical tool for a better understanding of the land-mine nexus – and what was not – imagining a linear scale for monetary compensation.

Nickel mining is inseparable from the colonial history of New Caledonia (e.g. Freyss, 1995; Le Meur & Mennesson 2011). The sector has long been structured around the hegemony of Société le Nickel (SLN)[2], and a constellation of small- and medium- scale mining companies known locally as "*petits mineurs*". Subject to many rounds of reorganisation since the 1930s, mining and nickel processing is now centred on three main large-scale projects and companies, operating more or less independently of one another. These are: (i) the North Province majority-owned operation in the North at Koniambo (KNS), which is the economic spearhead of the Kanak[3] pro-independence politics; (ii) a new Brazilian-owned refinery in the South Province at Goro;[4] and (iii) the multi-site operations of the historical company SLN distributed across both provinces, which feed SLN's refinery on the outskirts of Nouméa using coastal ore carriers. The nickel concessions the three projects have access to may be divided into high, medium and low-grade deposits, such that over time each enclave has adopted a different balance of technical processes and a different export strategy.

Prior to 1988, mining in New Caledonia was regulated from Paris. The Matignon-Oudinot agreements, signed in that year by the French state and representatives of pro and anti-independence parties, brought an end to years of violent clashes locally known as *les événements*. The agreements also created three provinces – the North, the South, and the Loyalty Islands – to which jurisdiction over the environment and development were devolved. In principle, the provinces have the power to set mining policies, but current practice is for mining permits and lease applications to be handled by the Department of Mines and Energy (DIMENC) in Nouméa under territorial legislation (the "*code minier*") passed in 2009.

Recent problems have highlighted the political complexity of the industry. A new policy (the "*doctrine nickel*"), that exports of unprocessed nickel should be phased out, was no sooner adopted by the pro-independence FLNKS[5] in 2015, than it came into conflict with the strategy of selling low-grade ore overseas favoured by the smaller producers and, indeed, one of the constituent parties of the FLNKS itself, the Union Calédonienne. The result was a prolonged strike of *rouleurs*, truckers of unprocessed ore from mines to coastal wharfs (Demmer, 2017).

Another observation is that despite a push in the last two decades to diversify the New Caledonian economy, it remains stubbornly dependent on what has been termed a "double rent" (Freyss, 1995): financial transfers from the French state and income from mining (Bouard et al., 2016).

Since the NERVAL project was called for by non-academics, a principal output was a guidebook presenting the approach and application to practical situations (Herrenschmidt et

[2] SLN (*Société le Nickel*) is a nickel mining company created in 1880 in NC by two entrepreneurs (Higginson and Hanckar) and one engineer (Garnier, the discoverer of the Caledonian nickel) and controlled by the Rothschild bank from 1888 to 1974. It came to dominate the mining landscape and economy in New Caledonia, especially from the 1930s until the 2000s when two large-scale projects (Koniambo in the North and Goro in the South) emerged. In 1985, SLN became a subsidiary of the French mining company ERAMET. Since 2007 a Caledonian public holding (STCPI*, Société territoriale de participation industrielle*) holds 34% of SLN.

[3] The Kanak people, the indigenous population of New Caledonia, currently number over 100,000 or approximately 39% of the total population (ISEE, 2014).

[4] The Brazilian Vale is about to sell the refinery the Australian company New Century Resources (*Les Nouvelles Calédoniennes*, May 26, 2020)

[5] Front de Libération Nationale Kanak et Socialiste, an alliance of pro-independence parties in New Caledonia.

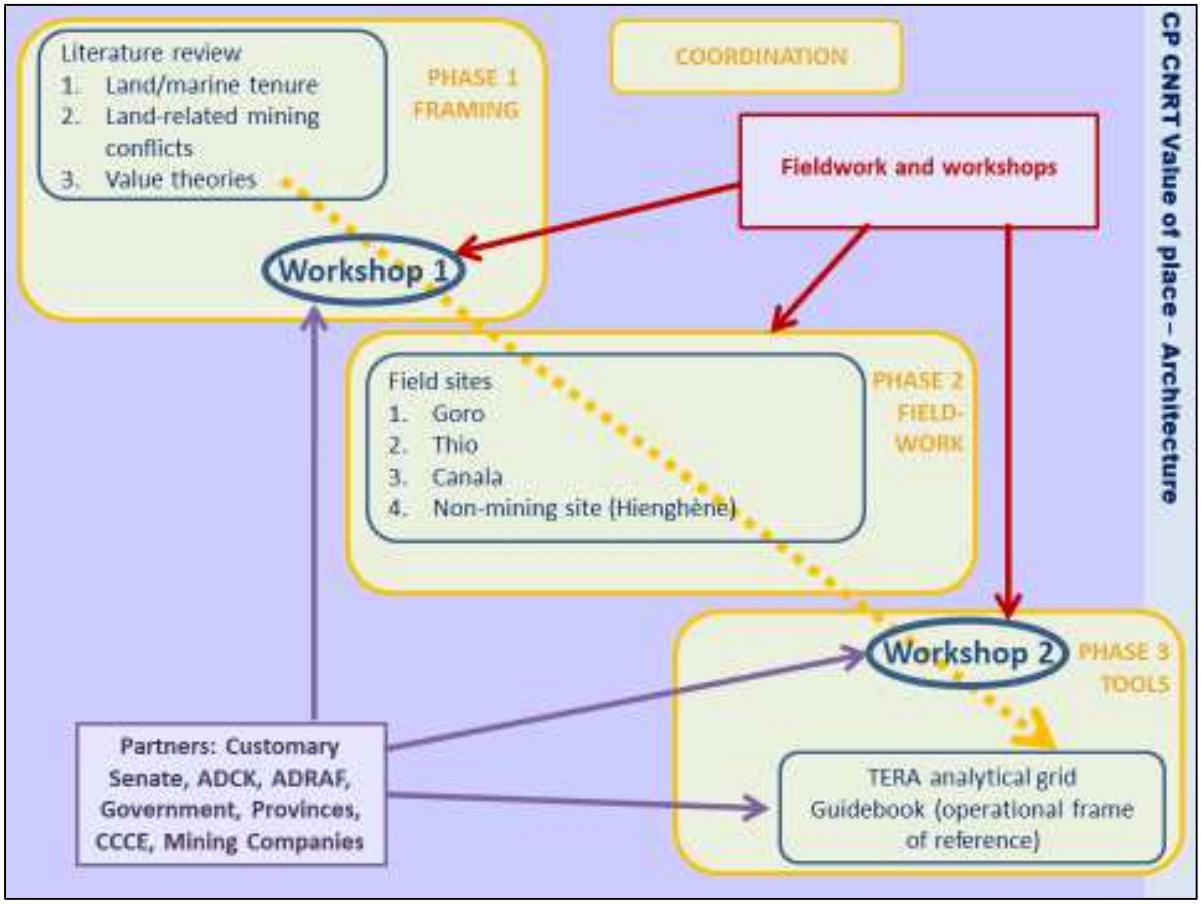
al., 2017). But as Olivier de Sardan reminds us (Olivier de Sardan, 2005), doing applied research implies a sort of "double terms of reference" as there is no "good" applied research without "good" fundamental research. In our case, the first task was to translate the questions raised by government officials and mining company staff into concepts amenable to standard research techniques and to generate questions of theory and method that we could apply in the field.

For doing this, the choice of an interdisciplinary approach was obvious, and a field team of anthropologists, geographers, and economists was assembled. Our approach in the field centred around case studies (Burawoy, 2009) of one non-mining (Hienghène) and three mining localities (Yaté, Thio, Canala). We used the methods and participatory tools of social science: individual interviews, focus groups, participant and non-participant observations, mental maps and cognitive graphs. The project was structured around two activities: fieldwork and case studies analysis (Fig.1) and workshops held in 2013, 2014, and 2015 to discuss and present the results.

As our objective was to build shared research analysis and operational tools, people from outside the NERVAL research team were able to participate in the workshops. This allowed a broadening of the range of the disciplines to include archaeology and law and to bring in actors involved in mining who were not part of CNRT[6] – notably customary authorities, civil society organisations and NGOs.

[6] The CNRT 'Nickel and its environment' brought together large- and medium-scale mining companies, representatives of the French state, the Provincial governments, and research institutions based in New Caledonia. Civil society associations, NGOs, indigenous organisations and customary authorities were not directly involved, though the CNRT agreement stated that customary authorities could be invited to meetings as observers (Personal communication of the former CNRT director who added that everyone seemed to have forgotten that clause, including himself.)

Figure 1 – The NERVAL project design



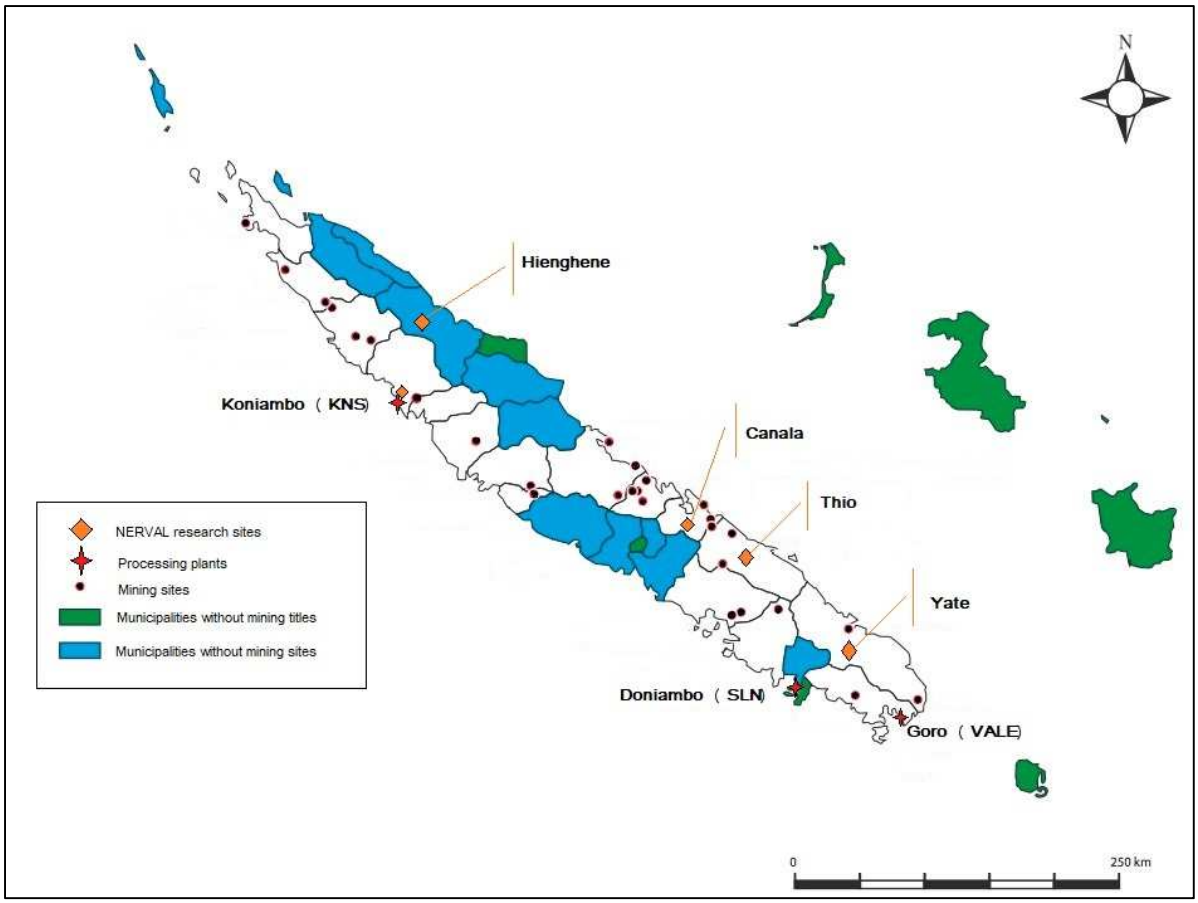
An issue of critical importance to all stakeholders was how to put a value on things affected by mining. What is the value of land, place or territory? What are the criteria mobilised by people to attribute a specific value to a specific piece of land? Raising the question that way implied taking the polysemic nature of value seriously.

The anthropologist David Graeber identifies three "streams of thought" in the use of the word:

1. 'values' in the sociological sense: conceptions of what is ultimately good, proper, or desirable in human life;
2. 'value' in the economic sense: the degree to which objects are desired, particularly as measured by how much others are willing to give up to get them;
3. 'value' in the linguistic sense, which goes back to the structural linguistics of Ferdinand de Saussure (1966), and might be most simply glossed as 'meaningful difference' (Graeber, 2001: 1-2).

The tension between "value" and "values" is also highlighted by Miller: "So values are not the plurality of value, but refers to inalienable as opposed to alienable value' (Miller, 2008: 1123). Miller goes on arguing that "what value does, is precisely to create a bridge between value as price and values as inalienable, because this bridge lies at the core of what could be called the everyday cosmologies by which people, and indeed companies and governments live …" (Miller, 2008: ibid.).

Figure 2 – Research sites of the NERVAL project



As we will see, as regards the value of place, this is precisely that intricacy of moral, social and economic dimensions expressed by the value/values tension that makes negotiation as indispensable as it is complex when it comes to the issue of land needed for mining projects.

The rationale – and acronym – of NERVAL illustrates this. The project was about Negotiating (what, with whom and how?), Evaluating (what and how?) and Recognising (who and/or what?) the VALue of places (*lieux*), in the context of current or planned mining operations. The mine is at the centre stage as the physical site of mineral extraction, but also as a place marker embodying the memory of past happenings. The temporal dimension of mining (D'Angelo and Pijpers, 2018) and associated experiences and memories, coupled with the heterogeneity of the territories and places hosting or surrounding mining sites, makes any direct equivalence between what value/values a place has to its pre-mining residents and owners and what price a miner should acquire it for necessarily complex and contentious. This is precisely what a key tool we developed during the project, the TERA analytical grid (§3 below), was designed to tackle.

2.2 The politics of evaluation and equivalence: between negotiation and recognition

Since the 1980s, mining has seen dramatic changes driven by technological transformation and environmental degradation (Ballard and Banks 2003). New extractive and processing technologies, automation, and fly-in-fly-out rostering have led to a reduction in the size of workforces and the progressive end of company towns. At the same time, driven by increasing awareness of environmental damages caused by mining, an expansion into new parts of the world where indigenous people are increasingly vocal and better networked among themselves and with NGOs and experts (Kirsch, 2014: 192-199), mining companies have been forced to take notice that what they may previously have thought of as environmental externalities are in fact central to their conduct as businesses. Ignoring

communities and the environment stands to do them reputational harm which will affect the costs of production.

Local communities, re-branded as "mine-affected communities" by the World Bank, have emerged as important actors of the mining arena, whereas workers, trade unions and labour issues seem to have slid into the background. Beyond the triangle composed by corporations, communities and governments, distant actors and audiences have been playing an increasingly important role in the unfolding of mining conflicts: international NGOs, activist networks, legal experts, anthropologists, and civil society at large. This also includes industry networks like the International Council for Minerals and Environment (ICME) created in 1991 and replaced in 2001 by the International Council for Minerals and Metals (ICMM), which is an attempt at self-regulation by the global mining sector. These trends can be viewed as a shift from the *social relations of production* (labour and capital) to the *social relations of compensation* (community and capital) as the core issue structuring conflict and arrangement within mining arenas (Filer and Le Meur, 2017).

The internalisation of environmental externalities is a form of "green conditionality," the systematisation of environmental and social impact assessment (EIA / SIA). This is seen in the 2003 Equator Principles (Dashwood, 2013: 82), which require such things as higher standards in social and environmental risk assessment, the introduction of grievance mechanisms, and improved transparency in reporting from firms applying for finance from the over one hundred banks – including seven from France – that have signed up to them. The *Mining, Minerals and Sustainable Development* (MMSD) project, which involved consultations in 38 countries, a Sponsors Group of the world's largest mining companies, and multistakeholder consultations at over 25 workshops and conferences (IIED, 2002; Danielson 2003) epitomises this moment.[7] It evokes the elusive notion of a "social license to operate" (SLO) which pertains to the same movement towards "ethical business" and is usually seen as an intrinsic component of so-called "corporate social responsibility." Owen and Kemp (2017: 36 ff.) analyse SLO as a means for the corporate sector to regain control in the context of growing public distrust and the financial costs incurred by firms sued by mine-affected communities and their allies.

SLO has come to be understood as a metaphor expressing the *good relations* between corporation and community, and even to be a measurable management tool (Boutilier et al., 2012; Owen and Kemp, 2017: 29-30). But in point of fact, the first occurrences of the notion reflect *poor relationships and a lack of legitimacy* on the side of the mining sector. The evolution towards giving substance to SLO and making it measurable is key in understanding how mining companies have attempted to delimit what is negotiable when dealing with local stakeholders. "Obtaining" SLO – whatever it means – implies entering a negotiation with people who do not necessarily value things according to the same criteria and based on the same worldviews as corporate actors. This is the domain of difference, alterity, and incommensurability[8] and the associated politics of recognition (Taylor, 1994; Povinelli, 2002).

As mentioned earlier, the objective of NERVAL was not to provide mining companies with an economic or monetary calculus of equivalence that could be translated into a compensation policy. It was to provide an empirically grounded analysis of the diverse meanings and forms

[7] Its approximately 250 publications, in English and Spanish, and in Portuguese and French for some workshop outputs, may be found at https://www.iied.org/mmsd-project-information.

[8] "…if indeterminacy refers to the possibility describing a phenomenon in two or more equally true ways, then incommensurability refers to a state in which two phenomena (or worlds) cannot be compared by a third without producing serious distortion" (Povinelli, 2001: 320).

values of place can take. We follow here Fabiani Li in her exploration of the politics of equivalence in mining contexts in Peru, where she distinguishes two interrelated levels of understanding:

> "The term equivalence is intended to capture two related processes: First, equivalence refers to forms of expertise and technical tools used to make things quantifiable and comparable; second, I take equivalence to be a political relationship that involves constant negotiation over what counts as authoritative knowledge" (Li, 2015; 23-24).

We will come back to this tension, formulated in terms of an opposition between evaluation and negotiation in the NERVAL project.

For corporations, the politics of equivalence strives at extending commensurability to every entity or topic that happens to be, or could be, the subject of controversy with other stakeholders. Commensuration is defined as "the transformation of different qualities into a common metric" (Espeland and Stevens, 1998: 314). In this respect, tools such as social and environmental impact assessment and provisions for compensation appear as means to limit and define the terms of debate and to translate contested stakes into calculated risks, as "practices, techniques and rationalities that seek to make the incalculable calculable, and the different ways to do so" (Dean, 2010: 207). As we will see, one of the TERA grid objectives is to shift the balance from evaluation and linear equivalence toward negotiation and the recognition of difference and incommensurability.

3. TERA: a multi-dimensional analytical grid and a tool for action

The main objective of the NERVAL project was to produce operational tools to help stakeholders better anticipate, analyse and resolve mining-related land tenure conflicts. It involved a detour through basic research. We did case study research in three mining localities (Yaté where the Goro-Nickel project operates, Thio, a SLN stronghold, Canala where there are several medium-scale mining companies) and one non-mining site (Hienghène) (Fig.2 and Box 1) and combined this with stakeholder consultations and a broad review of the literature. We then developed an analytical grid around the four interacting categories of Territory, Event, Risk and (social) Actor – TERA (Levacher et al., 2016). TERA is at once a research tool, useful for collecting and interpreting data, and an operational tool for accompanying the negotiation of mining projects as well as their monitoring and re-negotiation over time. To bridge the gap between research and operational demands, the project team organised workshops with all the stakeholders which led to the production of a guidebook integrating the TERA analytical grid into a framework of consultation and negotiation procedures (§4 below).

The research sites were selected to cover a wide range of mining situations (large-scale projects operated by transnational companies vs small/medium size mining companies, new sites vs historical strongholds, Kanak vs multi-ethnic localities), with a non-mining site, Hienghène, added for comparison. Here, care for the environment and tourism were prominent concerns, but we were able to see that the social dynamics of production and assertion of the values associated to places and spaces were fundamentally similar to what was seen at the mining sites.[9] In the case of both mining and non-mining sites, we saw that

[9] See Büscher and Davidov (2014) for an exploration of the underestimated interconnections and surprisingly similar logics of "the seemingly uncomfortable bedfellows of ecotourism and extraction."

events of various kinds expressed localised geographies of values and configurations of actors.[10]

A quick look at the components of TERA (Territory, Event, Risk, Actor) may be gained from a snapshot of four cases where 'trigger events' illustrated how different configurations of actors attributed different values to places in a way that revealed their various conceptions and perceptions of risk and uncertainty (Box 1).

Box 1: Snapshot of four trigger events.

Yaté – Yaté is the largest commune by area in New Caledonia. A huge bush fire in January 2013 in the Plaine des Lacs region was the trigger event that revealed and/or transformed the values of places in Yaté. Beside the approach taken to fight the fire, which was controversial in itself, different territorialities were revealed: mining concessions, traditional Kanak paths and territories, tabu sites, a potential Ramsar International Convention on Wetlands area and the provincial ban on mining exploitation on a world-class lateritic nickel deposit. The configuration of actors comprised local and supra-local stakeholders and, as seen elsewhere, a shifting set of alliances and oppositions among mining companies, environmental NGOs, the provincial environmental administration, the DIMENC, the commune of Yaté, customary authorities, the fire brigade, and the *Sécurité civile* (civil defence agency). The perception of risk and uncertainty, as well as the hierarchy of the values attributed to places and spaces (based on ecology, water protection, cultural heritage, mining interests, eco-tourism development), varied according to the actors' positions and strategies. Throughout, mining interests were a constant presence pitching different political parties in opposition to or in alliance with one another.

Thio – Cyclone Freda and a strong tropical depression struck Thio in January and June 2013, bringing with them torrential rainfall and causing landslides and floods. Local people swiftly reacted and blocked all the local mining sites, meaning that mining was held responsible for the damages caused by these exceptional climatic events. An inter-ethnic collective called *Chava xua* ("to take care of one's house/community" in Xârâcùù, the language spoken in Thio and Canala region) lodged grievances against SLN, the miner at Thio. *Chava xua* eventually signed a Memorandum of Understanding with Thio municipality, the South Province, the Government of New Caledonia, and SLN that set out the environmental remediation work that should be carried out. Interviews revealed that the accumulation of mine tailings in local rivers was seen as symbolic of the negative impacts of mining, endangering fish species (eels, black mullets) and water holes of specific values for Kanak groups (see also Gosset et al. 2019, Richard et al. in this issue).

Canala – A conflict-ridden mining history and its local political entanglements led to the closure of Boakaine, a former SLN mining concession, in 2002. At the time of the NERVAL project, continuing disagreements about moves to reopen it were still active. The enduring conflict revealed shifting sets of alliances and oppositions between local actors who were each using customary, nationalist and indigenous discourses to justify their claims over the deposit. The competing discourses were also at work in the filing in 2012 of a request by a customary chief to protect a part of the nearby Bogota Peninsula (an old and still active mining area) as cultural heritage with the support of the Nouméa-based Institute of Archaeology of New Caledonia and the Pacific[11] and the cultural division of the North Province. Heritage sites (notably pre-colonial sites of exchange and burial mounds) were at risk of destruction by nickel mining, but the heritage value stood to be translated into economic value through tourism.

Hienghène – There is no nickel deposit in this area, and the key concerns are tourism and care for the environment. As well as this, the local geography of places and values bears witness to the colonial

[10] See the NERVAL research reports by Levacher et al., 2016, Blaise et al., 2015; Nayral, 2016, and the associated publications of Demmer, 2017a; Kowasch, 2017; Levacher 2017; Le Meur 2017, Le Meur and Levacher, 2019; Le Meur and Sabinot, 2019, as well as Horowitz, 2008; Grochain, 2013.

[11] Institut d'archéologie de la Nouvelle-Calédonie et du Pacifique, 65 Rue Teyssandier de Laubarède, Nouméa.

rebellion of 1917 and of the violent clashes between pro and anti-independence groups in the 1980s. The trigger event was the closure in 2013 of the Mount Panié Nature Reserve which was the oldest protected area in New Caledonia, having been in existence since 1950. The local association *Dayu Biik*, which was managing the area on behalf of the North Province, decided to impose a new regime of very restricted access. This revealed a complex mix of actors, including tourists, researchers, local and international environmental organisations, municipal and provincial governments, customary authorities and local populations divided by tribal and clan affiliations, all of whom had different interests in the Mount Panié area. These emphasised alternately its environmental values (key ecosystems, endemic species), heritage values (geosymbols, oral histories, ancient settlements, tabu places), and use values (fishing; hunting, collecting medicinal plants).

3.1 Territory, Event, Risk, Actor: the building blocks of TERA

We will now examine the components of TERA in detail.

Territory: place, space, landscape

Territory intuitively appears as an obvious entry-point to explore the value of places. Broadly defined in "its relation to space" and as a "political technology" (Elden, 2010), territory comprises "material elements such as land, functional elements like the control of space, and symbolic dimensions like social identity" (Paasi, 2003: 110). The latter dimension pinpoints the actors' emic criteria and definitions of places of value – territories are heterogeneous – as well as of the values of places, which vary according to time and people.

Place conveys an idea of attachment, defined as "a framed space that is meaningful to a person or group over time" (Thornton, 2008: 10; quoted in Aucoin 2017: 396). The geography of both places of value and value of places echoes the notion of landscape as a space of life and meaning, a combination of practices, knowledge and memories (Hirsch & O'Hanlon 1995; Stewart & Strathern 2003). As Barbara Adam puts it, "a landscape is a record of constitutive activity. It includes absences. It combines natural and cultural activities into a unified whole. It is relative to the eye of the beholder" (Adam 1998: 54). The value attached to a place thus always incorporates – but in varying proportions – uses, meanings, as well as a history, in landscapes, stories and memories.

Places and spaces are the subject of specific uses: agriculture, hunting, fishing, ritual, habitation, burial, and so on. In consequence, they also carry specific values, to be qualified in their different dimensions (moral, political, economic etc.), before we may consider quantifying them in terms of volumes produced or extracted, products sold or services rendered. Certain places and spaces are not the object of use, in the strict sense of the word, but they are nonetheless carriers of meaning and value. This is due to a specific history of these places, incorporated into a social memory and expressed through stories or myths, including possible past uses[12]. A further observation is that the demarcation of a space and its preparation for future uses, such as clearing land for agriculture, includes the future in the understanding of territory.

Furthermore, spaces of use and places of value do not equally belong to everyone, nor do they concern everybody. Uses are differentiated according to social categories, and not all members of a community attach the same value to a given place. In other words, the spaces of use and places of value depend on specific groups of actors to be identified. Adding to the complexity of the task, they are not all local.

[12] The notion of "existence value" often used in the literature on ecosystem services tries to capture this idea.

Event[13]: hazard, controversy, conflict

We can categorise events according to three main criteria. A first one draws on the *nature of the event*: political or legal (new regulations), social (conflict), climatic (cyclone), or environmental (landslide). The list is not exhaustive, and events of different kinds can intermingle in a complex chain of events. A second one is the *predictability* of the event, triggering responses in terms of anticipation (management) or preparation (precaution). The third option considers its *positioning* within or outside the mining project. These criteria can be combined for the sake of analysis, for instance, in the predictability and internal or external position in the mining project.

The event occurs at a given time, extends over a certain time span, has an effect on a greater or lesser spatial extent, the boundaries of which may be more or less clear. This apparent evidence must be qualified, in the first place by considering the distinction between the event as "fact" and as "recognised fact" (what makes an event as such). Characterising what does not make an event, as Veyne does, allows us to better understand what makes an event: "The non-event is an event that has not yet been greeted as such: the history of terroirs, mentalities, madness or the search for security through the ages. We will therefore call non-event the historicity of which we are not aware as such." (Veyne, 1978: 34) Thus, the transition from the unnoticed to the perceived can be a strategic issue, as shown, for example, by the denial tactics developed by mining companies or governments (for the denial by the French government of the threat of radioactivity drifting west from Chernobyl in 1986, see Hecht, 2009).

This echoes Latour's distinction (1987, 2008) between indisputable facts or "matters of fact" and disputed facts or "matters of concern" which corresponds to the notion of controversy. Or, as Fabiani Li puts it: "What are usually glossed as 'conflicts', I suggest, consist of these ongoing efforts at stabilisation, efforts that are fraught with tensions and which do not always produce the intended effects" (Li, 2015: 21). The dispute between established, disputed or unnoticed facts may involve divergent narratives in terms of the selection of narrative and causal elements of a given situation – mining project, public intervention, natural disaster, etc. (Le Meur & Banaré, 2014). The distinction between the trigger of an event and its perception can be blurred by its slow pace. This is the case of "slow-motion disasters", a notion coined by Barbara Adam (1998; see also Kirsch, 2014: 28-29) in reference, among others, to an oil spill in the Gulf of Mexico whose devastating effects have been reinforced by its low visibility and late treatment.

Risk: calculation, uncertainty, acceptability

The configurations and positioning of particular actors are rooted in the mobilisation of cognitive resources allowing an assessment of the risk incurred in the face of an event. The notion of risk refers to an unevenly distributed ability to estimate the potential effects of an event. For present purposes, we may define risk as what jeopardises or reduces the value (of place, land or whatever item, life included), increases or transforms it. Beyond this, risk, its production and distribution, also lies at the heart of the contemporary production of society (Beck, 1992), as an idiom for ordering reality (Dean, 2010) by making the incalculable either calculable or, conversely, invisible. The incalculable is precisely uncertainty, the idea of a non-probabilisable hazard (Dupuy 2002; 105-106)

[13] In the New Caledonian context, we will of course also think of the very use of the French word *évènement*, used in reference to the violent situation that the country experienced in the years 1984-88. This euphemism for a conflict combining two dimensions of civil war and the struggle for decolonisation corresponds to a strategy of denial mobilised by the colonial regimes and used in particular by the French government during the Algerian war.

Uncertainties, even more than risk, prevent stakeholders from making a decision on stable grounds. The very emergence of an exogenous project, such as the development of a mine, can be experienced by local populations as a driver of different forms of uncertainty. Uncertainty not only affects the concrete effects of the project (environmental impact, social exclusion, etc.), but also the "rules of the game". More precisely, there is a gap between the sudden influx of resources generated by the project and the normative void in which this influx operates. This gap generates anxiety and conflict. This is a situation of institutional uncertainty. The uncertainty is also moral when people do not know whether they can trust company representatives (and government officials) or not. Beyond this, ontological uncertainty denotes the fear of disappearing as a community or social group. Uncertainty in its various guises is also a matter of promise, expectation, fear and hope. Pervasive uncertainty can take the form of "temporal dispossession" as "the inability to plan, predict, or build futures in an incremental way" (Smith, 2011: 17).

The widespread notion of social risk (Kemp et al., 2016), developed since the 1990s in line with the rise of "stakeholder management" is associated with the related but distinct concepts of social acceptability and social license to operate, given that the latter two terms only see risk from a business perspective. The emergence of the issue of the social acceptability of mining projects is linked to the rise of the discourse of corporate social responsibility and associated mechanisms (Dashwood, 2013). Increasing social acceptability and reducing social risk should make it easier to obtain the "social license to operate." Until the mid-1990s, the risk taken into account by companies was either economic (profitability of an investment, forecast on metal prices) or political (instability, risk of a coup d'état, nationalisation measures). Companies did not take environmental impacts seriously, and typically treated them as externalities, leaving environmental risks to be borne by local populations. Media and judicial coverage of environmental disasters caused by mining in the 1990s, such as at Ok Tedi in Papua New Guinea or Marcopper in the Philippines (see Banks & Ballard, 1997; Burton, 1997; Dashwood, 2013; Kirsch, 2014), has led to the internalisation of environmental risk by companies in the form of reputational risk. As seen earlier, this was accomplished under pressure from the World Bank in the 1990s and from 2001-2003 by the endorsement of the findings of the MMSD project by the International Council for Minerals and Metals and the implementation of the Equator Principles.

Risk and uncertainty management requires diversified responses, precisely because of the variety of types of risks and actors involved; risk always depends on social components. From the point of view of project managers or regulatory authorities, one can schematically categorise these answers into technical and political responses. They partake in the negotiated construction of the social acceptability of a project. From the point of view of local populations potentially affected by the project, responses pertain to the domain of resistance or local adaptation. They can be analysed in terms of resilience over the medium or long run. These divergent viewpoints all express "the unbridgeable gap between timescales of concern and impact" (Adam 1998: 153).

Actor: human and non-human, individual and collective

The uses and values of places depend on groups of actors who must be identified. The identification of the actors involved in a mining project can mobilise a series of simple oppositions: interested actors vs concerned, direct vs indirect, local vs extra-local, present vs absent, state vs non-state, collective vs individual, etc. Ethnic lines are part of the picture, as well as forms of identification, attachment and belonging in which actors are embedded and that are often more fluid and intertwined than discourses on identity or ethnicity suggest. The case studies carried out reveal highly diversified forms of community-building based on, and incorporating disparate modes of affiliations: municipal/trans-ethnic belonging, identification

based on position in the history of settlement (first-comer ideology), global exogenous register (indigenous rights discourse), chieftaincy networks, clan membership and so on. In the context of Indigenous Peoples, notions of attachment and belonging almost invariably include non-human actors in the form of land, spirits and ancestors.

Of course, the positions of power in the local arena (political actor, representative of customary authority, associative or trade union leader, etc.) and beyond, are of critical importance and can blur other lines of difference. The identification of the actors involved eventually makes it possible to define the arena of the project (or the event discussed, or the conflict analysed) and to compare this with other arenas, and in particular political arenas. For instance, are there actors absent from the project, conflict or event, while occupying a visible political position?

In the end, it is a question of monitoring and analysing changing sets of alliances, discourses (community, autochthony, nation, CSR, sustainable development, etc.), forms of exclusion and inclusion, the arrival of new actors, and the reconfigurations of identities and affiliations in relation with the arrival, the unfolding or the closure of a mining project. Indeed, the issue of who are the actors involved in the mining arena and what their positions are cannot be answered without taking into account the events that trigger or modify viewpoints and strategies. From this point of view, it is essential to observe the interplay between values and forms of knowledge that are experienced, known and perceived by individuals or groups in everyday situations and the those mobilised, displayed or claimed in negotiation contexts, when contested events occur and crystallise actors' positions and discourses. These discourses and narratives also express claims of territorial and political legitimisation in the processes of negotiation and decision-making.

3.2 Discussing temporality in mining encounters

We broadened our conflict analysis to encompass events and hazards well beyond the boundaries of mining concessions once we saw their critical importance in the interaction between mining projects and local stakeholders (Fig.3). Many such events proved useful as analytical entry points in deciphering complex situations because they made visible the positioning, cleavage lines, discursive repertoires of and among the actors involved. At the same time, they were seen to drive changes that transformed values, norms and groups. In the various types of event we looked at we found that there was no immutable value attributed to places or spaces. Rather, the value of place was unstable, contested, and could be transformed through events. This also invited us to consider multiple dimensions of time and its interactions with space.

Any mining project can be viewed from a complex set of timeframes and will give rise to specific risks and uncertainties, as well as gaps and invisibilities. They are conceptualised in Barbara Adam's timescape perspective:

> [T]ime involves a number of irreducible elements, the combination of which I have called '*timescape*' The 'scape' part of the concept acknowledges that we cannot embrace time without simultaneously encompassing space and matter, that is, without embodiment in a specific and unique context. Thus, a *timescapes* perspective acknowledges this spatiality, materiality and contextuality but foregrounds the temporal side of the interdependency (Adam, 2008: 1).

Adam gives an indicative list of the structural elements composing time: timeframes, temporality, timing, tempo, duration, sequence and temporal modalities (including present,

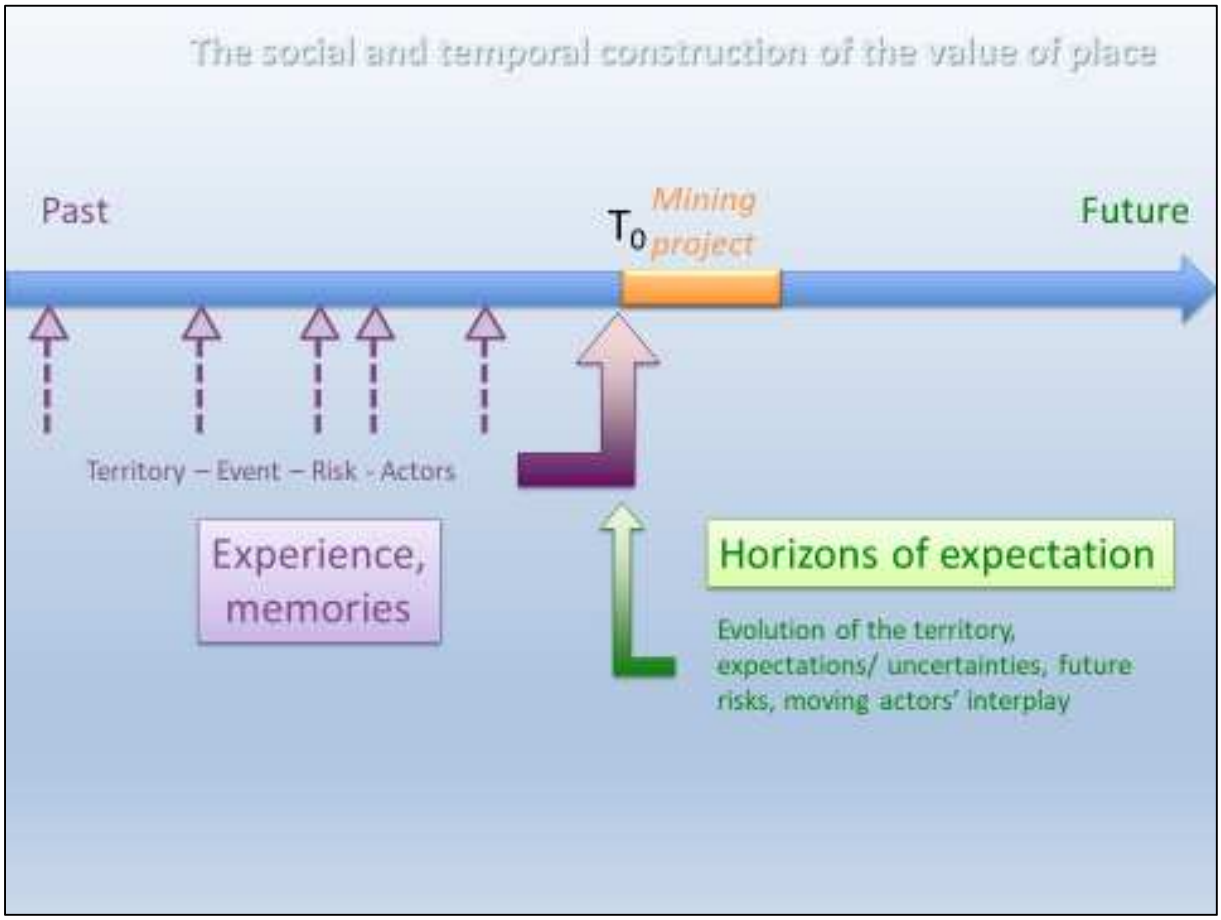
past, and future. “When several of these elements are brought together we begin to see patterns of rhythmicity, periodicity and cyclicality” (id.).

In New Caledonia, timescapes include the long-lasting memory of social actors of places and events, the long term of land fertility, settlement history, generation succession, individual and collective trajectories as well as the short span of events. These temporal strata do not only concern local actors, but also corporations and governments, which are not less affected by cycles, ruptures and discontinuities. Mining companies can be found to be subject to “corporate amnesia” (Filer et al., 2008: 173-175) when selectively forgetting unpleasant episodes or engage in “corporate storytelling” (Rajak, 2014) when portraying their operations in a good light. Timescapes include cycles of mining projects – exploration, exploitation, and post-closure rehabilitation –, public works, and political decisions.

Events that affect mining operations can be mining-related (for instance, the discovery of a new deposit, the transition from exploration to a phase of mineral extraction, the introduction of new technology) or, as the case studies show (Box 1), unrelated to mining (a cyclone, the creation of a new nature reserve). Events can be predictable (the blockade of a mine access road, anticipated environmental impacts) or unpredictable (a bushfire or cyclone-related flooding). At any rate, an event constitutes a disruption, a rupture or turning point, which can occur at an instant in time or as a process drawn out over a period of months of years.

The main conclusion we arrived at during fieldwork for NERVAL is that actors analysed events according to their experiences and memories associated with land and places, their current situations and their horizons of expectation (Fig.3).

Figure 3 – The social and temporal construction of the value of place



4. From TERA to the operational guidebook

The NERVAL project had several outputs: a literature review (Le Meur et al., 2015), a short note on methodology (Blaise et al., 2015), scientific report (Levacher et al., 2016), and finally a guidebook aimed at practical use by stakeholders (Herrenschmidt et al., 2017).

The dimension of time (Fig. 3) underpins the way the guidebook integrates TERA's four components. The objective is to help anticipate what can be anticipated, deal with the unexpected, and monitor social processes triggered or transformed by a mining project. Beyond the case studies on which TERA is based, the guidebook draws on an analysis of the forms of compensation and negotiation seen in New Caledonia, considered the variations in the value of places over the life of a mine, and looked at the way the TERA grid could be put to use during consultations and negotiations with stakeholders.

Using the TERA grid is a way of identifying variations in the value of place according to how stakeholders are positioning at a particular point, and as affected by new events and uncertainties. At any moment, stakeholders mentally adjust the value of affected places according to what they have experienced, what is going on, perhaps the impact of nearby projects, and as their expectations regarding the project and its impacts change.

In the case of the mining of a nickel deposit, the value of the site – to the miner and to other stakeholders – is likely to go up or down in importance, or change in its fundamental nature, during the course of the phases of exploration, exploitation and rehabilitation, depending on how these unfold. If the deposit is subject to an agreement between the operator and local stakeholders, it will embody a consensus about values and compensation at the time the agreement is made. However, the consensus is likely to be temporary and, under the influence of events, the values are likely to change as the project proceeds. This happens because the actors' experiences have transformed their perception of the project and its impacts, and consequently changed how they see the future of the project (or their future in the project). The acquisition of new information, knowledge, and skills may also have increased their ability to negotiate better compensation or a reduction of environmental damages.

The guidebook tries to link the analytical value of TERA with procedures of consultation and dialogue with the external stakeholders of a mining project. Ideally, negotiators will gain an understanding of the range of values and what they are based on before engaging in substantive talks. This is in line with the political context of New Caledonia where recognition of the link between the Kanak people and land underpinned the 1998 Nouméa Accord[14], and where it is no longer conceivable to make any decision affecting land without recognition of this and full consultation with the local population. If consultation is now the norm, exactly what it should comprise is, on the other hand, not fully spelled out.

As regards the articulation of TERA with consultation, the guidebook relies on the combination of two consultation models described by Mermet (2005): the 'Propose-Listen-Requalify' and the 'Consult-Analyse-Choose' models. The first one is a negotiation model according to which the project leader presents his project, organises a consultation to gather all the critics and suggestions, and requalifies the project according to the results of the consultation. The second model organises the co-construction of the project with all the parties involved. Treating all the stakeholders on an equal footing, it is about pooling ideas and seeking compromises. The recognition of the value of places in this type of consultation

[14] "It is important to remember these difficult moments, to recognise the faults, to restore to the Kanak people their confiscated identity, which equates to a recognition of its sovereignty, and as prior to the foundation of a new sovereignty, shared in a common destiny." (Preamble to the Nouméa Accord, 1998)

makes it possible, at the very least, to define the nature of the territorial relations between the actors and the areas concerned and to lay the foundations of a moral contract with regard to particular sites within the territory. The guidebook, therefore, proposes a tool for reducing institutional and moral uncertainty among stakeholders and especially affected communities.

The guidebook describes how TERA can be mobilised at different stages of the consultation process, as a way to recognise the value of places and actors, and to evaluate changes in these, to arrive at different scenarios of development while negotiating on common ground. It can also be used as a means of monitoring social changes over time during the mining project.

The guidebook could immediately help raise the skills of EIA specialists, who may not be up-to-date in the social impacts of mining, or land planning professionals who may operate from an even more technical paradigm. It also has the potential to facilitate the involvement of local communities and help identify places of value on the basis other than that of biodiversity and economic evaluation classically used in the "Avoid-Reduce-Compensate" doctrine.

Presentations we made to different stakeholder groups – what are formally known in French as *restitutions* – at the end of the NERVAL project elicited a good level of interest and demonstrated that the demand was present to undertake community negotiations on a better footing. It is too early to say that TERA will be brought into general use by mining operators, mining or environmental administrations, NGOs or consultancy agencies, but two examples of its use are promising. The CSR department of one of the larger mining companies, well known to be plagued with community disputes, has reportedly followed our approach. The European Union's PROTEGE program, aimed at sustainable development and integrated coastal management in Pacific overseas territories and being implemented through the Pacific Community (SPC), is experimenting with TERA to help develop aquaculture projects. If this is successful, the usage could be extended to other parts of the program.

In general, it is too early to tell whether these examples will be successful, but TERA is likely to come up against a fundamental obstacle. There is often a gap in terms of competences between an approach developed by social scientists and the lack of social science capacities in consultancy agencies and mining companies in New Caledonia, as is the case more widely in Oceania (e.g. Burton, 2005). In other words, putting NERVAL and TERA to use should take the form of a partnership between research institutes and interested stakeholders, and field training should form a key component. Of course, all this takes time.

5. Conclusion

As we have seen, the value of place is unstable, non-intrinsic, revealed or transformed by events, and by the positioning of the actors. Furthermore, the perception of risk and the context of uncertainty influence the local responses (consent or refusal) to mining actors' proposals. These temporally indexed notions underlie the negotiation of the "free, prior and informed consent" (Owen and Kemp, 2017: ch.9). What is at stake are apparently simple but politically loaded questions: consent to what, when, and under what rules of the game? Before any evaluation or measure of equivalence, the correct recognition of all the actors involved, coming to an understanding of the worldviews they carry with them, and the planning of open negotiations that everyone with an interest can attend, have each to be in place. There is no predetermined formula for these things, and that is precisely what the NERVAL project strives to drive home.

As an operational product of NERVAL, TERA functions as an interface tool bridging the gap between basic research and operational demand. It helps anticipate what can be anticipated,

deal with the unexpected, and monitor in real-time social processes triggered or transformed by a mining project.

The NERVAL acronym stresses the *evaluation of value* and that it is a fruitless quest to search for a plug-in formula for calculating value as everything depends on context, hence the importance of the processes of negotiation and recognition framing the evaluation. The steps to be taken using TERA consists of recognising the range of values carried by different stakeholders, all of which have their own legitimacy, grasping the interaction between the project cycle and the different "timescapes" followed each class of stakeholder, and moving on from these to conceptions of place, land, and territory. It is an approach that is useful for analysing what is going on at any point of a project, from its conception to the post-closure phase, or any predictable or unpredictable event affecting its functioning.

The NERVAL philosophy and its operational translation into a guidebook are all about identifying discontinuities and discrepancies between actors, worldviews, and temporalities in order to settle or anticipate inevitable conflicts, organise discussions and negotiations on a more realistic basis, and eventually build a shared analysis and a more inclusive vision of the development of mining concessions and their management. The guidebook has to be further tested on the ground and tuned to specific situations and stakes.

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