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THE RESOURCE IMPACT DASHBOARD (RID)

AN INNOVATIVE GLOBAL FRAMEWORK TO MEASURE THE LOCAL IMPACT OF LANDED RESOURCES EXPLOITATION BY INDUSTRIES

FRITZ BRUGGER (3); SELINA BEZZOLA (3); JOAO SALAVESSA (2); PASCAL REY (1); PETER HOCHET (1); HERMINE PAPAZIAN (1)

1: Institute for Social Research in Africa, Ouagadougou, Burkina Faso; 2: Universidade de Lurio, Nampula, Mozambique; 3: Swiss Federal Institute of Technology Zurich, Switzerland

fritz.brugger@nadel.ethz.ch

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Abstract

Natural resource extraction is a disruptive and inherently conflictual business. For the communities surrounding extractive operations, everything from livelihood opportunities to the visual landscape changes. For the government the challenge is to transform revenue windfalls into sustainable development. For the mining company costly business interruptions can occur when local populations take the street over disagreement with extractive outcomes. To mitigate the implementation risk and ensure operational stability, an increasing number of extractive companies seek a “social license to operate” (SLO) from local communities. The functionalist perspective severely limits the capacity of the SLO to properly understand local dynamics. Taking a relational approach and integrating insights from research into the emergence of civil conflict and into the role of institutions in creating social capital we introduce the Resource Impact Dashboard (RID), a novel methodology to understand and monitor local level development outcomes in extractive settings. The RID informs deliberations between companies, local populations, and local authorities over impacts and benefits, participation and priorities. We report first exemplary results from testing the RID in two mining areas in Burkina Faso and Mozambique each; full results will be reported in an updated version of the paper.

Key Words: Mining externalities, social capital, social license to operate, Resource Impact Dashboard, web-based monitoring

“In many developing countries the local communities where we were operating were isolated [...] not just physically but politically from the governments of the countries. We would go in there and the government would basically say ‘don’t worry about local community’. We were down there and we realized that we could not ignore the local community. And the fact that they were developing international connections meant that they were beginning to have allies in the NGO community and among churches, media, academics and so forth. We had to take all of that a lot more seriously. When we deal with the government we’re trying to get a government permit. When we’re dealing with local communities, I said, let’s call it a social license. I mean it’s larger than a community permit because it’s not just the community it’s a community plus its international allies so that’s the social license that we have to earn.”
Jim Cooney¹

Introduction

Natural resource extraction projects are disruptive. They come with significant potential and promise for host countries, mining regions and investors. But they also come with significant risks. The potential for conflict with local populations, civil society or even host governments is inherent to this type of industrial activity. Large-scale resource extraction gives rise to disputes over direct impacts and benefits as well as over long-term development goals and priorities. From the Hambacher Forest in Germany (Wilkes and Parkin 2018; Brock and Dunlap 2018) to Mufulira in Zambia, developments at extractive sites typically are the flashpoint of the conflict (Vasquez 2014; Hanna et al. 2016). In Africa, environmental degradation, asymmetry of impacts and benefits, lack of employment opportunities, resettlement, and health and safety drive 70% of all company-community conflicts (Andrews et al. 2017).

Data on mining conflicts between 2000 and 2013 show a direct correlation between the frequency of conflict incidents and the rise and fall of mining activity globally as well as across regions. This suggests that mining-related conflicts are systematic in nature rather than specific to certain types of mines or countries. What makes a difference to the trajectory of a conflict, though, are structural and contextual factors. A low capacity of government to control the extractive sector and to mediate between different interests seems to increase the risk of escalation, affecting particularly developing countries (Andrews et al. 2017).

¹ Jim Cooney is a philosopher by training and former Vice-President International Government Affairs at Placer-Dome (now Barrick Gold). Interview with Canada Science and Technology Museum, August 19, 2015. Full interview available at <https://www.youtube.com/watch?v=BXRecv6oh8g> (last accessed December 20, 2018); sequence about SOL available here <https://www.youtube.com/watch?v=NkQMq0gIEYU> (last accessed December 6 2018)

The risk of costly business interruption makes mining companies nervous (Davis and Franks 2014). To ensure operational stability, an increasing number of extractive firms proactively strives to get a “social license to operate” (SLO) from local communities. A simple Google Scholar search for “social license to operate” illustrates the exponential rise in popularity of the SLO over the last years (Figure 1). The term was introduced by senior mining executive Jim Cooney in 1997 “as a point of reference for pragmatic political risk management” (Cooney 2017). This origin locates SLO firmly in the functionalist approach to community relationships which also dominates the corporate CSR discourse (Blowfield 2005; Vogel 2006). From an investor’s point of view, the local population is an external cost. Access to resources and operational stability are the expected return on community investment. In the worst case, the local population can be a very costly obstacle to the smooth implementation of a project (Davis and Franks 2014; Buur, Nystrand, and Pedersen 2017).

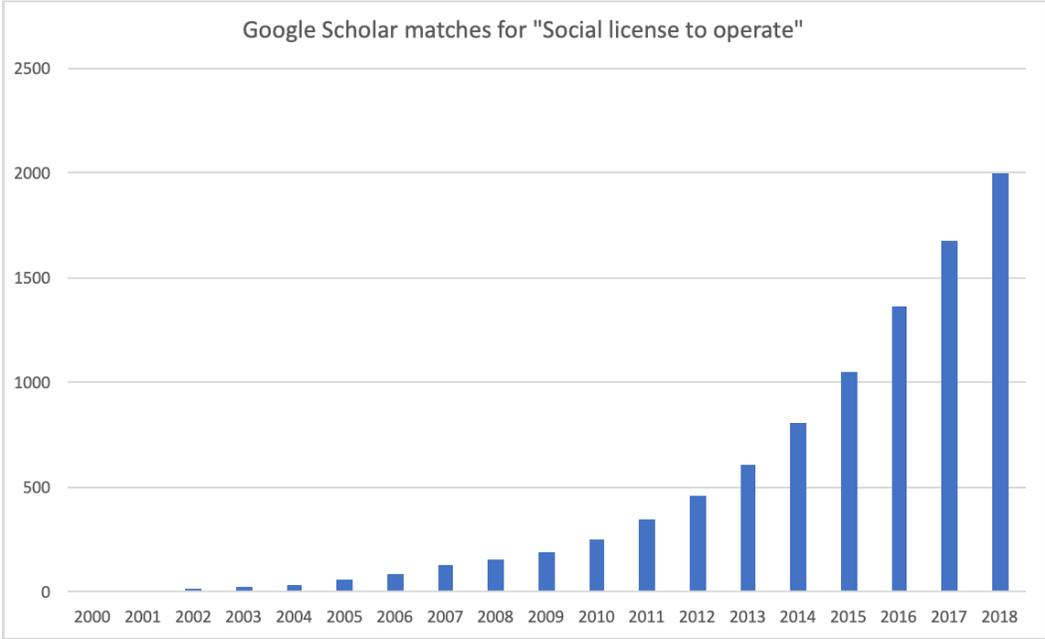


Figure 1: Google Scholar matches for "Social license to operate"

Despite its popularity, the “social license to operate” remains vague as a concept. A commonly agreed upon definition of what a “social license to operate” entails and an understanding how it is acquired or lost, still has to emerge in the literature. In general terms, SLO is understood to be “the ongoing acceptance and approval of a [project] by local community members and other stakeholders that can affect its profitability” (Moffat and Zhang 2014, 61; see also: Boutilier and Thomson 2011; Gehman, Lefsrud, and Fast 2017; Heffron et al. 2018 for other definitions). But key terms such as “acceptance” or

“approval” lack a clear definition. It is also up to debate whether SLO has any different meaning than the legitimacy of a company (Gehman, Lefsrud, and Fast 2017; Morrison 2014). The use of the concept “social license to operate” by practitioners in the extractive industry is equally vague and under-theorized. Parsons and Moffat (2014) found in an analysis of corporate sustainability reports that the use of the term “social license is essentially a metaphorical and rhetorical notion bearing little resemblance to a license in the legal sense.” (Parsons and Moffat 2014, 351).

The SLO approach to local populations is not only functionalist, i.e. an instrument to smoothen operations, but also reductionist: It reduces communities to risk factors and precludes a more comprehensive understanding of complex social realities. All relations are seen as being directed towards the company which artificially isolates extractive projects from broader socio-political dynamics. It misconceives how deeply political development is, from the struggle over ideas how development should come about to the “processes of conflict, co-operation and negotiation on taking decisions about how resources are to be owned, used, produced and distributed” (Leftwich 2004). An inclusive approach to development requires not only social and material benefits to be equitably distributed across income groups, genders, ethnicities, regions and others in society but also capabilities, social and political empowerment to partake in the deliberation over development priorities (Hickey, Sen, and Bukenya 2014a).

Recognizing that the local level is where development is actually delivered (Hickey 2014) and not only where the resources for development are to be generated in a frictionless manner calls for a more comprehensive theory and methodology to engage with extractive settings. We introduce the Resource Impact Dashboard (RID), a novel approach to monitoring and assessing the local level outcomes of resource extraction. The RID moves beyond the narrow linear understanding of the SLO and puts local populations instead of companies center stage. The RID also moves beyond poverty and the poor to account for the complexity of development processes (Hickey, Sen, and Bukenya 2014b).

Instead of taking an operational risk perspective, the RID acknowledges that development in general and large-scale investment processes in particular rarely take place without conflict. This does not mean that extractive projects are *eo ipso* unfair. Rather, the disruptive character of resource extraction works as external shock that shakes-up the existing institutional and social balance as well as the distributional outcomes embedded in institutional arrangements (di John and Putzel 2009). Monitoring and making transparent how these dynamics evolve during the lifetime of a project holds the potential to inform the deliberation over representation and procedural justice, over the distribution of benefits and externalities as well as over development priorities.

The remainder of the article is structured as follows: the next section provides a brief review of the SLO literature. Section 3 analyzes the limitations of the SLO and outlines the theoretical foundation of the RID. Section 4 introduces the methodology used to operationalize the RID. The last section concludes.

The SLO Literature

The conceptual literature on the SLO can roughly be grouped in three strands: a first is occupied with the identification of the SLO's constituent elements and the process how granting or withholding an SLO. A second strand explores the concept's links and relation with other licenses and permits that govern resource extraction. The third strand focuses on the operationalization and measurement of the SLO. In addition, a fast-growing collection of case studies applies the SLO concept to particular settings in developed and developing economies.

A plethora of values, attitudes and behaviours on the side of companies and populations has been linked to a SLO and its measurement. However, there is no consensus over which elements really matter, the meaning of these terms, the pathway through which they influence the SOL nor how they interact with contextual factors. For example, for Moffat and Zhang acceptance of the extractive company is mediated by corporate practices such as contact quality and quantity as well as procedural justice. Such practice is assumed to build trust and subsequently to lead to acceptance and approval of the extractive company (Moffat and Zhang 2014; Mercer-Mapstone et al. 2017). Morrison (2014) sees trust, legitimacy and consent as the core of a social license. Boutilier and Thomson, two industry consultants, developed the layered SLO pyramid model. According to this theory, legitimacy is the starting point only and leads to acceptance. Credibility then leads to approval and trust. This finally translates into psychological identification which is understood as providing a SLO (Boutilier and Thomson 2011). Luke (2017) later complemented the pyramid into a SLO diamond model by mirroring the same layers to include the route to conflict: Starting with the loss of legitimacy of the company the trajectory leads via acceptance and approval of objections to the mining project to the identification with social resistance and finally to conflict. Litmanen, Jartti and Rantala (2016) establish six variables that are connected with acceptance, including environmental attitudes, perception of the need for and disadvantages of mining, familiarity with the mining industry and estimating how much is known about mining, trust in officialdom, trust in environmental legislation and attitudes towards foreign mining companies. Yet, they are unable to detect a causal path leading from one element to the next and at the end to a SLO.

Prno and Slocombe (2014) use a systems-theory based framework for assessing the determinants of a SLO. Their model is conceptually broader, recognizes extractive settings as complex adaptive systems

and discusses the roles of context, key system variables, uncertainty, feedback loops and thresholds among others which result in different SLO outcomes and different levels of SLO resilience. The systems approach is sensitive to complex interdependencies and results in a far broader set of observable characteristics. Yet, its mechanistic approach fails to engage with and theoretically unpack the relational dynamics that lay beneath these observables preventing a deeper understanding of the complex realities it observes.

A second strand of the literature explores the broader landscape of mining licenses and attempts to integrate more systematically the SLO into the authorizing environment. Various hard and soft-law requirements for participation, consultation, informed consent or the respect of human rights are seen as the legal basis for a SLO (Heffron et al. 2018). However, this rather turns the concept of SLO into an umbrella-term for adhering to existing regulations that promote procedural justice (e.g. the Voluntary Principles on Security and Human Rights or obligations to facilitate the input from local populations on the Environmental Impact Assessment) or community development (e.g. local development funds, community development agreements). Other scholars take a broader focus and see the social license together with the legal and political license building a comprehensive licensing and risk model. The three types of licences are linked together by the public interest to which each of the three licenses is supposed to contribute. Frictions around any of the licenses are related to a different understanding of what the public interest exactly means and disagreement over who has which obligation in the realisation of the public interest (Bice, Brueckner, and Pforr 2017).

Finally, distinct methodologies have been developed and applied to measure the extent to which a SLO exists (Black 2013; Boutilier 2017). Such instruments respond to the keen interest of the industry in establishing the level of acceptance in a given project. The monitoring of the company's risk exposure is seen as particularly relevant where the social license is perceived to be "the governance mechanism by default" (Boutilier 2017, 5), i.e. in situations where the factual absence of the state changes the company-community nexus. This holds for many rural areas of developing countries and typically increases with the distance to the capital. The attempt to measure SLO as routine exercise operationalizes the current instrumentalist management response to risks that arise from local communities and stakeholder (Kemp and Owen 2013).

Overall, the SLO literature remains ambiguous. Given the lack of a robust definition of SLO and the limited understanding of the mechanisms behind the measurement of a SLO could as much mask effective risks. Cautious voices from the industry to focus more on in-reach, i.e. the culture and procedures of the companies, than on out-reach make an important point on priorities for companies (Harvey 2014). However, as we discuss in the next section, extractive projects provoke questions not only

over impacts from resource extraction and direct benefits but also over longer-term development priorities and representation that extend beyond the narrow company-community nexus.

Relational Theory of Resource Extraction

In contrast to the functionalist theory of the SLO, we adopt a social relational perspective to the analysis of development outcomes in producer areas. It goes beyond objectively measurable socio-economic characteristics of societal strata to acknowledge the influence of historically developed economic and political relations on development outcomes of different societal groups (Mosse 2010; Hickey, Sen, and Bukenya 2014a, 6). Understanding existing socio-economic characteristics such as poverty or inequality as an result of political systems, the agenda setting power of elites, their discourses and the terms of inclusion or exclusion builds on political economy theories, particularly the more recent work on ‘limited access orders’ (North et al. 2007, 2009) and on ‘political settlements’ (di John and Putzel 2009; Khan 2017, 2010). These theories offer important approaches to understand the performance of institutional arrangements with a view to explain how elites operate them in order to maintain power and influence, and further their economic and ideational interests.

In a relational theory of development elites play an important role not only at the national but also at the local level. Generally speaking, elites include groups that have holding power, those “who have the organized capacity to make real political trouble” (Burton and Higley 2001). The capacity to mobilize and organize builds on a variety of means such as economic resources or networks (Khan 2017, 2010). Using this broad definition of elites, Hickey includes groups who control valuable assets and those who have the power to adjudicate over the distribution, allocation and regulation of property rights and use of property which are often traditional authorities. Importantly, elites also include those who possess authority to bargain on behalf of organized social groupings, including civil society organizations and unions; further, those who play a role in establishing and maintaining dominant norms and ideas, for example religious leaders, public intellectuals and media owners (Hickey 2014).

At first sight, the SLO shares this relational perspective with its aim of understanding stakeholder perceptions and of measuring the quality of the mine-community relation. SLO is a move away from a predominantly positivist measurement of outputs and outcomes that prioritizes material transactions as they are reflected in many community development agreements, CSR policies or resettlement plans towards the acknowledgment that perceptions of fairness, respect, trust and legitimacy are real and equally important as material facts; they are acknowledged to shape relations and behaviour. This is a step towards a meaningful engagement with social dynamics around extractive projects.

However, there are significant limitations in how the SLO approach understands social relations. They differ in two dimensions significantly from the relational theory which informs the Resource Impact Dashboard (RID). One concerns the system boundaries, the other the scope of relations.

The system boundaries of the SLO are narrowly defined along the relations between the extractive company and key stakeholders with direct contact with the mine. Stakeholders that are relevant from a SLO perspective are identified by the company and represented by their leaders. In contrast, the social relational approach is far broader and takes a political economy view on the social system that shapes and is shaped by extractive operations, including institutions, elites, groups and normative practices. This requires that the geographic area and the societal strata considered by relational theory and the RID are boarder and more comprehensive compared to the very narrow catchment considered by the SLO.

Accordingly, the scope of relations that is of interest to the SLO and the RID respectively, differs. SLO takes an individualistic stance with the psychological identification of the stakeholder group leaders which are to be interviewed to establish the extent of a SLO as the benchmark (Boutilier 2017). This seems closer to relational realism (Emirbayer 1997) that discounts substance over perception. As Boutilier puts it: “The assumption in the concept [of SLO] is that if stakeholders see the impacts as bad, the relationship will be viewed negatively as well... Looking directly at the perceptions of the quality of the relationship avoids the necessity of companies having to second guess what is important to the stakeholders.” (Boutilier 2017, 3)

In contrast, a social relational approach acknowledges the complexity of the setting and its influence on extractive outcomes. Therefore, it is interested in (a) understanding the balance or distribution of power between contending social groups and elites, the development of (organizational) power amongst more subordinate groups, (b) the specific relationships and social fabric between these and different elite factions, and (c) how the disruptive entrance of large-scale investors (re-)shapes the web of existing and new relations and subsequently the distributional outcome of institutions.

A relational theory informed perspective leads to a different reading of the company-community nexus compared to the SLO lens. First, the relational approach is political. In contrast, the SLO concept does not sufficiently recognize the political nature of extractive projects. Companies are awarded long-term concessions by government to extract resources which is fundamentally different from opening a factory. While pursuing a corporate agenda and business plan in their own right, extractive companies are at the same time executing agents of the government’s national (development) agenda, as for example the “Africa mining vision”² illustrates. This makes it impossible for mining companies to separate themselves

² www.africaminingvision.org

from politics. They execute contracts that the government entered into on behalf of the local populations. Project-specific relations are embedded in and shaped by the long-term relations between local populations and the government irrespective of the actual performance of the company. From that perspective, a dispute between the local communities and the company can also be read as a proxy conflict with the government (Buur, Nystrand, and Pedersen 2017; A. Bebbington et al. 2018).

Extractive companies do not only become part of these larger political configurations, they also influence outcomes at the local political and developmental levels. This happens for example through local coalitions, i.e. the identification and selection of key stakeholders which they consult and cooperate with through their leaders or through corporate decisions with whom they share resources with or not. Particularly in exclusionary political settlements, which are prevailing in most developing countries, such decisions have a major bearing on prevailing power dynamics. Coalitions entered into by the extractive companies tend to strengthen local elites which are typically among the key stakeholders identified by mining firms. Often, local elites receive (and request) direct material favours and are the most frequent interlocutors for local issues. This means privileged access, the possibility to shape CSR investment, and influence or even decide who is included – or excluded – from a project. Such elite capture of community engagement is well documented (Frederiksen 2018; Kasimba and Lujala 2018; Pegg 2006).

Companies' search for stability on one side as well as the holding power of local elites on the other side work against inclusionary approaches in exclusionary political settlements. The resulting coalitions reinforce the political dimension of corporate activity although quite differently from what the corporate citizenship discourse or the discourse on the politicization of CSR suggests (Frederiksen 2018; Banerjee 2008; Scherer and Palazzo 2011; Matten and Crane 2005).

Second, the relational approach is sensitive to socio-cultural and socio-political dynamics and unpacks “local communities” or the “local population” into groups which not only differ in interests and expectations but also in their agency or holding power, i.e. their ability to influence decisions, and who may be affected by a proposed investment in various ways and to varying degrees. In contrast, the SLO approach suffers from a “thin” and limited conceptualization that does not explicitly define and theorize local communities. Rather, it follows the stakeholder management approach in CSR where stakeholders are qualified based on a power-influence analysis. Only those stakeholders become salient to managers which possess attributes of power, legitimacy, and urgency of claim. The more of these attributes a stakeholder possesses, the more salient they become. And the SLO is measured “as granted by stakeholder group leaders who have had direct dealings with the mine” (Boutilier 2017, 11; Prno and Scott Slocombe 2012; Prno 2013).

Third, the relational approach engages with conflict as part of development. In contrast the SLO conceptualization reduces conflict to a costly risk. Driven by the quest for operational stability, there seems little consideration of insights from research into extractive conflicts. Evidence from research into conflicts between extractive companies and communities suggests that separating the company-community relationship from the broader socio-political and socio-economic dynamics is impossible for several reasons.

One is complexity. The relations between local populations, government and companies are intrinsically interwoven. Conflicts between local populations and mining companies cannot be easily separated from the relations with the authorities who are supposed to represent communities towards companies. The capacity of the government to regulate the industry and to manage revenues at the local level are correlated with company community conflicts. Even intra-community dynamics such as internal fractionalization and cleavages are found to affect the likelihood of conflict between companies and communities (Salem et al. 2018; Arellano-Yanguas 2011; Andrews et al. 2017).

The next is escalation: Expectations about what people deserve and what they receive are not sufficient on their own to convince people to stage a violent conflict. It is likely that a combination of emotional, social and material conditions must be in place for grievances to turn into open conflict. Beyond individual experience of injustice, research finds that group identification, i.e. the shared perception of group members not be represented by the elite and hence betrayed of legitimate opportunities, framing the perception, naming and shaming those seen as suppressors, and mobilization are the likely stages which are all required before open and violent confrontation materializes (Stølan et al. 2017; Must and Rustad 2018; Cederman, Gleditsch, and Buhaug 2013; Kolstad and Wiig 2018).

Another is negotiation: Community-company conflicts do not necessarily signal an outright rejection of resource extraction. Conflicts can also be seen as a way of negotiation over respect, consultation, representation and how economic processes are embedded in social reality. This is why social accountability processes do not automatically reduce conflict immediately. Increasing transparency and providing more information is not necessarily a quick fix which a functionalist approach is looking for. Societal groups may see transparency and access to information as a successful first step towards deliberation on truly equal footing and continue demand further performance improvements (Sexton 2017; Nussio, Garcia-Sanchez, and Pantoja 2014; A. J. Bebbington 2014; Hodge 2014).

The last is risk: Communities are aware that engaging in conflict with the extractive company is always a risk, even when it is orchestrated by those who have holding power. Going too far – be it for seeking redress for grievances or for extracting additional resources – could bring support to a halt at all. Similarly, the societal groups' self-assessment of their agency, i.e. the degree to which communities

believe they can influence the outcome through conflict dynamics affects how likely an open confrontation is sought. Reading stability as approval in a situation of dependency may mask underlying tensions and grievances (Andrews et al. 2017; Trebeck 2008).

	SLO	RID
Perspective	Operational risk	Societal development
Scope	Narrow	Broad
Development	Economic development	Inclusive development
Politics	Outside	Inside
Theory	Relational realism	Relational substantialism
Methodology	Social perceptions measurement	Social capital approach

Table 1: Key characteristics of the SLO and the RID

In sum, a substantive analysis of mining-induced local dynamics has to account for the relational complexity that shapes development outcomes. Further, it is not sufficient to focus exclusively on perceptions and relations. The material outcomes and distributional effects matter as much as the non-material outcomes: economic well-being as well as infrastructure, environmental outcomes and effects on human capital at the mine site level. This is a major deviation from a corporate perspective where mine-site level disclosure (for example on environmental performance) is virtually non-existent the recent analysis of mine-site-level disclosure of Toronto-listed mining companies illustrates (Responsible Mining Foundation 2019).

Methodology: The Resource Impact Dashboard Analytical Framework

This section describes how the relational theory translates into the RID, a methodology to monitor development outcomes at the mine-site level. The system boundaries of the RID are defined by political settlement considerations. The assessment of relational and institutional dynamics is operationalized using an institutional conceptualization of social capital. The material outcomes are assessed at the level of flows contributing towards financial, physical, environmental and human capital.

System boundaries

The system boundaries of the extractive setting are operationalized as triangular relationships between extractive companies, local populations, and ruling elites (Figure 2). This framework builds on Buur et al (2017) and lends itself to operationalise relational theory and to capture actors as actors-in-relation. A local population at an investment location consists of many groups and individuals with different interests and abilities to influence events, and who may be affected by a proposed investment in various ways and to varying degrees. Similarly, the ruling elites are not a uniform bloc but consists of national and local

elites, politicians and bureaucrats, and may also include traditional authorities or even religious leaders or economic actors, depending on their holding power (Khan 2010).

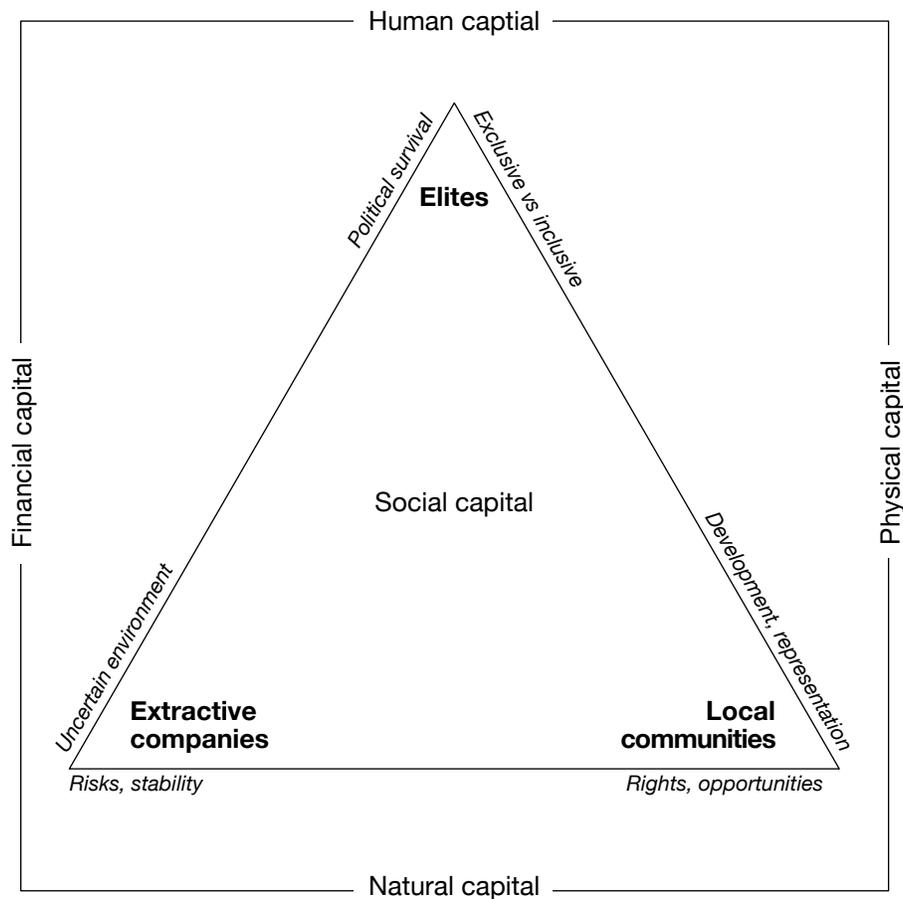


Figure 2: Conceptual framework to analyse outcomes in extractive settings (source: author, based on Buur, Nystrand, and Pedersen 2017)

We start with the relationship between local populations and the extractive company, the only relationship in which the SLO is also interested in. As discussed earlier, the local level exchange deal between the two is guided by the operational risk perspective seeking as stable environment on the corporate side; on the side of local populations it is the expectation of local communities to see their rights respected (e.g. land rights, compensation, mitigation of environmental, social and health externalities) and to see their livelihoods benefitting from job opportunities, local content, and investment.

The second relation is between the extractive company and the ruling elites, first at the national level but subsequently also at the local level. The guiding principle here centers around what Buur et al (2017) succinctly call “compatible interests” which is different from “shared interests”. Relations between ruling

elites and investors are based on each using the other and somehow gaining from collaborating and implementing an investment

project. While companies strive for access to resources in a politically uncertain environment, for ruling elites, political survival is an important driver; other elite groups may seek opportunities to maintain, strengthen or even expand their administrative, social or economic position.

Finally, there is the relationship between local populations and (local) elites. It is embedded in a history that predates the arrival of the extractive project and has generated experience of how the regime governs the country, accommodates the rights and interests of local populations, and delivers development and social security. It has also created patterns of interaction and ways to deal with controversial issues. Unpacking ruling elites is important not only at the national level but particularly also at the local level. In addition to representatives of the formal state – to the extent they are present – traditional authorities and other networks may have significant holding power and control access to land or services which they may manage differently for different groups.

Scope

We have defined the scope of relations to include both the qualitative dimensions in the complex social fabric of actor group relations as well as the distributional outcomes of institutions shaped by those relations. The capital approach is well suited to operationalize the assessment: first, it includes material and non-material dimensions and, second, as wealth-based approach it includes a temporal dimension.

Through the adjusted net saving (ANS) calculation (Bolt, Matete, and Clemens 2002), the capital approach has become influential in national accounting and increasingly in the resource curse literature (e.g. Stoever 2012; Barbier 2010; Atkinson and Hamilton 2003; Dietz, Neumayer, and de Soysa 2007; van der Ploeg 2010; Gnègnè 2009). The wealth-based view on development was not only applied at the macro-level but has also informed the ‘livelihood approach’, a framework for assessing the wealth-base that an individual household has at its disposal to devise a livelihood strategy (Scoones 1998; DFID 2001)

The capital approach conceptualizes an economy – at the national level, but also at the household level – as a dynamic system of linked stocks of tangible capitals (physical and natural capital), and intangible capitals (human and social capital) (UNECE 2009, 46). As illustrated in Figure 3, together they represent the assets, or wealth, from which utility can be derived, resulting in well-being of households (Stiglitz, Sen, and Fitoussi 2009; UNECE 2009; UNU-IHDP and UNEP 2012, 2014). The capital perspective

conceptualizes development as the process of accumulating, managing and preserving wealth in the form of a portfolio of different tangible and intangible assets³ (United Nations 2014).

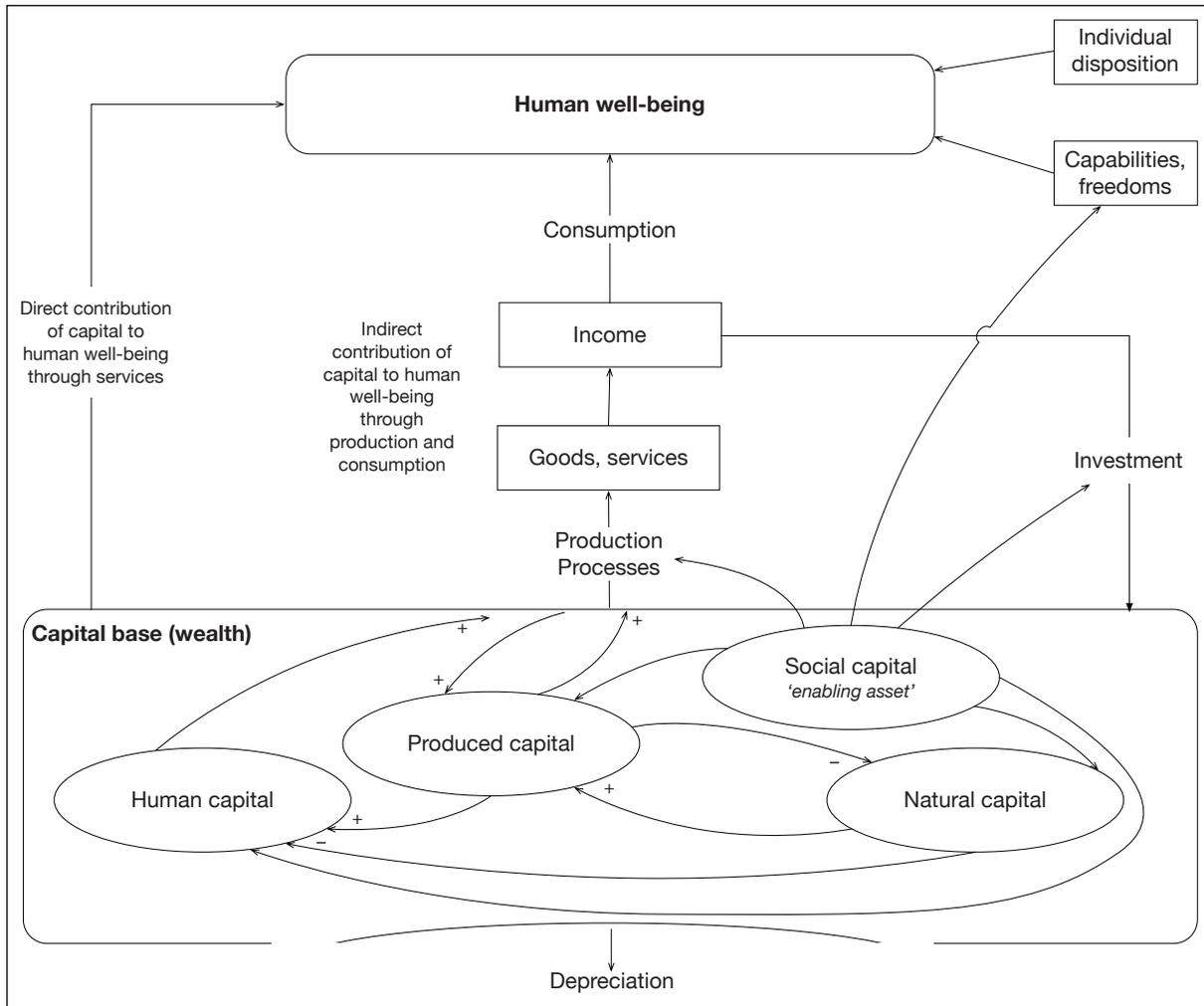


Figure 3: Capital base as wealth portfolio from which utility is derived (source: author, based on UNU-IHDP and UNEP 2014)

Measuring capital stocks and flows in quantitative units is methodologically challenging, suffers from data limitation and is only possible at the national level for some capitals. The RID does not measure capital stocks in physical or monetary units⁴. Rather, the RID uses the conceptual foundation of the

³ Under the condition of compensatory accumulation, overall wealth can be maintained even if some stocks deplete within certain limits (weak sustainability perspective)

⁴ Most stocks are hard to measure in stock-specific units and even harder in monetary units due to data limitations. Social capital is only represented as residual value. Existing measurements are at the aggregate level

capital framework to identify proxies for how extractive operations affect capital stocks or flows⁵. RID observations therefore represent theory informed trend assessment.

In the literature, the number of capitals, their naming convention as well as the definition of the asset boundary and stock components differ. The following section delineates the capital dimensions and the definition of capital stocks included in the RID, based on an review of the respective literature (Stiglitz, Sen, and Fitoussi 2009; UNECE 2009; UNU-IHDP and UNEP 2012, 2014).

(1) Social Capital

Following the logic of the relational social theory, we start by putting social capital center stage⁶ (Figure 2). Social capital operationalizes the observation of the relations in the triangle consisting of mining companies, local populations, and (local) elites. Moreover, social capital is an enabling asset that affects how other the capitals are put to use and how investment in other capitals such as physical infrastructure, health or education, is regulated (UNECE 2009, 45).

Social capital is typically said to be a function of the density of relations between individuals, the cohesion and trust in groups and networks, and the trust in the honesty and integrity of others. The more relations between individuals within groups (bonding) and individuals in other groups (bridging), the more social capital exists (Putnam 1993, 1996; Fukuyama 1995).

Yet, when looking at resource-rich countries, there seems to be far too much of personal relations and trust within elite circles and clientelist relations. Patronage networks de-facto rule many of the resource-rich countries. Ample social capital holds them tightly together and makes corruption and embezzlement flourish. Social capital tends to become ever more ingrained as resource rents accrue over time (see also Schuller, Baron, and Field 2000, 31 on social capital in Mafia organizations).

Behind this puzzle lays an important distinction to be made between particularized trust and generalized trust. The former represents faith only in the in-group as is the case in clientelist networks and partisan groups. Where particularized trust dominates, people will restrict their activities and support to their own group only, even when involved in civic life (Rothstein and Stolle 2008, 45). The latter links us to people

where they mask differences in access to capital stocks among different groups in society and, therefore, the potential for well-being in the long term (Brereton and Pattenden 2007; Stiglitz, Sen, and Fitoussi 2009)

⁵ Flows cause the capital stocks to increase (investment) or decrease (depreciation).

⁶ This is in contrast to the discussion of the capitals in the literature which usually starts with the “easier” tangible capitals (physical and natural), then discusses human capital and keeps out social capital altogether or treats it as “residual” asset.

who are different from ourselves and reflects a bond that people share across a society and across economic and ethnic groups, religions, and races.

Research into the role of institutions in generating and maintaining generalized trust and social capital finds that generalized trust is not a spill-over from a dense network of ingroup-relations⁷. Rather, generalized trust is closely linked to how equal resources and opportunities are distributed in a society. “Generalized trust both depends upon a foundation of economic and social equality and contributes to the development of a more egalitarian society” (Rothstein and Uslaner 2005, 45).

Obviously, whether government policies are exclusive or inclusive has a great impact on economic and social equality as well as on equal opportunity (Stiglitz 2012; Acemoglu and Robinson 2012). Importantly, not just the content of policies but in particular the effectiveness and impartiality in the implementation influence whether generalized trust or fractionalization are promoted. In other words, the encounter between citizens and public officials depends as much on whether they get what they want as on whether people are given – and feel that they are given – fair and equal treatment (Kumlin and Rothstein 2005, 347; Rothstein and Teorell 2009, 170).

The impartiality, fairness and efficiency of administrative bodies responsible for the implementation of public policies are found to affect social capital. The observation of procedural justice, i.e. impartial and fair procedures, makes the behavior of an institution more predictable and hence tends to promote trust in the behavior of others (Rothstein and Stolle 2008). This logic applies beyond the encounters between citizens and the administration also on the behavior of corporations. How they deal with the administration (lobbying the government, requesting – and getting – extra rules for their company, entering into and execute security arrangements with the government etc.) as well as how they interact with the community (e.g. raising and managing expectations, handling compensations, resettlements and claims among others) matters at the broader level of social capital.

Measuring social capital

The observational fields of social capital are defined for relations within local communities, between local communities and local elites, and between local communities the extractive company. Data are collected through a household survey that is administered to a representative sample of the population in a 20km radius around the mine.

⁷ Mainstream social capital theory explains generalized trust as a spill-over effect from the individual into society where it is assumed to promote good governance. The institutional social capital theory was first developed by Margaret Levi (1996) and later by scholars around Bo Rothstein (Rothstein 2003; Kumlin and Rothstein 2005; Rothstein 2005; Rothstein and Stolle 2008; Rothstein and Teorell 2009; Pierre and Rothstein 2010). Putnam and Fukuyama dismissed the option to consider institutions as relevant (Putnam 1993, 171).

For communities, the RID measures *cohesion* (e.g. levels trust and conflict, level of organization), the *interest in public affairs* and extractive issues (e.g. use of information sources, knowledge about mining revenues) as well as *civic engagement* (e.g. attending townhall meetings or meetings organized by the company, making requests to the authorities or the company).

For the relationship with local authorities the RID establishes the perceived *effectiveness* in delivering goods and services as well in using resource revenues in the interest of local populations and the country. Further, we establish government *impartiality* in dealing with ordinary citizens, companies and officials, and personal experience with bribes in accessing services. Finally, we map the *trust* the population has in authorities. The perception measurements are complemented with data on access to services and quality of services.

The analysis of the relation from the local population with the extractive company is structured along the logic used for the relations with authorities. *Effectiveness* covers contributions to community development. Proxies for *impartiality* are the quantity and quality of the company-community dialogue and the company's performance in managing conflicts. The subjective assessment is complemented with quantitative information provided by the company on community interaction and on the grievance mechanism (grievance procedure, number of grievances received and resolved).

(2) Physical capital

Physical capital is straight forward and well-defined. It includes infrastructure for transport, utilities (e.g. water, wastewater), social infrastructure (health, education, leisure), government infrastructure, but also environmental infrastructure (e.g. irrigation, flood control). The RID does not track public investment as flow indicators but tracks how access to improved water sources, to sanitation and to electricity evolve, using data from the household survey and administrative sources.

In addition, the RID publishes information provided by the company about their investment in the area of physical capital as part of their community investment programs.

(3) Natural capital

Environmental effects of resource extraction constitute the single biggest source of conflict which makes monitoring the effect of resource extraction on natural capital crucial (Andrews et al. 2017; CAO 2008; Temper and Martinez Alier, n.d.; Salem et al. 2018; Wessman et al. 2014). Conceptually, natural capital includes water, nonrenewable resources, forest, land, protected areas, air, climate, noise, vibrations, and biodiversity (UN 2014; UNECE 2014). Environmental impact assessments are mandatory in all except

two countries worldwide and internationally agreed benchmarks were released by IFC, WHO and industry bodies (Winkler et al. 2012; McCullough 2017).

Yet, in most extractive projects, neither the regulator nor extractive companies release site-level environmental monitoring data. Voluntary site-level disclosure by companies is the rare exception (see also Responsible Mining Foundation 2019). Own data collection is beyond the scope of the RID.

In light of this situation, the RID takes a pragmatic approach that builds on two pillars: First, the RID measures the experience of environmental hazards by the local population and the extent to which they believe the hazard was caused by the extractive operations. It is established through the household survey. Second, the RID requests from companies basic information about its environmental monitoring: a) licensed water abstraction quota and the amount of water effectively used; b) geocoordinates of the monitoring locations for water, air, soil, noise; c) limits for the different parameters to which the company has to adhere compared to internationally established limits; d) number of samples taken per year and the number of samples that surpass the limit established in the environmental management plan.

This information is far from complete. Yet, knowing where exactly and how often the company measures environmental hazards can be a first step towards a more substantive negotiation over environmental management even if still quite distant from more advanced forms like joint environmental monitoring (CAO 2008; A. Bebbington and Williams 2008).

(4) Human capital

In human capital, the RID measures educational outcomes and formal employment through the household survey. This is complemented by institutional data on completion rates and the teacher pupil ratio as proxy for quality.

For health as the second component of human capital the RID establishes the health seeking behaviour of households as well as the service availability which is particularly sensitive given the often high in-migration into extractive areas.

Findings and Discussion

The RID is currently being tested in two mining sites in Mozambique and two in Burkina Faso. We report on some first results from the testing. The detailed results for all capitals discussed above will be published on www.resourceimpact.org and discussed in a next / updated version of this paper.

From the relational theory perspective that informs the RID, four observations regarding social capital stand out. First, an exclusive risk perspective deployed by companies towards communities does not do justice to the local populations. The answers and perceptions of the populations living in the area show that their opinion does not only depend on whether they benefit directly. For example, in all cases the approval rate of mining activities is by a margin of around 5-15% higher than the agreement of respondents that life has become better thanks to the mining activities. Also, respondents who face environmental hazards do not blame everything on the mine – even in the absence of any information whatsoever on the environmental performance of these four companies. This goodwill towards the companies can wear off by pursuing an instrumental approach instead of pursuing an earned reputation (Thielemann and Wettstein 2008).

Second, the importance of institutions and procedural justice is not recognized by companies and governments. For example information sharing: The Extractive Industry Transparency Initiative (EITI) is virtually un-known in all mining areas and in no case more than 17% of respondents ever heard anything about extractive revenues. And the situation for the company does not look much different. While 25-40% of the respondents say they received information about job opportunities, in none of the four mining areas more than 25% of the respondents say they were consulted by the company (the figures are 2%, 5%, 12% and 25%; versus a maximum of 40% who attended any meeting with the company). This contrasts with an explicit appreciation of those who had contact with the mine: over 75% say that the contact was useful and they were listened. However, this rate drastically drops to a low 20% (Mozambique) and somewhat better 45% and 55% in Burkina Faso when asked about the capacity of the mine to solve conflicts with communities. Obviously, there is significant scope to improve institutional performance and procedural fairness as the level of approval of the company and trust correlates with information sharing, attending meetings, and consulting.

Third, citizens prefer an effective government over an effective company. Between 46% and 67% of the respondents see government institutions, particularly local governments, as the preferred institution to implement community development projects funded by revenues from resource extraction. This holds even in the mining area where the company got a better result than the government in the effectiveness evaluation. At the same time, NGOs are not particularly welcome as implementers, only between 4.6 and 8.4% see them as the most efficient organization. This underlines the importance of the company-elite relationship. Where companies manage elite relationships from an instrumentalist perspective they risk eroding the relationship between citizens and (local) governments.

Fourth, the relation with the company cannot be understood without considering the interdependency with wider socio-political dynamics: This is well illustrated by the findings from the Perkoa mining area. Here, an ambiguous relationship of the population towards both the mine and the government can be observed:

On one side, over 90% approval of the presence of the company, over half of the respondents who are satisfied how the company solves conflicts with the community, and over 60% of the respondents see the company as the most effective implementer for community development projects. A superficial reading might see this as a bold support for the company. Yet, these affirmative results are in sharp contrast with the very low trust in the company (<20%), the fact that the company is not perceived as more effective in providing basic services than the government, and the perception of more than 70% of the respondents that the company goes unpunished if it breaks the law. At the same time, the results also show an obvious disconnect of the citizens around the Perkoa mine from the government. It is significantly less trusted than is the government in the other mining sites.

Open protests and conflicts with the mine made headlines in 2015 (Africa Mining Intelligence 2015). The protests came after the population learned that the wife of the former minister of foreign affairs in her capacity as the chairwomen of the Nantou Foundation, which was endowed with money from the mining company to finance development projects, had siphoned off funds for private purposes (Engels 2017). In addition, the former minister of foreign affairs, Djibril Bassolé who hailed from Perkoa village and lost his position after the coup d'état in October 2014, was not allowed to run for President in the September 2015 elections. So, the population was faced with long-lasting fraudulent behaviour around the Nantou Foundation as well as with loss of direct representation in the new government. The results in the survey mirror the ambiguous relationships and a volatility that can escalate in any direction. Support of the company can as much reflect the frustration towards the own government as it can reflect a change in behaviour of the company after 2015. The regular use of the RID helps to establish trends and inform deliberations between companies, local populations, and authorities.

Conclusions

The RID advances the understanding of local dynamics around resource extraction from a development perspective. By putting local populations living in a complex socio-cultural and socio-political context complexity centre stage the RID allows for a more differentiated understanding of mining-induced local level dynamics within local communities as well relations between communities, companies and authorities. The RID breaks new ground in promoting the disclosure of mine-site level company data relevant for local development outcomes (grievance data, environmental monitoring data). The first results from testing the RID indicate the capability of the methodology to produce a rich analysis. By firmly placing the RID into the public domain it holds the potential to inform public and private stakeholders as well as civil society in their deliberations over development priorities.

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