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Plan, Do, Check, Act: The need for independent audit of the internal responsibility system in occupational health and safety

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ABSTRACT

This research explores the use of regulatory non-compliance as an additional measure of the health of the internal responsibility system. Using an analysis of orders issued pursuant to the Occupational Health and Safety Act in the Ontario mining sector over a 10 year period this paper argues that observed non-compliance shows that even with sophisticated sectors in developed jurisdictions third party audit with sanction powers is needed. Additionally, this analysis provides a leading indicator approach that can be used by regulators or those who are regulated to improve health and safety outcomes by complementing other techniques to gauge the strength or success of internal responsibility systems that are based on workplace questionnaires.

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1. Introduction

We find ourselves living in an increasingly globalized world where capital, information, and trade are moving around the world at an unprecedented pace. It is a world that in many ways seems to be shrinking. While the nation state still plays an important role, borders seem to be blurring and losing some of their relevance. Increasing globalization has major implications for the working conditions of workers worldwide – workers who are extracting resources, growing food, and producing goods for a global market. Working conditions in the Westphalian model are the responsibility of the nation state. But what happens when the nation state is unable to effectively perform this role, either from lack of will or lack of resources and capacity?

Beyond laws and regulations, there exists a range of other tools that can be employed to achieve global equity and sustainability policy objectives. Some of these tools are based on the need to influence change where command and control approaches cannot be implemented. Others are based on insights flowing from behavioural economics and compliance psychology. In an increasingly globalized world public regulators do not always have the capacity to ensure labour standards are met. One approach to fill this regulatory gap is self-regulation by the private sector, but this paper argues that self-regulation without external audit with sanction powers is not enough to ensure societal goals are met.

This paper will explore the following question: Accepting that the legal duties for ensuring occupational health and safety outcomes fall on the workplace parties such as employers, supervisors and to a lesser extent workers is there a need for an independent third party audit of such an internal responsibility system (IRS)? In addition this paper explores the idea of using analysis of regulatory orders as leading indicator to inform the work of both regulators and the regulated community in concert with other leading indicators such as surveys and lagging indicators such as injury, illness and fatality rates.

To explore these questions we will do an analysis of occupational health and safety orders issued by the Ontario Ministry of Labour in the mining sector over a 10 year period in order to determine whether there is value in a regulator being a check on the IRS. This paper will show that such an analysis complements other techniques to gauge the strength or success of internal responsibility systems that are based on workplace questionnaires.

1.1. Globalization, work and challenges of global governance

Labour standards are a small subset of human rights, which themselves are a small subset of the much larger class of social objects known as norms and values. Norms and values are often used interchangeably but they do express slightly different concepts. A norm is "a standard or pattern of social behaviour that is

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accepted in or expected of a group" (OED, 2014). In contrast values are "the principles or moral standards held by a person or social group; the generally accepted or personally held judgement of what is valuable and important in life" (OED, 2014). Therefore we can see that while norms and values can overlap when one is speaking of the values held by a social group, values also can be held by individuals. Norms differ with regard to this, as they are not held by individuals but by their very nature and definition are parts of the fabric of our social group.

Another key concept to be explored is that of compliance, which is "conforming one's outward behaviour to that of others because of social pressure even though one's private beliefs may not have changed" (Psychology Centre, 2014). Compliance is achieved through social control which is the control of individuals or groups in society in order to ensure that social norms are followed. Various techniques can be used stemming from socialization, which is often invisible without analysis to the more visible use of laws and enforcement (OED, 2014). Informal social control occurs when individuals internalise the norms and values of their social group, accepting them unconsciously, leading to control of behaviour to a far narrower range than available without such constraints. Formal controls are more visible and are often enforced by governments and can often be expressed through laws and regulations.

Norms and values that have been internalized are extremely effective methods of control. Unconscious controls are only with analysis revealed in a manner that would allow questioning and challenge. Formal controls in contrast are often resisted by the social groups they are applied to. One feature that may play a key role in any exploration of global labour standards is the idea of whether corporations, while "persons" under the law, are swayed by norms and values (Hasle et al., 2014). While individuals may not truly be the rational economic actors often seen in economic theory we will examine whether it may be true that corporations can be. While there may be no *Homo economicus*, there may be a *Corporis economicus*, therefore any attempt to apply norms and values may need to consider this. Institutional theory has shown that in some cases organizations, or key actors within them may be swayed neither by rules nor norms, but habits and practices (Hasle et al., 2014). This may be a key tool for regulators to consider in any attempt to change compliance behaviour and should be considered for further research into regulatory compliance analysis.

1.2. Global labour markets and labour standards as human rights

While globalization is not a new phenomenon, since the end of the twentieth century we have seen increased economic globalization principally through the creation of globally extended capital markets and also through the outsourcing of production in global supply systems across the globe. Many argue that this recent globalization has been predominantly liberal capitalist and pro-business and that international social and environmental governance mechanisms have not kept pace with this rapid growth. "We are, in other words, faced with a highly imbalanced globalization, where, judging by the standards of advanced democratic industrial economies, the global space remains politically under-governed – particularly in the environmental and social fields. Yet while the global markets remain politically under-governed in a political sense, Corporate Social Responsibility (CSR) and business self-regulation have rapidly expanded" (Midttun, 2008). This is an interesting new development that may be an innovative creation of governance mechanisms where they are lacking, or it may be a smokescreen based on protecting brand without truly providing governance.

Our commerce has for millennia been embedded in a system of social rules. Even the ancient Israelites circa 1500 BCE had safety rules for construction projects, "When you build a new house, be sure to put a railing around the edge of the roof. Then you will not be responsible if someone falls off and is killed" (GNB, Deuteronomy 22:8). Markets set up in medieval European cities were created and sustained by a network of actors, the 'Great Chain of Being', who each had a defined role, from the monarch who provided the charter or franchise, to the merchants and customers who bought and sold products within a defined set of conventions and rules. Human have consistently set up systems that have a defined set of "rules of the game", some explicit and some implicit, that shape political, social and economic interactions (Mouzas and Ford, 2009).

Eleanor Roosevelt discussed the idea of human rights at the individual and local level, "Where, after all, do universal human rights begin? In small places, close to home-so close and so small that they cannot be seen on any map of the world. Yet they are the world of the individual person: the neighbourhood he lives in; the school or college he attends; the factory, farm or office where he works. Such are the places where every man, woman, and child seeks equal justice, equal opportunity, equal dignity without discrimination. Unless these rights have meaning there, they have little meaning anywhere" (Carozza, 2003). So while we are taking a global view, it is at the level of each and every worker that labour standards are truly realized. Labour standards are a subset of human rights and are based on the concept that "each human individual is endowed with an inherent and inalienable worth, or dignity, and thus that the value of the individual human person is ontologically and morally prior to the state or other social groupings" (Carozza, 2003).

The intersection between business and human rights has been a topic explored by the United Nations (UN) for the last several decades, most recently led by John Ruggie establishing the Global Compact in the year 2000 and then from 2005 to 2011 as the United Nations Secretary-General's Special Representative for Business and Human Rights (Global Compact, 2014). In the latter role, Ruggie asserted that "business is the major source of investment and job creation, and markets can be highly efficient means for allocating scarce resources" (Ruggie, 2008). Business is a creation of our societies, a creation that is capable of generating economic growth and reducing poverty.

Business also can play a role in increasing the demand for the rule of law, which is a key underpinning of a robust human rights regime. But history has shown us that markets only work towards the goals of society as a whole when "they are embedded within rules, customs and institutions. Markets themselves require these to survive and thrive, while society needs them to manage the adverse effects of market dynamics and produce the public goods that markets undersupply" (Ruggie, 2008). In fact, business actually poses the greatest risk to both society and itself when its scope and power far exceed the governance mechanisms that allow them to function effectively by providing necessary stability. "This is such a time and escalating charges of corporate-related human rights abuses are the canary in the coal mine, signalling that all is not well" (Ruggie, 2008).

As with all complex problems, the solution is complex as well. Three pillars of society – government, business and civil society – need to work together in new, yet to be fully developed way (Ruggie, 2008). Not surprisingly the worst human rights violations by business occur in locations in the world where the governance systems are the weakest (Ruggie, 2008). It is in many of these countries that we have seen rapid market growth, and noticeable governance gaps with regard to the ability of political actors to manage any potential detrimental effects of such growth (Ruggie, 2008).

Ruggie has detailed how some positive progress has been made. Some of these include innovative "multi-stakeholder initiatives, public–private hybrids combining mandatory with voluntary

measures, and industry and company self-regulation" (Ruggie, 2008). Despite some of these positive developments the key issue remains; there are more harms than methods to tackle them, and as of yet there is no coordinated approach to dealing with challenges to labour standards on a global scale so any initiative remains at best a band aid solution (Ruggie, 2008).

1.3. Corporate Social Responsibility (CSR)

The concept of business having responsibilities is not new and as described below is the cornerstone of many occupational health and safety regulatory approaches. A related term with regard to the responsibilities of business often used at the global governance level is Corporate Social Responsibility (CSR). CSR is increasingly being touted as a change in the way business is done, a change that can address concerns regarding poor labour standards including many global organizations such as the United Nations.

> Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations and interactions with their stakeholders. CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives ("Triple-Bottom-Line-Approach"), while at the same time addressing the expectations of shareholders and stakeholders (UNIDO, 2014).

CSR addresses more than labour standards; its aim is for business to contribute to sustainable economic development outcomes, arguing that this is both good for business and good for development. In many ways there are reasonable arguments for this approach based on the idea that businesses are after all a part of society, and therefore they have the potential to make a positive contribution to the goals of society (Ward, 2004). The most global approach to CSR can be seen in the efforts led by the UN to launch a Global Compact.

CSR has arisen as a response from business to a number of external and internal drivers that generate a business case for CSR. Such drivers include "new business opportunities through social and environmental innovation, reputational risk management, campaign pressure from nongovernmental organizations (NGOs) or trade unions, media exposure to the practices of individual companies or sectors, regulation, and litigation" (Ward, 2004). Ward sees the rise of CSR as a positive development, but not as a replacement for public regulation. What is important though is that however beneficial the rise of CSR may be, voluntary initiatives cannot be an effective substitute for good governance. What business needs is not a repeal of regulation, but rather clarity in its regulations, the baseline standards it requires of all firms, and predictability of government intervention (Ward, 2004).

A major driving force behind the rise of CSR has been due to pressure from civil society, and the demand for more than traditional economic capital, or even basic compliance with law, but rather, that to operate business needs social license as well, which can only be provided by the communities affected by any potential harms created. Within our increasingly media driven society business reputation is hugely significant. Media "canonization" or conversely demonization may carry extensive weight in a brand-oriented world where negative media could inflict serious brand damage. Therefore we are finding ourselves in a new world where stakeholders with 'moral rights' may sometimes negotiate almost on par with shareholders (Midttun, 2008).

In a world where CSR is becoming good business practice we see it being implemented in two separate but complementary ways. One way is where firms implement CSR as a tool to differentiate themselves from competitors, a more broad way is where standards across and industry as a whole are lifted based on CSR. Both approaches lead though to business internalizing new norms of behaviour that can lead to better societal outcomes (Albareda, 2008; Midttun, 2008).

Blackett argues that while not public governance these initiatives are in fact new and emerging forms of labour regulation. The rise of CSR speaks in many ways to the limits to public regulators, and the ability of CSR to adapt to the logic of the new international division of labour (Blackett, 2001). The demand for greater Corporate Social Responsibility is not new; it is just that there are new drivers pushing it. Three previous attempts from international organizations beginning in the 1970s failed to promote the adoption of greater Corporate Social Responsibility. These included efforts led by the UN Commission on Transnational Corporations (UNCTC), the ILO and the OECD (Blackett, 2001; Mantilla, 2009). It reveals either that these were ideas come before their time, or business only responds to economic levers.

Despite the seemingly positive rise of CSR, in the area of labour rights they often fail to reference the ILO Declaration on Fundamental Principles and Rights at Work, or to specific core labour standards (Blackett, 2001). There are attempts to link CSR and ILO labour standards, through for instance the creation of the Social Accountability International's (SAI) SA8000 code. The SA8000 relies on the Conventions of the ILO and other key human rights instruments, including child labour, forced labour, health and safety, compensation, working hours, discrimination, discipline, freedom of association and the right to bargain collectively. Many social reporting structures already exist including the recent Sustainability Reporting Framework launched by GRI (GRI, 2014). Yet as with all such CSR schemes, auditing is left to the implementer, with the result being that at times meeting labour standards may come in conflict with other incentives (Blackett, 2001).

An often raised concern is that while CSR may be effective when brand damage is involved this only covers the small number or workers employed in sectors with image conscious companies involved. One would be hard pressed to find a boycott campaign on using nickel from one mining company versus its competitors; there is no way to tell where the nickel we use comes (Liubicic, 1998).

These are not insignificant concerns. While there is room to argue about the necessity of a stick in ensuring better outcomes, if the need for a stick is perceived of as important to key stakeholders then the lack of them can fatally damage the implementation of any CSR initiative whether it truly needed the stick or not (Berliner and Prakash, 2012). For this reason, program design is as or almost as important as the high level goals of any CSR initiative. Stronger sticks usually lead to less participation so one must ask whether greater good is reached through broad membership, but the potential for non-compliance, or small membership with greater compliance. In all likelihood what are needed is both types of programs, with a clear understanding of the differences between the two (Berliner and Prakash, 2012). What is clear though is that for CSR to realize its lofty goals, and not just be a marketing tool designed not to improve social outcomes but rather to solely protect brands, governments and intergovernmental organizations will need to play a role. If the public sector can provide support to both the private sector and civil society then there is potential for real social and environmental improvements (Jørgensen et al., 2003).

1.4. Internal responsibility system

While the term "internal responsibility system" is frequently used in Canada it is a concept common to many jurisdictions under various terms. One early official presentation of such a concept was Lord Roben's report published for the UK government in 1972 and leading to the Health and Safety at Work etc. Act 1974 (Browne, 1973). Such an approach informs most if not all regulatory regimes

which create responsibilities for relevant regulated parties (EASHW, 2010; Lin and Mills, 2001; Löfstedt, 2011; OECD, 2002). The basic concept is that it is the workplace parties who hold the responsibility for creating safe and healthy workplaces.

The internal responsibility system is the philosophy that underpins the Canadian province of Ontario's Occupational Health and Safety Act (OHSA), yet it is not directly mentioned in the legislation. Various royal commissions and the Auditor-General of Ontario's 2004 report have reiterated the importance of the concept to occupational health and safety. While not defined in Ontario legislation various working descriptions have been used over the years, and for the scope of this research the IRS is described as follows:

> All workplace parties are responsible for health and safety under the Occupational Health and Safety Act (OHSA). The greatest responsibility generally falls upon the employer, as they control the workplace, but supervisors and workers also share responsibility. The concept behind this structure, coined by Dr. James Ham as the internal responsibility system (IRS), is the foundation of the OHSA. MOL inspectors cannot be in all workplaces at all times, so workplace parties need to take responsibility for health and safety hazards to the extent that they can control them (MOL, 2010).

The Ministry of Labour in a comprehensive review of Ontario's occupational health and safety system in 2010 discussed how Dr. James Ham, as architect of Ontario's first Occupational Health and Safety Act in the 1970s created a system in which there are complementary roles in improving worker health and safety. For Ham; together with government as standard setter and enforcement services provider, the workplace parties – CEOs, unions, employers, workers and supervisors – play a significant role in promoting workplace health and safety…proportional to the degree of control they exercise in the workplace" (MOL, 2010).

The role of the regulator in such an approach is to be a check on the system (Fidler, 1986; MOL, 2010). As such, in order to see if something is working a key step is often to measure it. This research does just that by providing a measure of the internal responsibility system. Other studies have reviewed health and safety systems often in the form of questionnaires directed at workplace parties (Fernández-Muñiz et al., 2012; Plummer et al., 2000; Tappin et al., 2015), the difference with this study is it uses different measure, namely observed regulatory non-compliance. This method will complement other research on whether regulators (Baggs et al., 2003; Benavides et al., 2013; Foley et al., 2012; Gray and Sholz, 1993; Hogg-Johnson et al., 2012; Levine et al., 2012; Tompa et al., 2007; Verbeek and Ivanov, 2013), and health and safety management systems (Abad et al., 2013; Arocena and Núñez, 2010; Bottani et al., 2009; Fernández-Muñiz et al., 2012; Sanmiquel et al., 2014) improve occupational health and safety outcomes.

2. Material and methods

2.1. Study population

Mining lends itself well as a subsector to explore given that developing countries that have not yet achieved wide scale industrialization find themselves blessed (or cursed) with natural resources attractive to mining companies. Many researchers have explored this idea of a resource curse, whether resources, especially non-renewable ones such as minerals do not actually lead to economic growth but rather stagnation or even economic reversal. What seems to be important is not just the presence of resources but the institutional context in which they are found. Where institutions benefit the companies themselves, results are poor, where institutions are friendly to the workers, positive results are seen (Mehlum et al., 2006).

Ontario is used as a case study to explore the concept of whether there norms and values are enough or whether there is a need for regulator. Canada is one of the richest nations in the world and it has a highly developed regulatory system. Workplace injuries and fatalities are legally required to be reported and multiple checks and balances are in place to ensure that they are. In addition the Ontario mining sector has had a dramatic improvement in reducing injuries and fatalities mining statistics since 1927 but especially over the last few decades (WSN, 2014b). The Ontario Mining Association proudly promotes that:

> Ontario is one of the safest mining jurisdictions in the world and mining is one of the safest industries in Ontario, achieving a 96% improvement in lost time injury frequency over the past 30 years. This level of success is a direct consequence of the sector's commitment to maintaining the highest health and safety standards possible (OMA, 2015).

For context i have included reference data on fatalities in the global mining sector in fifteen countries (see Charts 1 and 2). These countries form a snapshot of countries with active mining sectors, and include underdeveloped, developing and developed economies. No matter the state of development, one positive observation is that the fatality rate on average is improving in the mining sector across the world. Yet, more work can be done.

> Mining accounts for only about 1 per cent of the global workforce, but it is responsible for up to 5 per cent of fatal accidents at work (at least 15,000 per year, or over 40 each day). Despite considerable efforts in many parts of the industry to improve its safety record, mining remains the most hazardous occupation in most countries where it exists, when the number of people exposed to risk is taken into account (ILO, 2003).

To calculate fatality rates raw data was collected from the ILO archives that were reported to them by each individual country. Using two databases (employees by sex and economic activity (thousands), and cases of fatal occupational injury by sex and economic activity both for the mining and quarrying, electricity, gas and water supply sector) the data was analysed, combined and is presented in charts format below. These charts give context to the problem before us, yet one of the initial conclusions that can be made just by looking at the data is that in many cases there are gaps in the data. If you can't measure something, how can you improve it? If national authorities are not watching, who can work to fill the data gap? To calculate the fatality frequency rate two sets were combined, employment data aggregated by sector and reported fatalities. Interestingly the ILO did not have a published data set with calculated fatality rates, just raw numbers which on their own tell little as the larger the workforce the larger the expected fatalities.

The Ontario statistics did not have to be calculated and were obtained from Workplace Safety North, available online. WSN gets these statistics from the Workplace Safety and Insurance Board (WSIB) (WSN, 2014a). While Ontario's mining sector's fatality rate is above average compared to other Ontario sectors it favours well on a global scale with an average fatality rate of 0.015/100 workers during the period studied (WSN, 2014b).

Fatalities are a better indicator than lost time injuries because in some cases LTIs are more manageable. By introducing return to work programs employers can significantly reduce the LTI rate, without reducing the actual events that led to the injury. In addition programs that provide incentives or rewards for low injury rates can encourage non-reporting. Fatalities are a different matter – they are far less likely to be underreported and they can't be managed to a lower number except solely through reducing the causative factors.

Fatality rate in select countries in the mining and quarrying, electricity, gas and water supply sector.

2.2. Data collection

As discussed, labour standards are only a subset of the much broader field of human rights. Even within labour standards there are a multitude of different rights. In exploring whether norms and values are enough to maintain decent labour standards, this paper focuses on occupational health and safety, more specifically, in the Ontario mining sector.

This section of data analysis explores regulatory compliance in Ontario, Canada in the mining sector. The approach used is unique in the literature, suggesting that regulators, industry associations or organized labour from a sector view or inspectors, companies, union locals and workers from an individual company view can use multi-year regulatory non-compliance analysis to complement other internal responsibility system measurement tools such as questionnaires. This analysis allows us to both test the hypothesis of whether companies need to have independent audit, and it also allows for limited interpretations to be made on where the weak points in both regulatory compliance and health and safety implementation lie. Such an analysis as the company level could form part of the "Check" component of the Plan, Do, Check, Act framework found in many occupational health and safety management standards. It is important to understand though that inspections are usually not comprehensive and systematic with regard to an entire workplace or regulatory responsibilities. Therefore, while they provide additional information that can complement other tools such as workplace safety culture surveys they cannot be expected to be fulsome, systematic reviews of regulatory compliance, and definitely not health and safety system implementation.

This data was acquired through a freedom of information request to the Ontario Ministry of Labour. The data request was for all orders in the 10-fiscal year period covering calendar year (CY) 2004 through to CY2013, written in workplaces under Mining Health and Safety Program (MHSP) authority. Specifically i requested the numbers of orders broken down by sections, subsections, and clauses of the Occupational Health and Safety Act for the Ontario Ministry of Labour's mining program over the last 10 years for the MHSP.

The data contains no identifying information with regard to the identity of the contravener. Therefore, while it can be analysed to make observations about compliance in the mining sector on a provincial level, it does not measure compliance at the level of individuals or companies. Information on the number of mines in

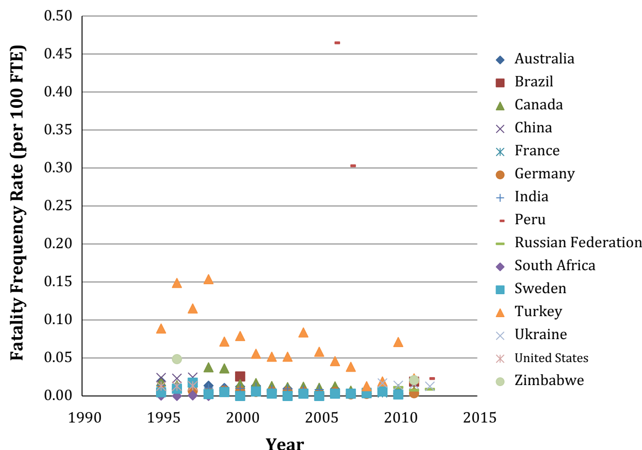

Chart 1. Mining fatality rate in select countries. (ILOStat, 2014a,b)

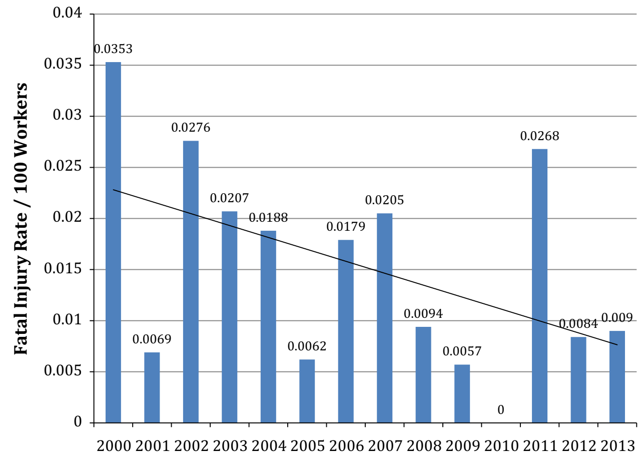

Chart 2. Fatal injury rate Ontario mining sector 2000–2013 (average 0.015). (WSN, 2014b)

Ontario is available from other sources though. Natural Resources Canada data states that Ontario in total has 277 active mining operations (NRC, 2008). Of these 277 sites the Ontario Prospectors Association lists 42 underground mines in operation in Ontario (OPA, 2014). For the Ontario Ministry of Labour the mining sector includes underground mines, open pit mines and quarries, sand and gravel pit operations, mineral exploration sites, and oil and gas extraction sites and facilities (MOL, 2015). In addition, the data only records non-compliance, Ministry of Labour inspectors do not make records of compliance with health and safety legislation, and therefore it is not possible to make interpretations about compliance versus non-compliance rates.

This research only provides a proof of concept for the approach of using regulatory non-compliance analysis to complement other questionnaire based forms of gauging the strength of the internal responsibility system. Given the lack of identifying information in the data it was not possible to determine for instance from how many companies these orders arise from or if the orders issued arose predominantly in one sub-sector of mining versus another. Future research could provide greater insight if identifying information was obtained. That said at maximum the orders issued come from an approximate maximum of 277 distinct mining sites with the caveat that mineral exploration sites are not captured in that number but they are also less frequently inspected given their transient nature.

An order is one of the compliance tools that can be used, at an inspector's discretion if a violation of the Ontario Occupational Health and Safety Act, or its regulations is observed. There are five different types of orders:

Non-compliance orders

- Forthwith order – efforts to achieve compliance must begin immediately and be completed before the inspector leaves the workplace.
- Time-based order – compliance must be achieved within a time frame determined by the inspector in consultation with the employer and workers.
- Time-unknown order – length of time to achieve compliance cannot be determined by the inspector in consultation with the employer and workers therefore no compliance date is given but the contravention is noted (see companion orders).

Companion orders (always written in conjunction with a time-unknown order)

- Compliance plan order – length of time to achieve compliance cannot be determined by the inspector in consultation with the employer and workers; therefore an companion order to the non-compliance order is issued to the employer requiring the employer to communicate what they intend to do to achieve compliance and in what timeframe. Must be approved by the inspector.
- Stop work order – used when an inspector finds that the contravention is an immediate danger or hazard to the health or safety of a worker (e.g. unguarded machinery that is being used). A stop work order will be withdrawn upon compliance. There is no date of compliance for stop-work orders; they remain in place until compliance has been achieved.

2.3. Analysis

Given the setting described in Section 2.1 Ontario makes a good test of the idea of whether sophisticated, wealthy jurisdictions with cultural norms (expressed both informally and formally through law) need anyone watching. Do the workplace parties comply with the norm of health and safety or is there a need for an auditor with the potential of a stick to realign behaviour compliance? In addition given the reported success in driving down the lagging indicator of lost time injuries, other leading indicators such as order analysis can be another tool used to further improve occupational health and safety outcomes.

The Ministry of Labour data request returned an excel spreadsheet with a total of 36,865 orders issued in the mining sector between January 1st, 2004 and December 31st, 2013. 14,508 of the orders were issued under the Occupational Health and Safety Act (OHSA), and 22,357 were issued under various regulations under the OHSA. The OHSA orders and the regulatory orders were analysed separately.

Upon analysis, 7162 of the OHSA orders were excluded. One was excluded as it was issued under a repealed act; two were excluded as the relevant section had been repealed. 1277 were excluded as there was no contravener or contravention identified, the orders had been issued under administrative sections detailing things such as the powers of inspectors, rather than health and safety contraventions. Orders issued under these sections were incorrectly applied and without the text of the order it was not possible to determine what the non-compliance observed was or who the contravener was. 6066 orders were excluded as they were companion orders and if included would have resulted in double counting contraventions.

A total of 22,357 orders were issued under regulations under the OHSA. Regulatory order sections can be issued to whoever is the relevant contravener unlike sections under the OHSA which include the contravener. Without the text of the order it was not possible to determine who the contravener was therefore they are not part of the analysis seen in Chart 1. That said, for most sections the employer or constructor is most often the contravener given their overarching duty and responsibility for health and safety in the workplace. For the OHSA orders, 95.06% of them were issued to the employer/constructor; it is likely that the percentage of regulatory orders issued to the employer/constructor would be of a similar magnitude. Designated substances (such as Asbestos and Isocyanates) used to have separate regulations but in the last decade these were consolidated into two regulations. All designated substance orders were combined for the purpose of analysis under the category "designated substances". The data set received at times had regulatory order sections split into two rows based on artifacts of the Ministry of Labour combining data from both their current and former database. This researcher combined these split sections together in order to be able to analyse order count as actually issued by the inspectorate.

Labour rights are well understood in comparison to many developing world jurisdictions due to the workforce being highly educated, mining being one of the most unionized sectors in the private sector, and training in rights being required by law as part of the mining common core program which all mine workers must take. Given this setting it will be instructive to analyse compliance with Ontario's OHSA and its regulations.

The sections of the OHSA and its regulations are regulatory minimums and many best practices and standards go far beyond them. As minimums, this paper analyses compliance, as one would expect that a mining sector pursuing best practices and Corporate Social Responsibility should be beyond the legal minimums prescribed in law, proving that a regulator does not need to be playing an audit role. If an order has been issued then non-compliance has been observed in the view of a trained occupational health and safety inspector.

When considering legal minimums, a statement from my training years ago, first as a worker co-chair for a joint health and safety committee in the private sector, and later as an inspector for the Ministry of Labour, that comes to mind is that every section has been written in blood. The meaning of this is that it has usually only been after tragedy that legal requirements have been created, making the legal framework reactive rather than proactive. Therefore, observed non-compliance not only is a failure to observe minimum requirements, but in many cases, a potential gap that could potentially lead to injury or even death.

3. Results and discussion

Despite Ontario's mining sector being well developed, sophisticated and highly unionized operating in a developed jurisdiction with strong legal protections and well-educated citizens, independent assessment of health and safety compliance by Ministry of Labour inspectors still found 22,357 instances of non-compliance in a 10 year period amongst an approximate maximum number of 277 unique mining sites. This is an important finding as legislative and regulatory provisions are legal minimums – the bare minimum that the law allows – not best practices. If sophisticated companies with well-developed health and safety management systems in place are found in non-compliance at this level by independent auditors the obvious outcome is that there is still a need at this point for such independent audits.

It is a reasonable extrapolation from Ontario's data that this outcome would apply to other jurisdictions, such as those in the developed world. Therefore if the national inspectorates are not able to fill this role, and human rights such as labour standards truly are a societal value, than thought needs to be given as to whom can play that audit role.

The analysis was based on the basic concepts that guide most occupational health and safety (OH&S) management systems. The basic concept behind these standards is the mantra: Plan, Do, Check, Act. Theoretically a well-run OH&S system would not need independent auditors as it would self-assess as part of the "check" requirements of such standards. But, as with financial standards, our society has long understood that there is a role to play for independent assessment in providing transparency, and another incentive/stick to comply.

In addition, of concern was that 4285 stop work orders were issued. These are issued only in the presence of violations that could immediately lead to injury or death. It is these types of non-compliance that one would especially expect a sophisticated OH&S system to have caught on its own.

The bulk of the orders by far were issued to employers, 6806, or 95% (Chart 3). Employers have the greatest command and control of the workplace, and it shows that the weaknesses of the internal

responsibility systems in the Ontario mining sector are not found at the supervisor or worker level.

It is important to note limitations imposed by the information available in the data set. Without data on the number and nature of the workplaces involved it is impossible to make a full analysis about non-compliance in the mining sector but other sources show that the number of mining sites is approximately 277. Whether non-compliance is due to a small subset of companies with others performing well for instance cannot be determined. Data on the number of workplaces, the types of mining operations, the number of workers and the time and location specificity of the orders issued would address some of these gaps and future research could seek this additional data. Regardless of whether individual companies may be performing better than others, third party audit of can be an additional check on the internal responsibility system either confirming or not success in regulatory compliance.

While the analysis method used only examines compliance at a provincial level, workplace specific order analysis could be used to analyse compliance on a company by company basis if contraveners were identified. While this was not the focus of this research paper, such an approach could prove valuable to regulators who wish to improve targeting of their limited inspectorates or to take proactive and preventative approaches with regard to identified non-compliance. Used as presented it could inform proactive approaches to eliminate observed non-compliance across the sector, by for instance targeting the top 20 issued orders until observed non-compliance drop.

In addition it could prove valuable to companies themselves, many of who are familiar with occupational health and safety standards implementation such as the International Standards Organization's OHSAS 18000, or the Canadian Standards Association (CSA) Z1000 – standards follow the high level format conceived of as a continuous loop of Plan, Do, Check, and Act. The analysis possible through this innovative approach would allow companies to "check" which then feeds back into the loop of Act, Plan and Do. Tables 1–3 provide further details on the observed non-compliance and as such can prove useful to the mining sector on areas that have been found needing improvement in mining sites in Ontario.

As can be seen in the top 20 orders issued under the OHSA (Table 2), fifteen were issued to employers, two to supervisors, two to workers, and one to owners. For the regulatory orders (Table 3) all 20 were issued to employers. Regulators and workplace can use such an analysis as part of their targeting and check

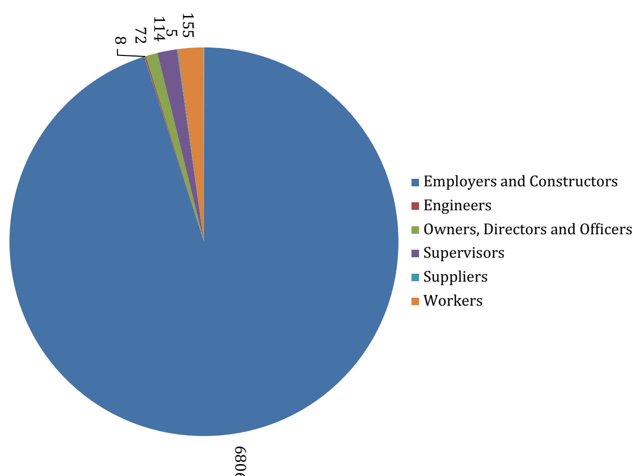

Chart 3. Orders issued pursuant to the OHSA in the Ontario mining sector 2004–2013 categorized by contravener.

Table 1
Orders issued pursuant to the OHSA regulations in the Ontario mining sector 2004–2013.

Ontario regulation under the OHSA	Number of orders issued
Confined spaces	4
Construction projects	65
Control of exposure to biological or chemical substances	12
Designated substances	90
Industrial establishments	75
Mines and mining plants	21,173
Oil and gas – offshore	2
Roll-over protective structures	38
WHMIS	260
X-ray safety	8

on compliance with health and safety laws and the success of the IRS and CSR.

3.1. All sectors, public, private and civil society can play a role

Given the results drawn in Section 3 based on the Ontario data – the finding that it is necessary, even in developed economies with sophisticated companies to have an independent audit function when it comes to Occupational Health and Safety – who is it that should play this role, especially in nation states that do not have well-functioning regulatory regimes?

> Rosenau argues that governments should "not be posited as first among equals, but simply as significant actors in a world marked by an increasing diffusion of authority and a corresponding diminution of hierarchy. States retain their sovereign rights; however the realms within which these rights can be exercised have diminished as the world becomes even more interdependent and as state boundaries become ever more porous (Tapscott and Gegenhuber, 2013).

Rosenau's argument opens a window on a potential way forward with regard to improving labour standards. The challenge is in how to ensure that the desired social outcomes arise out of such a complex system. In such a world authority cannot be expected to only be applied through explicit means such as laws and enforcement but also through implicit means such as persuasion and influence (Tapscott and Gegenhuber, 2013).

The idea of needing to use a multitude of tools is not new to regulators. In one concise example in 1994, the Dutch Ministry of Justice decided to monitor the level of compliance with legislation, rather than just enacting it. Flowing out of this research a new tool was developed called the 'Table of Eleven'. The 'Table of Eleven' guides regulators, using a model based on behavioural sciences, to better outcomes by having them think about how and why people comply and then crafting their responses based on this (LEEC, 2004). Tools such as these will help us tackle the complex challenges facing improving global labour standards.

Malcolm Sparrow provides key insight into operationalizing attempts to improve issues of concern to society. His advice can be summed up by directing public, private or civil society actors to unravel the knot of the problem before them in order to discover points which are weaker and open to what he terms sabotage. Such approaches are perfectly adaptable to global governance situations with a variety of actors at play (Sparrow, 2008). The idea one has to employ as with any craft is using the right tool at the right time. Those who are required to follow rules fall along a compliance continuum into three basic categories (see Fig. 1):

- Watch me
- Show me (or help me)
- Make me (or catch me)

Table 2
Top 20 OHSA orders issued in the Ontario mining sector 2004–2013.

OHSA section	# Orders	Contravention/issue	Contravener
25.(2)(h)	3353	Every precaution reasonable is taken in the circumstances for the protection of workers	Employer
25.(1)(b)	967	Maintenance of equipment, materials or protective devices	Employer
25.(2)(a)	844	Information, instruction and supervision is provided to a worker to protect the health or safety of the worker	Employer
25.(1)(c)	452	Measures and procedures prescribed are carried out in the workplace	Employer
25.(2)(i)	138	A copy of the OHSA and any explanatory material prepared by the ministry, outlining the rights, responsibilities and duties of workers is posted	Employer
8.(1)	119	Health and safety representative	Employer
25.(2)(j)	105	Prepare and review at least annually a written occupational health and safety policy and develop and maintain a program to implement that policy	Employer
25.(1)(a)	80	Equipment, materials and protective devices as prescribed are provided	Employer
27.(2)(c)	63	Every precaution reasonable is taken in the circumstances for the protection of a worker	Supervisor
8.(6)	53	A health and safety representative shall inspect the physical condition of the workplace at least once a month	Employer
25.(2)(k)	53	Post at a conspicuous location in the workplace a copy of the occupational health and safety policy	Employer
28.(1)(a)	53	Must work in compliance with the provisions of the act and the regulations	Worker
28.(2)(b)	53	Must not use or operate any equipment, machine, device or thing or work in a manner that may endanger himself, herself or any other worker	Worker
25.(1)(d)	51	Equipment, materials and protective devices provided by the employer are used as prescribed	Employer
25.(1)	48	Equipment, materials and protective devices as prescribed are provided, used as prescribed, and maintained in good condition, also measures and procedures prescribed are carried out in the workplace, and a building, structure, or any part thereof, or any other part of a workplace, whether temporary or permanent, is capable of supporting any loads that may be applied to it	Employer
37.(5)	42	A material safety data sheet expires three years after the date of its publication and must be updated	Employer
51.(1)	41	Where a person is killed or critically injured from any cause at a workplace, the constructor, if any, and the employer shall notify an inspector, and the committee, health and safety representative and trade union, if any, immediately of the occurrence by telephone or other direct means and the employer shall, within forty-eight hours after the occurrence, send to a director a written report of the circumstances of the occurrence containing such information and particulars as the regulations prescribe	Employer
29.(1)(a)	38	The owner of a workplace that is not a project shall, ensure that, such facilities as are prescribed are provided, any facilities prescribed to be provided are maintained as prescribed, the workplace complies with the regulations, and no workplace is constructed, developed, reconstructed, altered or added to except in compliance with this act and the regulations; and where so prescribed, furnish to a director any drawings, plans or specifications of any workplace as prescribed	Owner
27.(1)(a)	37	A supervisor shall ensure that a worker works in the manner and with the protective devices, measures and procedures required by this act and the regulations	Supervisor
9.(26)	30	A joint health and safety committee member shall inspect the physical condition of the workplace at least once a month	Employer

One should not use the same approach with everyone along the continuum. The "watch me" category is for those who are above legal minimums and leaders pushing best practices. They are the businesses that truly mean to make a difference through CSR for instance. All they need is a supportive environment in which to pursue their best practices, and reasonable audits on infrequent basis. The "show me" category either doesn't know what the norms or rules are, or doesn't understand what needs to be done. This category needs compliance assistance, and regular audits to ensure compliance, more carrot than stick. The last category is the "make me" group and they know the rules but deliberately choose not to follow them. This group needs more stick than carrot, but a combination may be best. In worst case scenarios such entities may need to have the full force of the law applied to them (ATO, 2007; OFB, 2011).

While outside auditors can play an important role it is important that they themselves have the capacity, and incentive to be thorough. When PwC auditors were hired to audit Wal-Mart's overseas partners many key labour standards contraventions were missed. These errors stemmed from a poor methodology that primarily focused on gathering information from management – physical inspections were conducted on a very limited basis (O'Rourke, 2000).

This idea of needing someone to watch and regulate applies beyond the world of labour standards. Before the financial crash in 2008 leaders within the financial system began to realize some of the risks that led to the crash. Paulson, the head of the Treasury, knew that the financial institutions would not be able to rein themselves in and prevent a financial catastrophe. In one remarkable example of cross-sectoral governance thinking, the CEO of Citigroup, one of the largest banks in the world, admitted this. At a dinner a year before the crisis this CEO asked Paulson, "Isn't there something you can do to order us not to take all of these risks?" (Sorkin, 2009). This is an interesting look into a private sector actor who was trying to think about what would normally be of concern to the public sector, yet did not act on these concerns himself.

It is for reasons such as these that there continues to be a role for regulators with legal authority – either national regulators on their own or in partnership with others. These partners could include private governance bodies such as NGOs, private sector inspectorates, global solutions networks or the ILO through the provision of technical and funding assistance (MMSD, 2002).

Partnered governance is not a challenge to authority, but rather a way for governments to extend their reach in a world where available resources are finite. In addition, by including business through partnered arrangements such as the Global Compact, what is being done is that those who are actually morally responsible for labour standards, the employers, are being both held to account and supported in their implementation (Midttun, 2008). Partnered governance recognizes the complexity of achieving labour standards and by bringing all relevant parties to the table it can get us not only to mere compliance, but potentially beyond the lowest common denominator (Midttun, 2008). Such a world would still allow the freedoms we cherish to exist, while also striving for a more equitable world (Coase, 1960).

3.2. Mining sector

In the specific case of mining, the industry provides both opportunity and risk. While on the one hand it provides revenue that can fund development, it also can result in mineral extraction done in an unsustainable way that does not respect human rights or the environment (Marcano, 2013). While the incentives behind participating in CSR are different for different groups they can result in

Table 3
Top 20 regulatory orders issued in the Ontario mining sector 2004–2013.

Regulation ID	Regulation section	Regulation description	# Orders	Contravention/issue	Contravener
854	185.(2)	MINING	2238	A machine that has an exposed moving part that may endanger the safety of any person shall be fenced or guarded unless its position, construction or attachment provides equivalent protection	Employer
854	196.(2)(d)	MINING	1847	A conveyor shall have head, tail, drive, deflection and tension pulleys guarded at any pinch point that is or may become accessible	Employer
854	155.(1)	MINING	1222	If electrical equipment is installed or modified, the work shall be done in accordance with good electrical practices	Employer
854	46.(2)	MINING	604	Where workers are required to work, operate, maintain or service equipment, a safe means of access shall be provided by a walkway, stairway or ladder way	Employer
854	105.(7)(a)	MINING	567	A procedure for the testing, maintenance and inspection of each motor vehicle shall be adopted and the procedure shall, schedule the testing of brakes, steering, lighting and other safety components prior to initial use of the motor vehicle for the shift	Employer
854	196.(2)(a)	MINING	533	A conveyor shall have, a pull cord at accessible locations along the conveyor by means of which the conveyor can be stopped	Employer
854	105.(1)(l)	MINING	456	When in use, a motor vehicle, other than a motor vehicle running on rails, shall, be equipped with a type BC fire extinguisher	Employer
854	116.(2)	MINING	414	The open side of a ramp haulage road in a surface mine shall be provided with a suitable protective barrier	Employer
854	46.(1)	MINING	388	A safe means of access to a workplace shall be provided by a walkway, stairway or ladder way	Employer
854	105.(7)	MINING	355	A procedure for the testing, maintenance and inspection of each motor vehicle shall be adopted and the procedure shall (a) Schedule the testing of brakes, steering, lighting and other safety components prior to initial use of the motor vehicle for the shift (b) Schedule the motor vehicle for routine inspections and maintenance, taking into consideration the recommendations of the manufacturer and the conditions of use (c) Itemize the tests to be carried out following maintenance work and before first use of the motor vehicle (d) Provide a record of the testing, maintenance, inspection and testing that has been carried out (e) Provide for the testing, maintenance and inspections to be performed by competent persons	Employer
854	155.(2)	MINING	346	Electrical equipment shall be operated in accordance with good electrical practices	Employer
854	105.(7)(d)	MINING	301	A procedure for the testing, maintenance and inspection of each motor vehicle shall be adopted and the procedure shall provide a record of the testing, maintenance, inspection and testing that has been carried out	Employer
854	66.(1)	MINING	269	Before work is begun in a workplace in an underground mine, the ground conditions of the workplace shall be examined for dangers and hazards and, if required, made safe	Employer
854	263.(2)	MINING	253	Between sunset and sunrise, every worker shall wear retro reflective material on headgear and outer clothing that enables the worker to be seen	Employer
854	11.2.(1)	MINING	222	Employers engaged in surface mine operations shall establish and maintain the following training programs: 1. Common core for surface miner (program #770210) 2. Specialty modules for surface miner (program #770210)	Employer
854	46.(3)	MINING	198	Every walkway and every working platform more than 1.5 m above the ground shall be provided with (a) A handrail not less than 0.91 m or more than 1.07 m above the floor of the walkway or platform (b) A second rail placed at the mid-point between the top rail and the floor of the walkway or platform or have the space between the top rail and the floor closed by a screen (c) Toe boards which shall extend from the floor a height of not less than 100 mm	Employer
854	68	MINING	196	Where a workplace, travel way, man way or other area of an underground mine is under repair or where there is a danger or hazard to a worker (a) The workplace, travel way, man way or other area shall be closed by barricades, fencing or other suitable means (b) Warning signs shall be posted indicating that it is under repair or indicating the nature of the danger or hazard	Employer
860	10.(1)	WHMIS	187	If a controlled product that an employer receives in a container from a supplier is transferred to another container, the employer shall ensure that the other container has a workplace label	Employer
854	88.(1)(b)	MINING	186	Where earth, clay, sand or gravel is being removed from a surface mine by means of powered equipment, he vertical height of the working face shall not be more than 1.5 m above the maximum reach of the equipment	Employer
854	41.(5)	MINING	179	At least once each month, the (a) Fire-extinguishing equipment (b) Fire suppression systems (c) Fire hydrants (d) Fire doors, at the surface of an underground mine, a surface mine and a mining plant shall be inspected by a competent person who shall report thereon to the supervisor in charge of the mine or mining plant, as the case may be	Employer

benefits as different incentives, combined with an audit function with some teeth can result in positive change (Marcano, 2013).

One way to eliminate injuries, illness and fatalities in the mining sector would be to prohibit mining, but this is of course unreasonable. Mineral products are a key resource behind our contemporary society and many basic needs would be unmet without them. However, the sector must at minimum meet legislated standards, and increasingly it needs to secure so-called social license in order to operate. If done within such a framework, mining can play an integral and vital role in society (MMSD, 2002). The challenge before the mining sector, as with all sectors is how to ensure that we integrate economic activity into a framework of sustainable development (MMSD, 2002). Unfortunately, to date, this is not occurring. Instead the extractive industries are failing

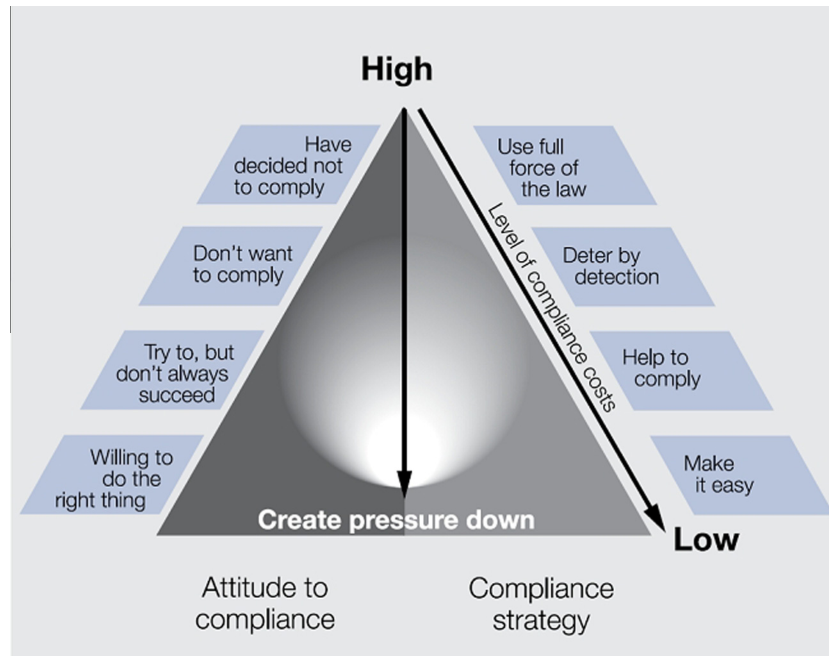

Fig. 1. Compliance continuum. (ATO, 2007)

to meet the full suite of societal demands, and it this is becoming a business risk as resistance to projects continues to grow (Franks et al., 2014).

There are some examples of positive approaches appearing in the sector though. The Extractive Industries Transparency Initiative (EITI), which opens up financial transparency with respect to money paid to national governments and other groups in the country of extraction, is one such potentially positive initiative in the mining sector (EITI, 2014). Another is the Kimberly Process, which attempts to stop the purchase and sale of conflict diamonds (Marcano, 2013). Yet another initiative is the Responsible Mineral Development Initiative (RMDI), that seeks to create guidance on what should be done to address these challenges" (Marcano, 2013).

Development agencies are beginning to focus on how to create a sustainable mining sector as well. The former Canadian International Development Agency (CIDA) has in recent years been a champion of CSR in the mining sector. Promotion of the mining sector ties into other Canadian government goals. CIDA has funded partnerships between civil society and mining companies in order to ensure that sustainable outcomes that respect human rights are a goal, in concert with the goal of promoting mining and Canadian mining companies (Coumans, 2012). It is not only the former CIDA which has focused on mining, however. The World Bank has also recognized the fact that ensuring sustainable development in this sector is a key goal, one that supports development while at the same time supporting economic growth (World Bank, 2002). As always though, the caution is who is watching these initiatives to ensure that real change is occurring.

Even during the time this paper was being written, there have been some encouraging developments that indicate that a world of better labour standards is possible. These include the following:

- The announcement that the UN Human Rights Council has passed a resolution on creating internationally legally binding instruments applicable to TNCs (TWN, 2014).
- Barrick Gold creating the first ever co-president responsible for social license (Kosich, 2014).
- The Indian government mandating CSR (Afsharipour and Rana, 2014).
- The initiative for responsible mining releasing a draft global standard for socially responsible mining (IRMA, 2014).
- The international council on mining and metals in a surprising act of transparency is releasing publicly aggregated safety data on fatalities and injuries (ICMM, 2014).

These developments show that multiple actors are working to address issues of labour standards in the mining sector and other sectors are experiencing similar developments. Especially interesting is the release of safety data by the ICMM, an action that is legislated in well-developed regulatory regimes allowing regulators to post such data but the fact that this was done by the companies themselves is a fascinating development.

Cooperation is a basic human attribute – and carrots work better than sticks (Gintis et al., 2002). Despite this, an independent audit function with sanction power is required to balance the tendency for some actors to game the system (Veal and Mouzas, 2011). Such an audit function should include more than just legislation since laws without norms are doomed to failure, it is only through the power of norms that true change can be made, an internalized norm with audits and sanctions is even more powerful than a law (Elster, 1989).

4. Conclusion

Having reviewed the relevant literature, and analysed the data it is my conclusion that the self-reported transformation of norms and values is not enough and that some form of an independent auditor is required when implementing CSR approaches to labour standards and relying on the internal responsibility system.

Analysis of regulatory orders can be an important additional tool to improve occupational health and safety outcomes by providing leading indicators before injury, illness or fatalities have occurred. Analysis of the top orders issued can inform the focus of regulators and workplaces in sectors and if analysis is done on workplace specific data can inform workplace relevant targeting. As advised by Malcolm Sparrow, public, private or civil society actors can use an analysis of the top 20 issues of non-compliance

as one of the 'knots' to tackle in order to discover points which are weaker and open to what he terms sabotage.

The key to success may be that it will take actors from all the three sectors of society, private, public and civil society and newer entities that combine a portion of all three in order to make positive change in a complex global world.

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