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Do voluntary corporate actions improve cumulative effects assessment? Mining companies' performance on Sami lands

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Abstract

Cumulative effects assessment (CEA) remains an Achilles heel in the licensing of mining projects on indigenous lands globally, but especially in the European North. Yet, rather than legislating on indigenous rights and CEA failures, governments tend to rely on companies to mitigate cumulative impacts through new corporate social responsibility actions. This paper considers if these voluntary actions improve companies' CEA performance and so provide grounds for indigenous communities and decision makers to trust the industry more. Findings are presented from a systematic review of corporate impact assessments for 56 mining concession permit applications on Sami lands in Sweden. We show how companies that adopt additional voluntary measures provide somewhat richer assessments. Overall, however, the performance remains poor also for 'frontrunners', with persistent lack of clarity on methods and limited analysis of consequences, social and cultural impacts and interactions with other (past, present or future) projects. We conclude that progress in voluntary actions in regard to assessing cumulative impacts has only led to cosmetic improvements in CEA performance. We therefore argue for stronger regulatory role of government and recognition of the right of indigenous communities to lead or co-manage impact assessments on their own lands.

Keywords: cumulative effects; corporate social responsibility; mining; Sami; Sweden.

1. INTRODUCTION

It is well established that cumulative effects assessment (CEA) remains an Achilles heel of most impact assessment regimes. As has been amply reviewed elsewhere (e.g. Bidstrup et al., 2016; Franks et al., 2010; MacDonald, 2000; Noble and Hanna, 2015), legislators have since the 1980s in many jurisdictions posed general CEA requirements on developers and licensing agencies. This means proponents should not only consider project-specific impacts but also the aggregate and long-term consequences arising from the proposed project's interaction with other current and future land-uses. CEA is especially critical for mining operations as they tend to have far reaching and irreversible effects on both the environment and the rights of local and indigenous communities (Tollefson and Wipond, 1998).

As summarized recently in this journal by Atlin and Gibson (2017, p. 38) 'the most realistic solution entails moving away from full reliance on project-by-project based assessment towards integrated regional, sustainability-based forms of planning'. Similarly, it is understood that the scope of project-level assessments typically is too narrow and that developers rarely have the interest in and/or capacity to undertake CEA (ibid). Instead, governments must take responsibility for regional-level planning. Some advances have been made in this regard, e.g. in North America. In Alaska, preparing a Master Environmental Impact Statement and tiering down to project-level assessments is quite common and the Government of the Province of Alberta has started to require Regional Strategic Environmental Assessments (Koivurova and Lesser, 2016).

Yet, most governments, including in the European North, have been either unable or unwilling to step up regulation of mining industries to enforce otherwise vague CEA requirements. In fact, the preference has been for overlaying (dysfunctional) project-level and corporate-led assessment procedures with new 'technologies' (Peterson St-Laurent and Billon, 2015). These are delivered as corporate social responsibility (CSR) actions aimed at obtaining a so-called social license to operate (SLO) (Owen and Kemp, 2013). The expectation of government that companies should bear the responsibility for CEA conveniently fits industry's own pushing back against further regulation, forfeiting CEA practice to the muddy waters of industry discourse around self-regulation.

We argue there are several problems with this. Generally, it is well known that business, due to its self-interest, cannot be assumed to act ethically (Blowfield, 2005). In the specific context of CEA, it is moreover prone to distract from the underlying issue at hand: the proliferation of new CSR-based governance instruments is primarily concerned with the 'social' rather than 'regulatory' license, i.e. obtaining legitimacy for and managing benefits from projects to ensure project approval and implementation. In contrast, CEA, as originally conceived, revolves around ex-ante determinations of significance and the question whether proposed projects should at all be given a regulatory license.

To be sure, much debate has been had over whether CSR-based measures are fit for purpose. The debate, in this journal, between Harvey (2014) and Kemp and Owen (2016) is a case in point. The core of the contention here is about the balance between companies' need to prompt own internal behavioral change ('in-reach') versus what can be achieved through external communication ('out-reach'). This discussion hinges on deeper and continuing contestation over whether CSR-efforts are born out of self-interest or genuine commitments to sustainability. Notwithstanding, one may be tempted to subscribe to the view of Pedersen (2006, p. 156) that what matters most is if voluntary efforts of companies have the espoused effects: 'as long as the social and environmental initiatives generate the desired outcomes, the company's motives for addressing CSR are of little interest.'

But, if taking this view, how does one judge whether such intended outcomes arise? Here, the literature on social license and CSR in the mining industry, unfortunately, provides few answers. As a case in point, Tarras-Wahlberg et al. (2017, p. 7) state that 'it is difficult to ascertain whether a mine operator has a SLO… it is not a signed document nor it is something that can be readily measured′. This view alludes to the way meaning has eroded in mainstream discourses on natural resource governance, among other due to post-modern tendencies that reject the possibility for research to judge the substantive or moral outcomes of social activities. In the words of Svend Brinkmann (2006, p. 96), it testifies to how scholars subscribe to an experience culture 'where the worth of things and situations is often determined by their ability to produce pleasurable or thrilling experiences in individuals'.

We argue, in contrast, that voluntary efforts of mining companies have little meaning if we cannot transparently and collectively judge their concrete effect. That is, the way they contribute to shaping our common (intersubjective) reality (e.g. Merleau-Ponty, 2002). In our present case, this means that voluntary corporate actions towards CEA become meaningful only if they provide actionable knowledge on the sustainability of specific mining operations and what ought to be done. Hence, what needs to be examined is if CSR-based efforts improve companies' CEA performance in the context of the licensing of new projects. Furthermore, whether such actions provide more substantive grounds for local and indigenous communities (and government decision makers) to trust the sector and issue licenses, whether social or regulatory in nature.

In this paper, we pursue this inquiry through a review of corporate impact assessments for mining concession permits on Sami lands in Sweden. The focus is on the extent to which they undertake CEA and hence provide grounds for investing hope in better voluntary delivery from project-level and corporate-owned impact assessment on indigenous lands. The specific question we ask is: How do mining companies (or their consultants) consider cumulative effects of proposed operations on Sami reindeer herding in their assessments? To our knowledge, this is the first systematic review of CEA content in corporate assessments on indigenous lands in Sweden, and internationally.

2. BACKGROUND: MINING AND IMPACT ASSESSMENT IN SWEDEN

Sweden is the largest mining economy in the European Union (EU) and has, with determined efforts from the government, seen the creation of a favorable mining policy regime with rapid expansion in recent years. During the period 2006-2015 the Swedish share of iron ore production for the EU28 countries has consistently been in the range of 88-91%. In the same period, production volumes of non-ferrous ores have increased from approximately 25 million tons in 2005 to 42,8 million tons in 2015 (Geological Survey of Sweden, 2016). Concurrently, investments in mineral exploration has also been on the rise. Exploration costs has increased, from just below 200 million SEK in 2000 to above 600 million SEK in 2015, with two sharp increases in 2007 and 2011, where exploration costs exceeded 750 million SEK (value in todays' currency) (ibid).

Most of mining activities in Sweden are located on Sami lands, with about 98.5% of the value of the mineral extraction situated on traditional Sami territories (Lawrence and Åhrén, 2016). The Sami is the indigenous people in Sweden, Norway, Finland and Russia and reindeer herding comprises a fundamental part of Sami culture and livelihood, traditionally exercised on close to 55% of Sweden's land area. However, due to the cumulative effects from various impediments and disturbances, among other from mining and its infrastructure, the effective area available for herding is today much smaller. Sami reindeer herding communities (sameby in Swedish, henceforth 'Sami community') form the geographical and administrative units for practicing reindeer herding and related fishing and hunting.

Their organizational form remains a hybrid of colonial attempts to govern reindeer herding, combined with Sami social and cultural practices (Lawrence and Åhrén, 2016).[1] Each community typically consists of several winter groups (siida), i.e. one or several herding families connected through family ties and traditional use of the lands. Their rights comprise of civil property rights, over and above the general cultural rights to self-determination held by the Sami as a collective (Allard, 2015).

Sweden has received repeated critique from United Nations and EU bodies for non-recognition of Sami rights in land use planning and permitting (e.g. UNHRC, 2016). The Minerals Act and the government's unequivocal support for the mining industry, accompanied by an unwillingness to strengthen social and environmental statutory protections on CEA, has generated substantial criticism from many groups in society (e.g. Haikola and Anshelm, 2016). Escalating conflicts between mining companies and Sami communities reflect the way mining drives a continued 'internal colonization' of Sami lands and a general disregard for Sami rights in Sweden, including a lack of formal mechanisms for consent or revenue sharing (Lawrence and Åhrén, 2016). Mining also interacts with growing pressures from other land uses such as wind power and infrastructure to create an increasingly fragmented landscape to the detriment of the reindeer herds and herders (Kivinen et al., 2012; Larsen et al., 2016).

As defined in the Environmental Code (SFS1998:808) and the Minerals Act (SFS1991:45), the developer is solely responsible for (i.e. 'owns') the impact assessment process (*miljökonsekvensbeskrivning*). While the European Union directives (85/337/EEC and 2001/42/EC) pose an obligation of CEA in national law there have in Sweden been few mandatory requirements on companies to assess cumulative effects, nor does the legal regime require specific attention to social or cultural impacts. The revisions to the Environmental Code that came into force 1 January 2018 included amendments in chapter 6 (on environmental impact assessment) to broaden the definition of impacts to include cumulative effects (see also prop. 2016/17:200). However, no changes were made to the power relations underlying the assessment process, i.e. the corporate control *per se*.

Rather than ensuring the assessment of cumulative impacts, the current permitting processes, in fact, *hinder* the assessment of cumulative impacts, by 'slicing-and-dicing' the assessment of mining developments into separate parts (Lawrence and Larsen, 2017). The permit process for mining consists of two phases, the first being the application for a mining concession permit (*bearbetningskoncession*) and the second the full environmental permit (*miljötillstånd*). It is at the first stage of permitting that impacts on Sami reindeer herding is reviewed by the mandated permitting authority, the Mineral Inspectorate. However, in this phase no consultation is required with Sami communities and government authorities' review has historically been limited to the actual mine site. Impacts from surrounding infrastructure are only being assessed in the second phase, i.e. *after* the impacts of Sami communities have already been dealt with (e.g. Darpö, 2016).[2] This discrimination against Sami rights in permitting and impact assessments testifies to the fact that Sweden has yet been unable, due to a host of political and economic interests in natural resources, to substantially confront its colonial past and implement rights-based policy commitments in sectoral legislation.

[1] Built on the colonial legacy of state attempts at controlling Sami land use, following the Reindeer Herding Act (SFS1971:437), these communities are the rights-holding subjects and their members have recognized use rights, including for hunting and fishing. No specific rights to land or resources are afforded to non-reindeer herding Sami or those not members of a Sami community.

[2] A recent ruling by the Swedish Supreme Administrative Court has, however, challenged this separation and the scope of assessments may therefore change in the future (Case number 2047-14).

Still, various indications exist that both government and corporate actors are, in fact, aware of the risks associated with the inability to prevent cumulative effects. Already in the mid-1950s, and possibly even earlier, concerns with cumulative effects were debated among Sami communities and competing land users, such as forestry (Skuncke, 1955.). Prompted by the mounting protests against encroachments on Sami lands, mining companies have acknowledged shortfalls in CEA and the need to improve practice (County Administrative Board of Norrbotten and SWECO, 2016). Civil servants have also increasingly started to raise concerns, and many explain that they are today keenly aware of the lack of adequate documentation and evidence as regards cumulative effects in the assessment provided by the project promoter (Larsen et al., 2017).

For developers concerned with improving their CEA practice there are several methodologies that could potentially be adopted. The Swedish Sami Association has issued guidance on how to undertake social impact assessment for projects impacting Sami reindeer herding (Svonni, 2010). The research community has also developed methods to estimate so-called 'disturbance zones'. These denote a geographical zone within which reindeer herds are disturbed by noise and human activity caused by various modes of developments (e.g. road traffic, power lines, wind power, and mining) (Skarin and Åhman, 2014). For mining operations, disturbance zones have been estimated at up to 14 km (Boulanger et al., 2012). An increasing number of Sami communities are making use of disturbance zone estimates, including through spatial mapping, when they seek to resist mining projects.[3] However, the mining industry itself has been generally opposed to quantifying disturbance zones, rejecting the science behind and waiting for court cases to set precedent (Lawrence and Larsen, 2017:1171)

Recent years have seen some changes in corporate assessment practice, though. This may, at least in part, be taken to reflect a corporate response to growing opposition from Sami communities and that communities as well as government authorities gradually place higher demands on companies. Two developments are visible in terms of voluntary corporate measures. First, the use of so-called reindeer herding analyses (*rennäringsanalyser*). Until rather recently, assessments of impacts on reindeer herding were conducted as a desktop exercise resulting in a few paragraphs, at the most. Now, it is more common for companies to provide a separate chapter, section or annex on the impacts on Sami communities. Second, while companies are not obliged to communicate with Sami communities during the application for a mining concession permit, this is now also more commonly done. While desktop studies persist, such communication may be considered a prerequisite for producing a section in the assessment devoted specifically to reindeer herding (see also Lawrence and Larsen, 2017).

3. METHOD

This study investigated the extent to which mining companies (or their consultants) have considered cumulative effects of proposed operations on Sami reindeer herding in their impact assessments. The approach adopted was that of a systematic review style methodology inspired by earlier applications in sustainability science (see review in Zou et al., 2010). Key principles are i) the use of an a priori protocol of the planned methods for the review; ii) transparency in the design, analysis and reporting; and, iii) comprehensiveness in the sample size, within the appropriate scope and scale of the study context (Haddaway et al., 2015). We examined the quality of the assessments in terms of their methodologies and the type of information they provided, as could be discerned from the available assessment reports. We do not comment on the 'correctness' of the substantial findings, since this

[3] See for instance the 2014 statement prepared by the Sami community Sirges in 2016 in response to the proposed mine in Gállok/Kallak.

would require retrospective comparison with observed impacts and/or counter-factual project-specific studies (few such studies yet exist).

The material for the review comprised corporate assessment reports for the first stage of permitting, namely the application for mining concession permits. When we initiated the study (March 2016), the Mineral Inspectorate informed us that they altogether had issued 111 permits for concessions on Sami reindeer herding lands and that additionally 11 applications were being assessed, under various phases of government or court review and/or revision by the developer. Not all issued permits are, however, based on a full impact assessment, since prior to the 1998 Environmental Code IA permits could be obtained through less stringent review procedures (see further in Tarras-Wahlberg, 2014). Some mining concessions have also subsequently been withdrawn. In addition, for unknown reasons, we were unable to access assessments from two pending applications.

Altogether, the material for our review included the assessments from 56 concession permit applications on Sami reindeer herding lands that could be provided by the Mineral Inspectorate upon our request – hence making this study very comprehensive. The documents covered 47 granted applications for mining concession permits and 9 pending mining applications, produced in the period from 1999 up until 2016. The proposed mining sites are in the northernmost counties of Norrbotten, Västerbotten and Jämtland, as well as one site each in Västernorrland and Dalarna (Fig. 1). In some cases, companies had appended the same assessment to several (either two or three) related concession permit applications. Given our interest in the function of the assessments for governance, in these cases, results from the same assessment report were included with the entry of each unique permit application in the database.

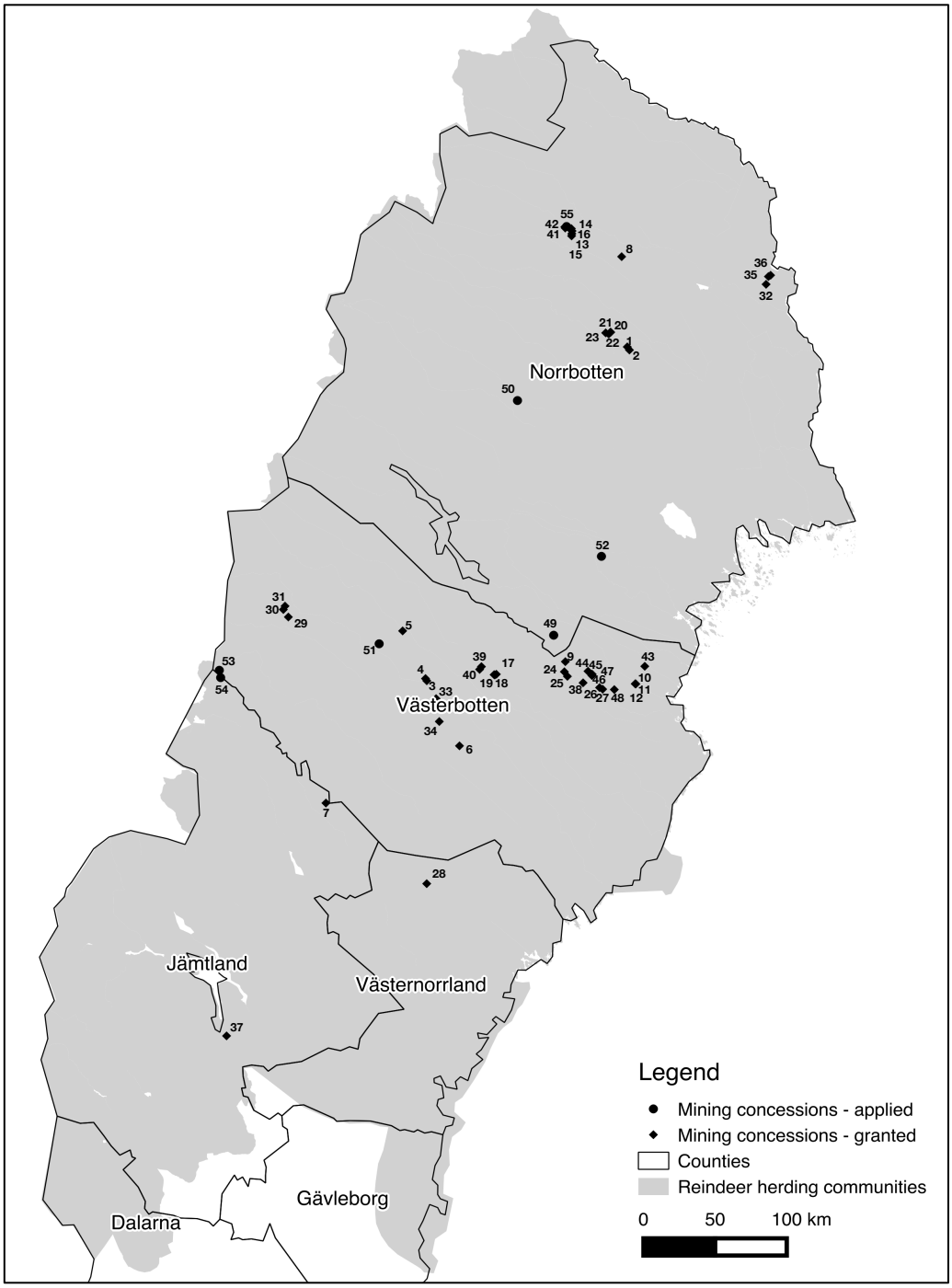
[Fig. 1 uploaded as separate file]

Fig. 1. Map of the mining projects included in this analysis. Localizations are approximate, based on data from Geological Survey of Sweden (2017). One mining concession permit, Rakkurijärvi K nr 1, located south west of the Kiirunavaara cluster is missing in the map (it does not feature in the GIS material supplied by the Geological Survey of Sweden, indicating that the application has been either withdrawn or rejected).

As will become clear further below, we quickly realized that the assessment reports generally exhibited limited information on method and had very varying narrative structures. We thus realised that enforcing a rigid analytical framework would exclude much relevant information from the diverse material. Instead, we designed a simple analytical lens that posed open-ended questions with a minimum of prejudice as to what information would be present in the reports, to best capture the variation. This framework was inspired in part by generic guidance, such as issued by the International Association of Impact Assessment, and in part by the contextual understanding of assessment practice in the Swedish mining industry when operating on Sami lands (see section 2 above).

This framework distinguishes three categories of information, namely i) declaration of method, ii) identification of impacts, and iii) analysis of consequences (Fig. 2). These questions do not only address how the assessment document treats CEA *per se* but also direct and indirect impacts, since this broad scope was a prerequisite for a discussion on CEA performance, specifically. Among other, knowledge of direct and indirect impacts of a project will influence the understanding also of its cumulative effects.

The data retrieved from the assessment reports were narrative statements in the documents with content relevant to the questions posed. Statements were recorded in a common database (excel),



1	Aitik K nr 2	12	Häbbersfors K nr 7	23	Malmberget K nr 6	34	Svartlidengruvan K nr	45	Älgträsk K nr 1
2	Aitik K nr 4	13	Kiirunavaara K nr	24	Maurliden Östra K nr	35	Tapuli K nr 1	46	Älgträsk K nr 2
3	Barsele K nr 1	14	Kiirunavaara K nr	25	Norrliden K nr 1	36	Tapuli K nr 2	47	Älgträsk K nr 3
4	Barsele K nr 2	15	Kiirunavaara K nr	26	Petiknäs K nr 3	37	Tjärnberget K nr 1	48	Östra Åkulla K nr
5	Ersmarksberget K nr 2	16	Kiirunavaara K nr	27	Renström K nr 2	38	Udden Norra K nr 1	49	Éva K nr 1
6	Fäboliden K nr 1	17	Kristineberg K nr 3	28	Rockliden K nr 1	39	Vargbäcken K nr 1	50	Kallak K nr 1
7	Granberget K nr 1	18	Kristineberg K nr 4	29	Rönnbäcken K nr 1	40	Vindelgransele K nr 1	51	Kyrkberget K nr 1
8	Gruvberget K nr 2	19	Kristineberg K nr 5	30	Rönnbäcken K nr 2	41	Viscaria K nr 3	52	Laver K nr 1
9	Holmtjärn K nr 2	20	Malmberget K nr 2	31	Rönnbäcken K nr 3	42	Viscaria K nr 4	53	Levi K nr 1
10	Häbbersfors K nr 5	21	Malmberget K nr 4	32	Sahavaara K nr 1	43	Åkerberg K nr 1	54	Stekenjokk K nr 1
11	Häbbersfors K nr 6	22	Malmberget K nr 5	33	Stortjärnhobben K nr	44	Älgliden K nr 2	55	Viscaria K nr 7

providing both presence/absence data for each question and, when present, a possibility to analyse qualitative content. The data was subsequently coded and clustered into emerging categories that we report below (section 4). The desktop review was conducted by a research assistant (third author) under supervision of the principal investigator (first author). Initial quality assurance took place through joint testing and refining of the analytical framework in the analysis of one of the assessment reports. The research assistant then conducted the full review of the whole set of documents and the database was reviewed and analyzed by the first and second author.

Following our research question, in addition to the review of all assessments in the sample, we also explored whether those reports produced through additional, voluntary actions showcased improvements in CEA performance. For this comparison, we relied on the combined presence of two simple proxies for voluntary actions to identify 'frontrunners' in the sample. First, that the company (or its consultant) reported that it had communicated with potentially affected Sami communities during the process of preparing the assessment. Communication was defined in the broadest possible sense, including references to, among other, 'consultations', 'interviews' and 'information meetings'.[4] Second, that the document contained a specific section or chapter treating the impacts on Sami communities. With this filter, we selected a sub-sample of 23 permit applications that we analysed further. As noted (see section 2 above), none of these two actions are required by law in the application for a concession permit and thus represent voluntary steps taken by some mining companies as means of generating, potentially, more robust assessments and obtaining legitimacy from Sami communities, licensing authorities and the larger public.

Fig. 2.

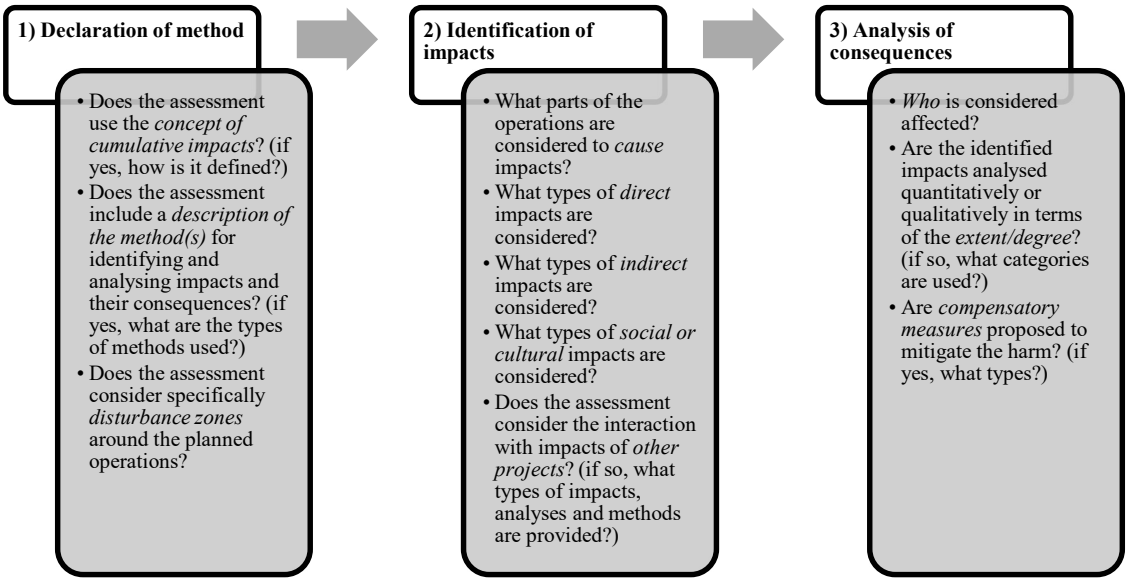


Fig. 2. Analytical framework for the review of corporate impact assessments.

4. RESULTS

4.1 Declaration of method

[4] As we return to below, good practice internationally comprises of involving indigenous communities *throughout* the assessment process, often in a co-management role or even leading the assessments concerning their own lands and livelihoods (e.g. Larsen, 2017). This open-ended inquiry in the study was intended to capture current Swedish practice that, hence, generally is much below international standards.

The concept of cumulative effects (*kumulativa effekter*) appeared in 23 (41%) of the assessments. The concept is employed in varied ways and no references are made to legal sources or professional guidance documents to activate standard definitions. A description of methods by which claims regarding impacts on Sami communities have been generated are provided in 27 (48%) of the reports, but never extending beyond a few sentences. In 12 of the assessments, the primary or only stated method is 'consultation' or 'discussion' with Sami communities. A total of 25 assessments cited communication with Sami communities. Other methods listed were 'literature studies' and 'analysis of data provided by the county administrative boards' (the public agency which holds part of the government's competence in the regulation of reindeer herding; since 2007 the Sami Parliament took over some of the administrative responsibility). In such cases, no further information is provided as to how data was identified, retrieved or analyzed. Only one of assessment states whether the community has consented to the results of the analysis (in this case, Aitik K nr. 4, it is a reference to an agreement to move a reindeer fence).

The existence of a potential disturbance zone around the planned mine site is acknowledged in general terms in 20 (36%) of the assessments, but only four of these provided an estimate of the extent of this area. These were all relatively recent reports, which may suggest some degree of improvement in practice in this regard over time (Kallak, 2013; Levi, 2011; Stekenjokk, 2011; Stortjärnshobben, 2006). Estimates are here varyingly provided in terms of the affected area (hectares), the width of the disturbance zone (km/m), or the noise level (decibel). No use is made of published research on disturbance zones, nor is it anywhere explained how estimates are obtained. The most common reference to a potential disturbance zone was in vague formulations such as the following (observed, with minor variation, in 12 of the assessment reports): 'within the vicinity of the industrial area the access to pasture will be limited since noise and motorized traffic will cause a disturbance to the grazing of the reindeers'.

4.2 Identification of impacts

The identification of impacts is where the assessments generally provide most information. This contrasts with the limited information on method (section 4.1 above) and, as we shall outline below, also on analysis of consequences (section 4.3). Many of the statements are, however, general in nature, e.g. with 23 of the assessments ascribing one or several impacts to unspecified 'mining activities' (Fig. 3a-d). Emphasis is on reindeer herding and little if any mention is made of other impacts on Sami land use and livelihoods (e.g. fishing, hunting) or cultural and spiritual elements. Interrelatedly, focus is on reindeer herding as a 'business activity', rarely social and cultural ways of life, and never Sami rights *per se*. Only 12 (21%) of the assessments considered any social and/or cultural impact(s) on Sami communities. In these, most descriptions are general in character, e.g. referring to risk of 'degradation in Sami culture' or noting that bio-physical impacts or reductions in reindeer herds would also be 'mentally stressful' for the herders.

The potential for cumulative effects to arise from interaction with other past, present, or future projects is mentioned briefly in 21 (38%) of the assessments. These documents variously mention one or several other activities near the proposed mining site, including other mining activities, forestry, wind power, infrastructure, tourism, or the role of large predators. However, often, statements are vague, and the nature and extent of these cumulative effects are not qualified. For instance, the assessment supporting the proposal for what would become Sweden's largest open pit copper mine (Boliden's Laver mine, concession application for Laver K1), in its section on cumulative effects, only devotes two sentences to potential interaction with the impacts from the nearby wind power project Markbygden, set to become one of Europe's largest wind farms with 1101 wind turbines.

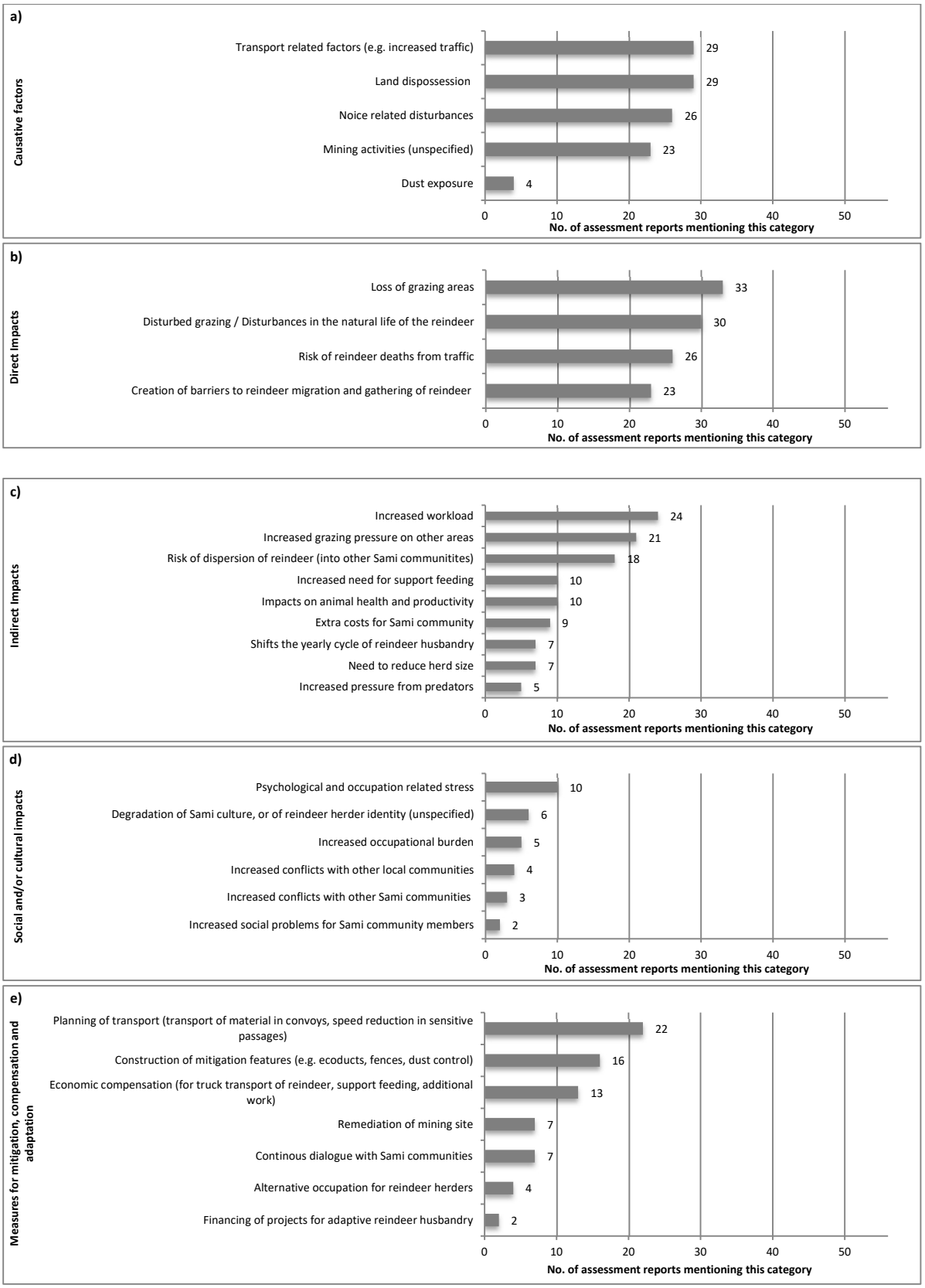


Fig. 3. Summary of the information provided by the assessments (causative factors, direct and indirect impacts and compensatory measures). Note that the categories listed reflect the language used in the assessment reports.

4.3 Analysis of consequences

Interestingly, the assessments commonly failed to indicate *who* would be potentially affected. All reports mention some kinds of direct or indirect impacts but only 20 assessments (36%) indicated who would be impacted. Of the 12 reports that mentioned social and cultural impacts, seven (58%) indicated who they were talking about. However, when offering such information, impacts are as a rule, attributed to the whole Sami community; this is the case for all claims regarding direct and indirect impacts and for 10 (91%) of the 12 reports mentioning social and cultural impacts. Only one assessment report identifies a specific winter group to be impacted (in a description of social and cultural impacts in the application for the project Kyrkberget K nr 1). None provide detail to the level of individual families, herders and as regards their property rights. Moreover, the assessments provide limited or no qualitative or quantitative analysis of the listed impacts (e.g. regarding the extent, degree or severity of impacts). Only in 11 of the assessments (20%), some qualification was provided for direct impacts (e.g. estimates of the loss of pasture in terms of hectares or a radius of the disturbance zone from the mining, in meters) and only two (4%) of the assessments have instances where they qualify the extent of indirect impacts.

Despite thus generally providing limited information on the consequences of proposed developments for Sami communities, 34 of the assessments (61%) suggested mitigation and compensation measures to ensure that the harm would not be significant (Fig. 3e). These measures comprised of adapting the companies' transports of mined ore and various kinds of fencing for the reindeer herds, but also economic compensation for feeding and other forms of financial compensation to the communities. Some of these compensatory measures are clearly controversial from an indigenous rights perspective, for instance the suggested use of 'alternative occupation' for reindeer herders, suggesting that reindeer herding could be replaced with other non-traditional activities without this being considered a significant impact (see also Lawrence and Larsen, 2017).

4.4 Potential improvements in CEA performance due to additional voluntary actions

Finally, the question is if voluntary actions resulted in better performance in the provision of CEA relevant information, compared to those companies that did not pursue voluntary actions. The selection of 'frontrunners' according to the two proxies of voluntary communication meetings and dedicated sections/chapters on reindeer herding yielded a sub-sample of 23 assessments. Comparing with the results outlined above from the whole sample, it is evident (Table 1) that the frontrunners showcase better performance in some categories: almost all these assessments i) employ the concept of cumulative effects (87%), note the presence of other projects near the proposed mining sites (83%), and mention direct or indirect effects of these other projects (83%).

At face value, these results suggest that assessments conducted with additional, voluntary measures – and by companies/consultants with a commitment to go beyond the minimum – do indeed offer some degree of improvement in CEA. However, considering the absence of information about the actual degree or extent of these impact(s) and methods for making such estimates the performance, overall, remains poor. The results, hence, mirror the observations above for the whole sample of 56 assessments: even when conducted with additional voluntary actions, assessments offer only somewhat richer descriptions but still lack clarity in methods and analysis of potential consequences.

Table 1. CEA performance in assessments showcasing additional, voluntary actions.

([a b c d]: denotes permit applications associated with the same, larger project and covered by the same assessment report).

Project name	Uses the concept of cumulative effects?	Considers presence of other projects?	Mentions direct or indirect effects of other projects?	Considers how effects of own and other projects may interact?	Estimates the degree / extent of these impact(s)?	Describes how such estimates are derived?
Norrliden K nr 1	Yes	Yes	Yes	Yes	**No**	**No**
Granberget K nr 1	Yes	Yes	Yes	Yes	**No**	**No**
Kallak K nr 1	Yes	Yes	Yes	Yes	**No**	**No**
Maurliden Östra Knr 1	Yes	Yes	Yes	Yes	**No**	**No**
Levi K nr 1[a]	Yes	Yes	Yes	Yes	**No**	**No**
Stekenjokk K nr 1[a]	Yes	Yes	Yes	Yes	**No**	**No**
Tapuli K nr 1[b]	Yes	Yes	Yes	Yes	**No**	**No**
Tapuli K nr 2[b]	Yes	Yes	Yes	Yes	**No**	**No**
Viscaria K nr 3[c]	Yes	Yes	Yes	Yes	**No**	**No**
Viscaria K nr 4[c]	Yes	Yes	Yes	Yes	**No**	**No**
Viscaria K nr 7[c]	Yes	Yes	Yes	Yes	**No**	**No**
Älgträsk K nr 2	Yes	Yes	Yes	Yes	**No**	**No**
Kyrkberget K nr 1	Yes	Yes	Yes	**No**	**No**	**No**
Laver K nr 1	Yes	Yes	Yes	**No**	**No**	**No**
Rönnbäcken K nr 1[d]	Yes	Yes	Yes	**No**	**No**	**No**
Rönnbäcken K nr 2[d]	Yes	Yes	Yes	**No**	**No**	**No**
Rönnbäcken K nr 3[d]	Yes	Yes	Yes	**No**	**No**	**No**
Älgträsk K nr 3	Yes	Yes	Yes	**No**	**No**	**No**
Östra Åkulla K nr 2	Yes	Yes	Yes	**No**	**No**	**No**
Eva K nr 1	Yes	**No**	**No**	**No**	**No**	**No**
Aitik K nr 4	**No**	**No**	**No**	**No**	**No**	**No**
Holmtjärn K nr 2	**No**	**No**	**No**	**No**	**No**	**No**
Vargbäcken K nr 1	**No**	**No**	**No**	**No**	**No**	**No**
Fraction of total	87%	83%	83%	52%	0%	0%

5. DISCUSSION AND CONCLUSION

As witnessed above, the central argument to arise from our research is that progress in voluntary actions of mining companies operating on Sami lands has only led to minor – and arguably rather cosmetic – improvements in CEA performance. Some descriptions convey a picture of community participation and offer, at face value, more information and use of appropriate terminology. However, the substantial content of the assessment reports, as concerns CEA, remains limited and, arguably, will often be insufficient to serve as basis for a licensing decision by a public agency.

To be sure, the results point to some variation in the performance of mining companies and their consultants in accounting for cumulative impacts on Sami reindeer herding communities. Those companies that adopted additional, voluntary measures, in fact, scored somewhat better in some categories than the average company doing the minimum. This suggests that companies can indeed deliver some improvements in their project-level assessments as concerns CEA, when communicating with the affected Sami communities, investing time in producing a specific chapter on these impacts and – perhaps most importantly – generally being more committed to understand the reality of reindeer herders. Overall, however, the performance must be said to be poor also among 'frontrunners' – as witnessed inter alia in the lack of clarity on methods and limited analysis of consequences. For instance, the uptake of new methods, such as disturbance zones, was low or non-existent. While additional effort from the companies and consultants indeed prompted somewhat richer descriptions there is still a long way to delivering a substantial assessment with actual analyses, supported by method and evidence.

Considerable gaps were observed in the limited attention to social and cultural impacts, interactions with other (past, present or future) projects, and the expected consequences for affected Sami communities. Moreover, reports often entirely missed identifying who would be impacted and emphasis was, in the case information was provided, only on the directly affected Sami community as a collective and reindeer herding defined narrowly as a business activity. This common lack of differentiation of impacts, even to the level of winter groups, and missing appreciation of broader Sami land uses and cultural significance, arguably undermines the possibility for robust CEA. These gaps are problematic for several reasons, but notably it does not inform permit authorities of how cultural and property rights are affected. At best, statements on cultural impacts were simplistic or ambiguous, evoking notions of the 'degradation' of Sami culture prone to perpetuate the colonial objectification and essentializing of the indigenous 'other' (e.g. Smith, 2012).

Lacking substantive analyses of expected consequences there is an evident risk of tokenism. Assessments may, then, convey the impression of developers having heard the concerns of the Sami communities, yet without taking Sami knowledge into account when drawing conclusions. As discussed by Lawrence and Larsen (2017), in a study of Boliden's proposed Laver mine, this dynamic is prone to provoke a disconnect between the Sami communities' description of their land use and the expected impacts (as we saw, often generated through communication with the community) and the subsequent interpretation of this information when conclusions are drawn (only by the developer/consultant). Studies of actual assessment content, as offered in this paper, are required to discern such discrepancies. This is especially so when mining companies are quick to make claims to advanced assessment methods and amicable relations with Sami communities (see e.g. statements from Boliden in Thorén Hedin and Ranängen (2017)), and yet the experiences of Sami communities suggest otherwise (Lawrence and Larsen, 2017).

Indeed, it is well known that developers tend to do little more than what is needed to meet the minimum requirements of regulators when obtaining permits (Kågström and Richardson, 2015; Tarras-Wahlberg, 2014). When it comes to indigenous and human rights expectations, mining companies have generally been slow in making formal commitments and, when these exist, exhibit poor performance in implementation (Hill and Lillywhite, 2015). Based on our evidence, we may nuance this understanding further, namely that companies, in fact, *may* be willing to take additional, voluntary steps (close to half of the sample of companies in this study did so) but that even these efforts do little to support prevention or governance of cumulative effects. Indeed, this suggests that voluntary actions may be attractive to developers only so long as these do not challenge the opportunity for the company to obtain a license. In this vein, Andrew Barry's work is helpful, suggesting how a specialized technical practice, such as impact assessment, can be 'profoundly anti-political in its effect' (Barry, 2002, p. 270). This is because it contains the wider political space of disagreement (i.e. by not disclosing or emphasizing potentially contentious information on cumulative effects).

The crux of the problem addressed in this paper is the assumption that CEA governance can be strengthened simply through the addition of CRS-based actions, while ignoring deeper, structural and regulatory failures. That is, governments and developers argue, CEA improvements will flow from the adoption of new assessment tools and better modes of communication with Sami communities (e.g. Pedersen, 2006; Peterson St-Laurent and Billon, 2015). This assumption is, in a Nordic context, closely aligned with a discourse that assumes that Sami communities can co-exist with mining operations without any significant impacts (Löf, 2014). In this view, our findings, although novel, are not specific to the mining sector but bear witness to a general political trend where Sami rights issues are fragmented, depoliticized and/or localized to arenas wherein Sami communities and herders have limited or no real influence (e.g. Darpö, 2016; Lawrence and Åhrén, 2016; Larsen et al., 2017). Our study suggests, to the contrary, that corporate-led assessments are unlikely to suffice in delivering sufficient CEA performance. Moreover, the findings reported in this study also demonstrates a problem of logic: how do companies know what mitigation measures to employ, and if they will work, if the impacts are not properly understood in the first place?

Progress in the spread and adoption of indigenous rights norms, notably with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and International Labor Organization's Convention 169 on Indigenous and Tribal Peoples in Independent Countries (ILO-169), have clarified the right of indigenous peoples to self-determination and significant degrees of participation and influence in all decision making affecting their lands (Åhrén, 2016). As part of this movement, acceptance is growing that indigenous communities must be involved in the governance of all phases of impact assessment, including CEA, as means of generating the evidence base for obtaining their free prior and informed consent (e.g. Canadian Environmental Assessment Agency, 2017). Our study supports such arguments, namely that community-owned or co-managed assessments may be the only viable paths towards robust CEA on indigenous lands (see also Larsen, 2017).

In conclusion, long-term solutions to CEA governance failures clearly require a fundamental rethinking of the influence of indigenous communities in impact assessments as well as in wider land use planning and decision making. Following indigenous rights norms, these reforms must be based on nation-to-nation negotiations between indigenous peoples and states, within which impact assessment is but one component. Promoting CSR-based actions within an inherently problematic paradigm of corporate-owned impact assessment is, as we have seen, insufficient to address persistent CEA failures. It is also much below what is increasingly to be expected in terms of impact assessment on indigenous lands. At best, such efforts imbibe pale color into assessment reports but do little to substantially

strengthen corporate CEA performance. We suggest that it is time for governments and other actors in the European North to abandon hopes in corporate-led assessments, revitalize demands for a stronger regulatory role of government in CEA, and recognize the right of indigenous communities to lead or at least co-manage impact assessments on their own lands – when they find this relevant as part of larger consent procedures.

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