'Social stuff' and all that jazz: Understanding the residual category of social sustainability

Abstract

Recently we have seen a substantial increase in pressure for major industries, such as aquaculture, to become more sustainable. When it comes to practical attempts to operationalise sustainable development, however, the 'social stuff' is often neglected. In this paper, we provide a detailed exploration of how the concept of social sustainability is operationalised (and therefore understood) within the aquaculture certification context. We found that a) certification schemes do address social sustainability, but it is not a focus; b) relevant indicators mostly focus on workers' rights, or link directly back to environmental sustainability (through the consequences of environmental impact on humans); and c) the actions required often add little over and above existing legal requirements. Essentially, aquaculture sustainability certification schemes have not (yet) taken the opportunity to further shape our understanding of what social sustainability means, or how it is practiced. The consequence of this may be the impression that major industries are truly sustainable, just because they have obtained sustainability certification.

Keywords: Sustainability, certification, social, indicators, aquaculture

1. Introduction

In recent years, there has been a substantial increase in pressure for major industries to become more sustainable (Portney, 2015). Of the three commonly accepted pillars of sustainable development – economic, environmental and social – the social dimension is often the vaguest and least explicit, and even neglected, when it comes to practical attempts to shape sustainable development (Vifell and Soneryd, 2012, Anderson et al., 2015, Ballet et al., 2011, Béné et al., 2019, Eakin et al., 2017, Foran et al., 2014). This is also seen within aquaculture (Andreassen et al., 2016, Osmundsen et al., 2020b, Costa-Pierce and Page, 2010). This is likely due to the intangible, qualitative nature of social sustainability in addition to a lack of awareness of, and consensus on, relevant criteria (Von Geibler et al., 2006, Hicks et al., 2016). Furthermore, the social is often seen and treated together with economic (social-economic), further mystifying the idea of social sustainability (Kuhlman and Farrington, 2010). This means that the other dimensions tend to be privileged over the social domain. While often overlooked in favour of the economy (Davidson, 2011), social issues primarily lose ground to the environmental dimension within aquaculture, which is reflected both in the media (Olsen and Osmundsen, 2017) and in aquaculture certification schemes (Osmundsen et al., 2020a). In this paper, we aim to address this disparity through a detailed exploration of how the concept of social sustainability is operationalised (and therefore understood) within the aquaculture certification context.

1.1 Conceptualising the 'social stuff': three approaches

As a result of criticism pertaining to issues such as emissions, spread of disease, irresponsible sourcing of feed, and conflicts with other marine users, the aquaculture industry has struggled in terms of public perception and trust (Burridge et al., 2010, Graziano et al., 2018, Krause et al., 2015, Osmundsen and Olsen, 2017, Ytrestøyl et al., 2015). This has intensified the 'sustainable seafood movement', involving a widespread demand for more responsible practices and increased accountability (Bush and Roheim, 2019). Similar to other industries, the seafood sector has been criticised for neglecting social issues (Kittinger et al., 2017). However, before we turn to social sustainability in aquaculture, and aquaculture certification specifically, it would be pertinent to review how social sustainability is understood in the business world more generally. There are three key business-oriented approaches which

consider social matters regarding sustainability: Corporate Social Responsibility, the Triple Bottom-Line approach and Social Licence to Operate. We now present each in turn.

Corporate Social Responsibility

Although references to a concern for social responsibility appeared earlier, the body of literature regarding the concept of Corporate Social Responsibility (CSR) began to develop in the 1950's. It expanded during the 1960's and proliferated during the 1970's; since which time the concept has matured (for a discussion on the evolution of the topic, see Carroll, 1999). Indeed, it is now a concept which has become dominant in business reporting and almost every corporation has a policy concerning CSR and produces an annual report detailing its activity in this space (Crowther and Seifi, 2018).

Despite the broad base of knowledge relating to CSR, there is still some confusion regarding how it should be defined. The broadest definition of CSR is concerned with the relationship between business and society. Dahlsrud (2008), however, suggested there are five dimensions to CSR: the stakeholder dimension (how the organisation interacts with stakeholders including employees), the social dimension (the relationship between business and society), the economic dimension (socio-economic or financial contribution), the voluntariness dimension (going beyond legal obligations), and the environmental dimension (stewardship of the natural environment).

In addition to the proliferation of definitions, there are also myriad theories of and approaches to CSR. To 'map the territory', Garriga and Mele (2004) classed the main theories and related approaches into four groups. They suggest that most current theories of CSR focus on one of four main dimensions: (i) producing long-term profits, (ii) using business power responsibly, (iii) integrating social demands, and (iv) doing what is ethically correct for society. The authors further suggest that a new theory on the business and society relationship should integrate all four dimensions. No matter how the concept is presented, it would appear that Crowther and Seifi (2018) are correct when they propose that the debate is "concerned with some sort of social contract between operations and society" (p.11).

Triple Bottom-Line

The idea of the Triple Bottom-Line (TBL) has been important in bringing the concept of sustainability into the corporate world. As sustainability has received much criticism for being difficult to put into practice due to its vague character (Custance and Hillier, 1998, Davidson, 2011), the TBL has concretized the concept through the three pillars of environmental, economic, and social sustainability. This tripartite conceptualisation can be traced back to John Elkington (1998), who argued that "[s]ociety depends on the economy — and the economy depends on the global ecosystem, whose health represents the ultimate bottom line (p. 73)." The Triple Bottom-Line has now come to serve as the foundation for the more common understandings of sustainable development (Lehtonen, 2004). In some locations, the concept of the Quadruple Bottom-Line is being used, which includes a governance pillar on top of the standard three. Under this pillar, aspects such as ethics, integrity, financial resilience, community engagement, transparency and accountability are considered (Alibašić, 2018).

While the three pillars, or dimensions, of sustainability are increasingly adopted and declared by both private and public organisations, there is limited reflection concerning what they might comprise (Ariffin, 2007). Going back to Elkington (1998), he describes the three 'bottom-lines' in terms of different types of capital. The environmental bottom-line includes natural capital; the economic bottom-line includes physical, financial, human, and intellectual capital; and the social bottom-line includes human and social capital.

The social dimension has been described as more difficult to grasp and therefore more difficult to address (Lehtonen, 2004), characterised by elaborate issues such as equity, human rights, labour, and the trust and reciprocity associated with social capital (Elkington, 1998, Kittinger et al., 2017, Portney, 2015). From the inception of the TBL concept and continuing today, businesses have been criticised for not acknowledging the importance of the social dimension (Elkington, 1998, Hicks et al., 2016, Pedersen, 2006). However, increasingly more attention is being paid to how social life and human activity is intertwined with the economic sphere, be it social movements' impact on economic activity or the impact of economic activity on global society (Elkington, 1998, James, 2014, Kittinger et al., 2017).

As the name indicates, the TBL is a business-oriented idea, setting the sustainability agenda in a corporate context by addressing economies' placement *within* society (Mauerhofer, 2008). As an approach, the TBL is utilised as a reporting instrument for companies to demonstrate how implemented measures "protect or improve the environment, […] grow the

economy through their own financial bottom line, and […] improve equity" (Portney, 2015 p. 39). With this, the aim is to broaden the centre of attention of businesses beyond profits, to also include planet and people (Henson and Humphrey, 2012).

Social Licence to Operate

Historically, the term social licence or social licence to operate (SLO), was used for industrial activities (often mining) in countries with relatively weak regulations, to create legitimacy for industry in the absence of well-established formal institutions. In recent years, SLO is increasingly applied to different types of industries, and across different institutional contexts. Within the marine sector and in aquaculture, SLO is still considered an emergent concept (Kelly et al., 2019), even though some studies have been conducted such as in Scotland (Whitmarsh and Palmieri, 2009, Whitmarsh and Wattage, 2006, Alexander et al., 2014), Greece (Katranidis et al., 2003), Australia (Leith et al., 2014, Alexander and Abernethy, 2019), Canada (Rayner and Howlett, 2007), New Zealand (Quigley and Baines, 2014), and in Europe (Alexander et al., 2016a, Alexander et al., 2016b).

Social licence has been interpreted and defined in several different ways (Prno and Slocombe, 2012, Owen and Kemp, 2013, Kelly et al., 2019), and been contentious (Owen and Kemp, 2013, Moffat et al., 2016). A general definition is that SLO is the result of acceptance or approval of an industrial activity by local community stakeholders who are affected by it (Joyce and Thomson, 2000, Nelsen and Scoble, 2006, Moffat and Zhang, 2014, Boutilier and Thomson, 2011). Social licence is often operationalised as trust or approval and this implies that the relationship between a company and the community is one of collaboration, goodwill and characterised by perceptions of having a common/shared experience and goals.

There are numerous factors that influence a SLO. The dialogue between the company and the public, and the company's actions following that, matters for the social licence (Moffat and Zhang, 2014, Mercer-Mapstone et al., 2017, Mercer-Mapstone et al., 2018). Earlier studies of the mechanisms of social acceptability of aquaculture focused on the material outcomes from it, both economic (wages and taxes), environmental and social in terms of employment (Whitmarsh and Palmieri, 2009), and later studies also find that distribution of benefits matters (Alexander and Abernethy, 2019). Governance arrangements that ensure responsible industry performance, and how the public perceives these arrangements as capable of managing the social and environmental impact of aquaculture activities, is influential in

creating a SLO (Alexander and Abernethy, 2019, Zhang et al., 2015). In sum, factors such as whether the activities of the firm are deemed acceptable and within social norms, its dialogue with the community, distribution of benefits, presence of collaboration and involvement, and trust in governmental regulation will affect the community's willingness to accept or approve of industrial activities, i.e. granting a social licence.

1.2 Operationalising the 'social stuff'

All three approaches situate the private company as an actor 'of and in society', and it is through such a definition that the company receives duties and obligations. As an employer, they must consider labour issues, e.g. fair pay, contracts, health and safety, training. As a social player, they must consider ethical conduct, the consideration of social demands, fair distribution of benefits, equity, and collaboration with society based on trust and reciprocity. The ways in which these three approaches have been operationalised (through such duties and obligations) in aquaculture has been the subject of some scholarly investigation (Costa-Pierce and Page, 2010, Leith et al., 2014, Vince and Haward, 2019, Huemer, 2010, Bailey et al., 2018). However, questions remain regarding whether the activities relating to these approaches are enough in addressing social sustainability. As seen here, all three approaches are characterised by vague definitions, suggesting that they are not easily operationalised. Furthermore, whilst such approaches (particularly SLO) were primarily used by the company to improve relations with relevant stakeholders and communities, they are now increasingly concepts used by environmental justice groups, non-governmental organisations and local communities to contest unpopular industrial developments (Mather and Fanning, 2019). Ways of concretising the 'social stuff' are increasingly originating from outside of the industries themselves.

With regards to aquaculture, we have seen a move towards a more hybrid form of governance (where non-state market driven actors contribute to a new form of governance that links the market and community; Vince and Haward, 2019). The market plays an increasing role in determining how sustainability is represented, and operationalised, within this industry (Osmundsen et al., 2020a). Therefore, we must understand how certification schemes represent sustainability, and social sustainability, particularly given the focus of hybrid governance on addressing community concerns about the sustainability of the industry (Vince and Haward, 2019). As such, we ask: a) do aquaculture certification schemes address social

sustainability; b) if so, which issues related to social sustainability do they address, and c) how do aquaculture certification schemes address sustainability?

2. Material and methods

This study starts from a position of critical realism. As such: a) reality is independent and exists outside of our observations; b) the world as we know and understand it is constructed from our perspectives and experiences, through only what is 'observable'; and c) unobservable structures can cause observable events and the social world can be understood only if people understand the structures that generate events. For this reason, this research study is situated in the qualitative research paradigm and takes an inductive approach.

We undertook a comparative analysis of secondary data. We used data collated through the Norwegian Research Council funded SustainFish project. This project constructed a reference model for sustainability in salmon aquaculture, named the "Wheel of Sustainability" (Osmundsen et al., 2020a) against which eight aquaculture certification standards were coded for a variety of sustainability domains and sub-domains. The schemes assessed were: i) Aquaculture Stewardship Council; ii) Global G.A.P; iii) Friend of the Sea; iv) International Featured Standards; v) BRC Global Standards[1]; vi) Royal Society for the Prevention of Cruelty to Animals; vii) Global Aquaculture Alliance; viii) Scottish Salmon Producer's Organisation Standards.

Based on the three approaches described above, CSR, TBL and SLO, we identified the sub-domains in the Wheel of Sustainability reference model which were directly relevant to social sustainability. These included: accountability and enforcement, community contributions, coordination of interests and activities, employee interests and well-being, enquiry and learning, equity, labour and employment, representation and negotiation, respect for native culture, social assurance and social capital of local communities (for more information on what each sub-domain consists of, see Amundsen and Osmundsen, 2018). We then re-analysed the data previously coded into these sub-domains.

As the first step, we created a database in Microsoft Excel to capture the indicators used by each scheme, which aligned with the relevant social sustainability sub-domains. We used

[1] BRC Global Standards became BRCGS after the research was conducted and is, therefore, referred to as BRC throughout this paper.

pivot tables to undertake descriptive statistics on these indicators. As a second step, the data was re-coded, using NVivo 10. The text was coded in two key ways. Firstly, it was coded into themes relating to the area of focus of each indicator. Secondly, the indicators were coded according to the action required by each indicator (e.g. if a measurement was required, if documentation was required or if a process required implementation). The re-coding was to provide richer detail regarding what the indicators referred to.

The most obvious advantage of the secondary analysis of existing data is the low cost. Inherent to the nature of the secondary analysis of existing data, the available data are not collected to address the particular research question or to test the particular hypothesis. Another major limitation of the analysis of existing data is that the researchers who are analysing the data are not usually the same individuals as those involved in the data collection process. In this case, however, the researchers were the same individuals.

Importantly, whilst we are examining eight different standards, this study is not intended as a comparison of these standards. Rather, we are examining a wide range of standards for sustainable aquaculture in order to obtain a comprehensive picture of which social issues are addressed by sustainability certification, and how these issues are addressed.

3. Results

3.1 Do aquaculture certification schemes address social sustainability?

In total, 11 per cent of indicators (206 of the 1916 indicators coded in the reference model) were identified as directly relevant to social sustainability. This suggests that social sustainability is addressed by certification schemes, although it is clearly not a key focus.

3.2 What issues related to social sustainability are addressed by aquaculture certification schemes?

As we explained in the introduction, social sustainability has an intangible nature, with a lack of awareness of, and consensus on, relevant criteria. As such, we seek to understand how social sustainability is defined by the aquaculture certification schemes through which issues they address.

Our results indicate that some sub-domains are significantly more present in certification schemes than others (Figure 1). Accountability and enforcement (93 indicators) and social assurance (60 indicators) are the sub-domains with the largest number of indicators. For social sub-domains such as community contributions, enquiry and learning, equity, and social capital of local communities, we only identified one indicator for each.

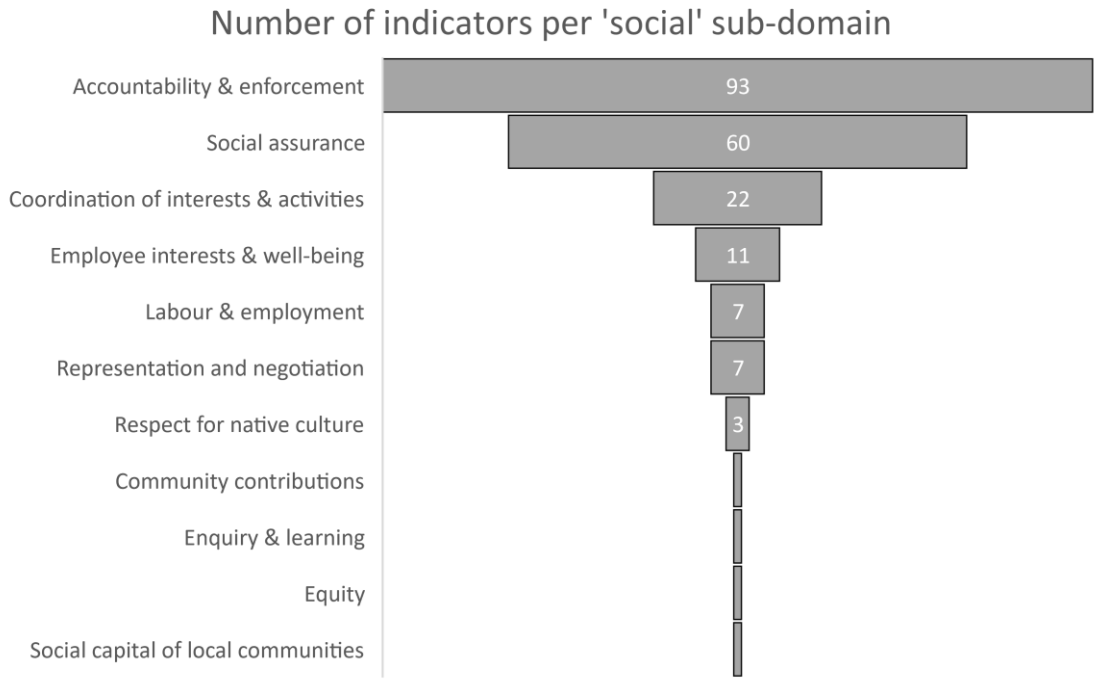

Figure 1. The number of indicators identified as belonging to each of the sub-domains from the Wheel of Sustainability reference model.

As we moved from the sub-domains to a more detailed examination of the text of the social sustainability indicators, allocating a sub-theme for the area of focus for each indicator (Figure 2), we found that impacts on the environment or product were the largest area of concern (62 indicators). This theme included concerns around allergens, biosecurity, contamination, waste disposal and food safety. For example:

> *The company shall provide staff facilities, which shall be proportional in size, equipped for the number of personnel and designed and operated so as to minimise food safety risks. Such facilities shall be kept in clean and good condition.*

> *Has the producer considered how to enhance the environment for the benefit of the local community and flora and fauna? Is this policy compatible with sustainable*

commercial agricultural production and does it strive to minimize environmental impact of the agricultural activity?

For this theme, much of the focus is on the consequences that environmental impacts have for people/local communities, or the governance of such, and so are 'social' in the broadest sense of the term.

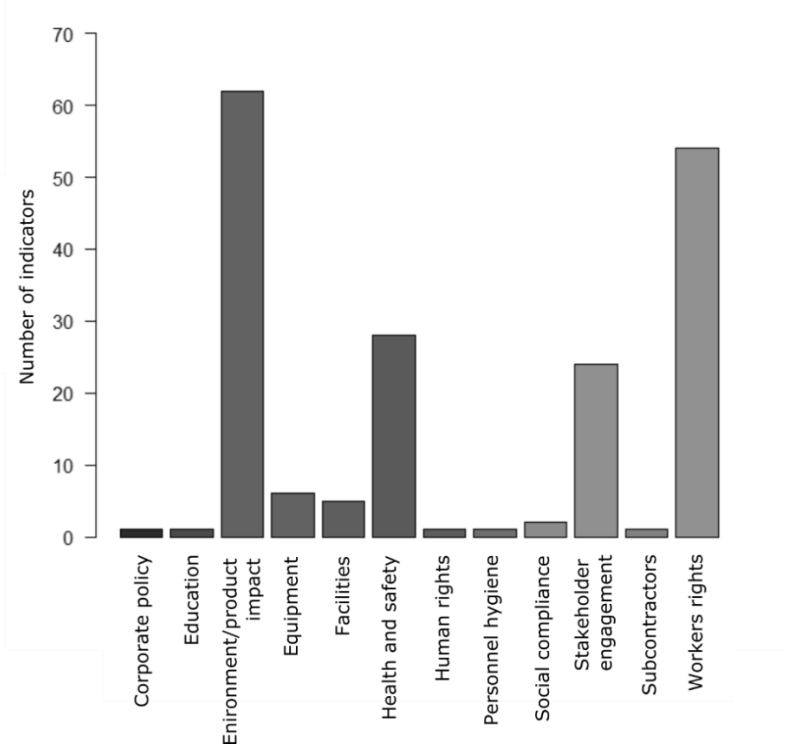

Figure 2. Number of indicators by thematic area of focus.

We identified workers' rights (54 indicators) as the second largest theme area. Workers' rights address the responsibility that companies have for their employees. This theme included sub-themes such as basic/minimum wages, bullying and harassment, child labour, collective bargaining, disciplinary action, discrimination, forced labour, grievances, and workers' health/transport/housing. For example:

The applicant shall meet or exceed the minimum wage rate and benefits required by local and national labor laws.

All work, including overtime, must be voluntary. The facility shall not engage in any form of forced or bonded labor.

If provided, employee housing shall meet local and national standards (e.g., water-tight structures, adequate space, heating/ ventilation/cooling), and shall be free of accumulated trash and garbage.

Health and safety, the third most common theme identified (28 indicators), is also largely related to how workers are treated on-site. This relates to the use of e.g. protective clothing, safe use of boats and diving equipment, first aid, accidents, and training to deal with such issues. In several of these indicators, site sub-contractors and visitors are also referred to, otherwise we would have considered health and safety a sub-set of workers' rights.

Stakeholder engagement and consultation (24) emerged as the fourth most commonly analysed theme, far above the remaining identified areas of concern. This theme included sub-themes such as consultation with communities and indigenous peoples, conflict avoidance or resolution, complaints, resource access and public requests for information. For example:

Where applicable, the applicant shall demonstrate dialogue with local native peoples and a process for conflict resolution with them under the laws governing their rights.

Presence and evidence of an effective policy and mechanism for the presentation, treatment and resolution of complaints by community stakeholders and organizations.

The applicant shall accommodate local inhabitants by not blocking access to fishing areas and other public resources.

Several thematic areas (education, human rights, personnel hygiene, subcontractors and corporate policy) were only mentioned in 0.05% of the indicators (i.e. each in only 1 of 1916 indicators). The education indicator focused on a requirement for courses, certificates and degrees for workers. The indicator relating to human rights required a self-declaration on good social practice regarding human rights which was signed by the management and the employees' representative(s) and communicated to the employees. The personnel hygiene indicator required compliance with personnel hygiene requirements to be checked regularly.

The subcontractor indicator related to the need for subcontractors to be legally allowed to undertake the work that was required of them. That each of these aspects are only mentioned in a single indicator each suggests that they are not aspects that are considered of huge importance. Lastly, the corporate policy indicator related to the need for the senior management to draw up a policy which covered customer focus, environmental responsibility, sustainability, ethics and personnel responsibility, and product requirements. This was, essentially, a catch-all indicator which could not easily be designated elsewhere.

c) How do aquaculture certification schemes assess social sustainability?

As noted in the introduction, social sustainability is notoriously difficult to assess. As such, we seek to understand how the certification schemes have attempted to do this. This section details the types of 'action' (what are the assessed organisation expected to do to meet the standard) that are required by the social sustainability related indicators.

A total of 235 actions were identified in our analysis, higher than the number of indicators, because on several occasions an indicator required more than one action. Moreover, few indicators were quantitative (in that they required numerical measurements; 10 indicators).

Regarding the type of action that is required by these indicators, we see that compliance with national law/legal commitments is the largest action (60 indicators; Figure 3). Examples include:

> *Where required by legislation, the site shall be registered with, or be approved by, the appropriate authority.*
>
> *All current legal requirements for waste disposal shall be met.*
>
> *All relevant legislation regarding notifiable diseases must be understood and adhered to.*

This reveals that in many instances, the requisite actions add little over and above existing legal requirements.

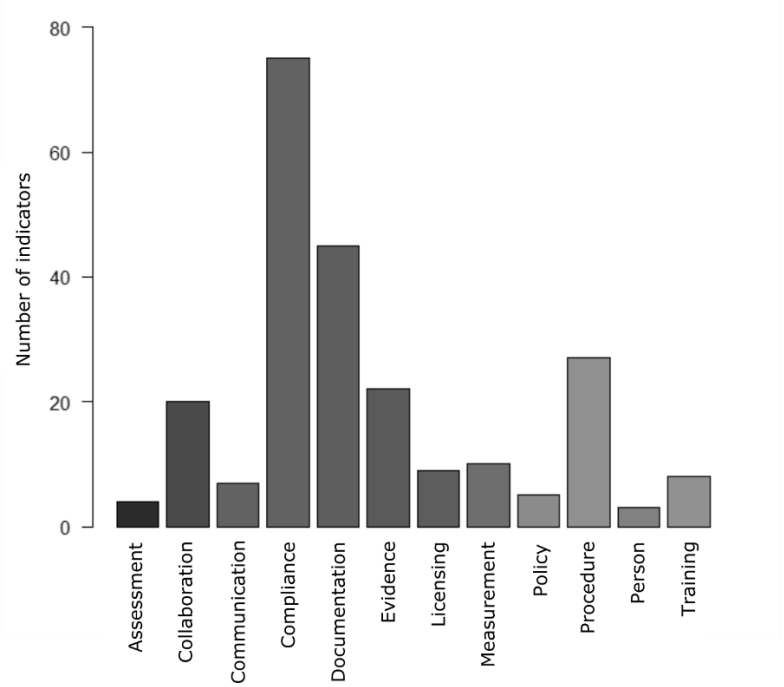

Figure 3. Number of indicators by action required.

The second most common way in which social sustainability indicators are assessed is through the provision of documentation (45 indicators). This may relate to documentation of new procedures that are required (see below), or it may be the documentation of practices which already exist. Examples include:

> *Is there documented evidence indicating regular payment of salaries corresponding to the contract clause?*
>
> *There shall be a written worker grievance process, made available to all workers, that allows for the anonymous reporting of grievances to management without fear of retaliation.*
>
> *The producer must, through documented evidence, demonstrate that any co-operative management schemes between operations in the same loch/area aimed at reducing sea lice populations have been entered into.*

The latter example is an interesting one because of its use of the term 'evidence'. A requirement for evidence was stated in 22 of the indicators – however, on many occasions it was not clear what such 'evidence' should look like. For example:

> *Evidence of regular consultation and engagement with community representatives and organizations*

Evidence that workers are free to form organizations, including unions, to advocate for and protect their rights

Evidence of a functioning disciplinary action policy whose aim is to improve the worker

It may be that documentation is the means by which such evidence would be provided. However, because this was often not stated explicitly in the indicator, the requirement for evidence was coded as a separate type of action.

Our results also revealed that the establishment of a procedure or process was also a key action by which to assess social sustainability (22 indicators). In some cases, this involved the reporting of issues, in others it involved activities such as internal audits or on-site inspection. Examples include:

The applicant shall demonstrate interaction with the local community to avoid or resolve conflicts through meetings performed annually or more often, committees, correspondence, service projects or other activities.

Presence and evidence of an effective policy and mechanism for the presentation, treatment and resolution of complaints by community stakeholders and organizations.

Have effective corrective actions been taken as a result of nonconformances detected during the internal self-assessment or internal producer group inspections?

Regarding some of the less-commonly referred-to actions, the indicators are often quite specific – i.e. identify a responsible person, undertake a risk assessment, make sure training is available, or communicate with stakeholders or relevant organisations.

4. Discussion

Three key findings have arisen in this study. Firstly, when combined, these aquaculture sustainability schemes can be considered to address *some aspects* of 'social sustainability' as determined by the CSR, TBL and SLO frameworks. Secondly, when we examine the actual focus of relevant indicators, they largely focus on accountability and enforcement more broadly, and workers' rights or environmental sustainability (through the consequences for people/local communities that environmental impacts have) more specifically. As such, can we really state that these standards are considering social sustainability at all? Thirdly, the

actions required often add little over and above existing legal requirements. Does this mean that we don't know how to measure social sustainability, and so therefore we just don't?

Sustainability certifications appear to have become the 'new fashion' when it comes to advancing sustainability, the idea being that certifications provide businesses with an incentive to use more sustainable practices (Bush et al., 2013). However, there is little evidence to prove such suggestions true. In some cases, it has been suggested that such schemes may lead to improved environmental sustainability, for example reducing deforestation (Carlson et al., 2018) and aquaculture related emissions (Nhu et al., 2016). Much of the criticism relates to the assumed inherent limitations of site/company-level certification, questioning their capability of addressing externalities beyond individual production sites (Amundsen et al., 2019, Bush et al., 2013). Although improvements in environmental sustainability due to certification are often not evident (Gupta and Racherla, 2016, Morgans et al., 2018), there is even less evidence regarding economic and social sustainability (although see DeFries et al., 2017 for an example of a weak positive link).

Our results suggest that this may be due to two reasons: i) the very limited aspects of social sustainability that are considered within the certification schemes analysed; and ii) the limited inclusion of indicators which go above and beyond what is already required by national legislation. Colantonio (2009) argued that there is no consensus on the definition of social sustainability because the concept is being approached from diverging study perspectives and discipline-specific criteria and that this makes a generalised definition difficult to achieve. In accordance with this view, we find that the social category is too vast, covering highly divergent issues related to local community, civil society, and workers' rights. Social sustainability has, in other words, become a residual category for all those intangible matters involving humans. Such a wide-reaching category has proven unfruitful in addressing the many challenges of both the aquaculture industry and other sectors, as the generality leaves the issues at hand, as well as the allocation of responsibilities, undetermined.

Consequently, we argue that there is a need for specification of the many issues grouped together as pertaining to sustainability, and especially social sustainability. It may be that the reference model developed by the SustainFish project (Osmundsen et al., 2020a), which was undertaken as an interdisciplinary project, can start to help address this, at least for seafood certification. This study has further outlined key themes pertaining to the 'social stuff' of the aquaculture industry. Importantly, 'social stuff' as explored here refers to what the industry

understands as social sustainability. Being based on the definitions of CSR, TBL and SLO, this also echoes a more general understanding of what socially relevant issues include.

We have identified several focus areas pertaining to social sustainability, which are currently barely addressed in existing schemes; for example, respect for native culture, community contributions, enquiry and learning, equity, and social capital of local communities. The lack of standard criteria that address these topics could be related to the intangible, qualitative nature of social sustainability described above. There are, however, ways in which companies can be assessed on these issues. Indicators could include, for example: documentary evidence of native culture considered in site planning and operation, percentage of profit directed to community sponsorship, documentary evidence of opportunities for staff to undertake developmental training, or percentage gender split of those in senior positions.

Further research is clearly required to establish the most appropriate indicators for each of these sub-domains. Such a project could take its lead from what is already being done by the seafood industry. Companies contribute to what could be considered social sustainability outside of certification schemes. For example, in their sustainability report 2018, Lerøy Seafood Group (a seafood production and distribution company based in Norway) provided a section on 'social impact' detailing issues relating to workers' rights, but also to social integration, health, supporting young people's activities, and their contributions to the United Nations Sustainable Development Goals (Lerøy Seafood Group ASA 2018). Aquaculture companies, like most private businesses, are aware of the value of having a positive public image, but apply highly diverse strategies in tending to their public image (Osmundsen, Størkersen et al. 2012). Such strategies range from focusing solely on fish production, to engaging in entrepreneurship, going into politics locally, local community alliances, and research and development partnerships (Osmundsen et al., 2012, Alexander et al., 2014).

Through such activities, companies link the provision of socially responsible activities to the sales of their private goods. This means that companies have started to move beyond the role of employer and economic agent, which is already well-addressed by the schemes, towards a role as social agent. Perhaps all is as it should be: if private entities use public resources, should they not, in turn, provide public good? Even so, this has implications for the company. They can never again retract to a more comfortable role as mere economic agents. This also has implications for how we understand the world. The inclusion of social indicators in market instruments such as certification schemes could be viewed as a step forward in the

project to shape the world in a way which makes it more adequate to the neoliberal model (Clarke, 2005, Larner, 2003). Or, such private regulatory initiatives embracing domains traditionally viewed as the responsibility of public regulation might also prove to yield worse outcomes (Overman and Van Thiel, 2016), spurring a counter pendulum movement back to the regulatory state safeguarding public interest.

5. Conclusion

The social dimension of sustainability is the least developed pillar of sustainability, and the most neglected, when it comes to practical attempts to shape sustainable development. This is particularly the case when it comes to the social sustainability of resource-intensive industrial development and may be the reason why we have seen a shift from companies leading the charge to other economic/social agents taking control. However, as we have shown in this study, sustainability certification schemes have not (yet) taken the opportunity to further shape our understanding of what social sustainability means, or how it is practiced, at least regarding aquaculture. With the move to hybrid governance in this sphere, incorporating a stronger role for market instruments such as certification, now is the time for the 'social stuff' to be more fully incorporated into certification schemes. Food production done by, and for, humans in our shared environment is as much of a social challenge as any. Yet achieving sustainability is only feasible through a holistic understanding, and operationalisation, of sustainability.

References

ALEXANDER, K., ANGEL, D., FREEMAN, S., ISRAEL, D., JOHANSEN, J., KLETOU, D., MELAND, M., PECORINO, D., REBOURS, C. & ROUSOU, M. 2016a. Improving sustainability of aquaculture in Europe: Stakeholder dialogues on Integrated Multi-trophic Aquaculture (IMTA). *Environmental Science & Policy,* 55**,** 96-106.

ALEXANDER, K., FREEMAN, S. & POTTS, T. 2016b. Navigating uncertain waters: European public perceptions of integrated multi trophic aquaculture (IMTA). *Environmental science & policy,* 61**,** 230-237.

ALEXANDER, K., GATWARD, I., PARKER, A., BLACK, K., BOARDMAN, A., POTTS, T. & THOMPSON, E. 2014. An assessment of the benefits to Scotland of aquaculture.

ALEXANDER, K. A. & ABERNETHY, K. E. 2019. Determinants of socially-supported wild-catch fisheries and aquaculture in Australia. *Fisheries Research and Development Corporation*.

ALIBAŠIĆ, H. 2018. *Sustainability and Resilience Planning for Local Governments: The Quadruple Bottom Line Strategy*, Springer.

AMUNDSEN, V. S., GAUTEPLASS, A. Å. & BAILEY, J. L. 2019. Level up or game over: the implications of levels of impact in certification schemes for salmon aquaculture. *Aquaculture Economics & Management,* 23**,** 237-253.

AMUNDSEN, V. S. & OSMUNDSEN, T. C. 2018. Sustainability indicators for salmon aquaculture. *Data in Brief,* 20**,** 20-29.

ANDERSON, J. L., ANDERSON, C. M., CHU, J., MEREDITH, J., ASCHE, F., SYLVIA, G., SMITH, M. D., ANGGRAENI, D., ARTHUR, R. & GUTTORMSEN, A. 2015. The fishery performance indicators: A management tool for triple bottom line outcomes. *PLoS One,* 10**,** e0122809.

ANDREASSEN, O., KARLSEN, K. M., ROBERTSEN, R. & SOLÅS, A.-M. 2016. Utvikling av et bærekraftsbarometer for norsk lakseoppdrett. *Rapport,* 13**,** 2016.

ARIFFIN, Y. 2007. Developmental and Environmental Policies: Past Trends, Present Issues, Future Prospects. *Regulating Globalisation. Critical Approaches to Global Governance***,** 205-248.

BAILEY, M., PACKER, H., SCHILLER, L., TLUSTY, M. & SWARTZ, W. 2018. The role of corporate social responsibility in creating a Seussian world of seafood sustainability. *Fish and Fisheries,* 19**,** 782-790.

BALLET, J., DUBOIS, J.-L. & MAHIEU, F.-R. 2011. La soutenabilité sociale du développement durable: de l'omission à l'émergence. *Mondes en développement***,** 89-110.

BÉNÉ, C., OOSTERVEER, P., LAMOTTE, L., BROUWER, I. D., DE HAAN, S., PRAGER, S. D., TALSMA, E. F. & KHOURY, C. K. 2019. When food systems meet sustainability–Current narratives and implications for actions. *World Development,* 113**,** 116-130.

BOUTILIER, R. G. & THOMSON, I. 2011. Modelling and measuring the social license to operate: fruits of a dialogue between theory and practice. *Social Licence*.

BURRIDGE, L., WEIS, J. S., CABELLO, F., PIZARRO, J. & BOSTICK, K. 2010. Chemical use in salmon aquaculture: a review of current practices and possible environmental effects. *Aquaculture,* 306**,** 7-23.

BUSH, S. R., BELTON, B., HALL, D., VANDERGEEST, P., MURRAY, F. J., PONTE, S., OOSTERVEER, P., ISLAM, M. S., MOL, A. P. & HATANAKA, M. 2013. Certify sustainable aquaculture? *Science,* 341**,** 1067-1068.

BUSH, S. R. & ROHEIM, C. A. 2019. The Shifting Politics of Sustainable Seafood Consumerism. *The Oxford Handbook of Political Consumerism***,** 331.

CARLSON, K. M., HEILMAYR, R., GIBBS, H. K., NOOJIPADY, P., BURNS, D. N., MORTON, D. C., WALKER, N. F., PAOLI, G. D. & KREMEN, C. 2018. Effect of oil palm sustainability certification on deforestation and fire in Indonesia. *Proceedings of the National Academy of Sciences,* 115**,** 121-126.

CARROLL, A. B. 1999. Corporate social responsibility: Evolution of a definitional construct. *Business & society,* 38**,** 268-295.

514 CLARKE, S. 2005. The neoliberal theory of society. *Neoliberalism: A critical reader,* 50**,** 59.
515 COLANTONIO, A. 2009. Social sustainability: a review and critique of traditional versus emerging
516 themes and assessment methods.
517 COSTA-PIERCE, B. A. & PAGE, G. G. 2010. Sustainability science in aquaculture. *Ocean Farming and*
518 *Sustainable Aquaculture Science and Technology. Encyclopedia of Sustainability Science and*
519 *Technology. Springer Science, NY***,** 250-255.
520 CROWTHER, D. & SEIFI, S. 2018. Redefining Corporate Social Responsibility. *Emerald Group*
521 *Publishing. Retrieved March,* 4**,** 2019.
522 CUSTANCE, J. & HILLIER, H. 1998. Statistical issues in developing indicators of sustainable
523 development. *Journal of the Royal Statistical Society: Series A (Statistics in Society),* 161**,** 281-
524 290.
525 DAHLSRUD, A. 2008. How corporate social responsibility is defined: an analysis of 37 definitions.
526 *Corporate social responsibility and environmental management,* 15**,** 1-13.
527 DAVIDSON, K. M. 2011. Reporting systems for sustainability: what are they measuring? *Social*
528 *indicators research,* 100**,** 351-365.
529 DEFRIES, R. S., FANZO, J., MONDAL, P., REMANS, R. & WOOD, S. A. 2017. Is voluntary certification of
530 tropical agricultural commodities achieving sustainability goals for small-scale producers? A
531 review of the evidence. *Environmental Research Letters,* 12**,** 033001.
532 EAKIN, H., CONNORS, J. P., WHARTON, C., BERTMANN, F., XIONG, A. & STOLTZFUS, J. 2017.
533 Identifying attributes of food system sustainability: emerging themes and consensus.
534 *Agriculture and human values,* 34**,** 757-773.
535 ELKINGTON, J. 1998. Partnerships from cannibals with forks: The triple bottom line of 21st‐century
536 business. *Environmental quality management,* 8**,** 37-51.
537 FORAN, T., BUTLER, J. R., WILLIAMS, L. J., WANJURA, W. J., HALL, A., CARTER, L. & CARBERRY, P. S.
538 2014. Taking complexity in food systems seriously: An interdisciplinary analysis. *World*
539 *Development,* 61**,** 85-101.
540 GARRIGA, E. & MELÉ, D. 2004. Corporate social responsibility theories: Mapping the territory.
541 *Journal of business ethics,* 53**,** 51-71.
542 GRAZIANO, M., FOX, C. J., ALEXANDER, K., PITA, C., HEYMANS, J. J., CRUMLISH, M., HUGHES, A.,
543 GHANAWI, J. & CANNELLA, L. 2018. Environmental and socio-political shocks to the seafood
544 sector: What does this mean for resilience? Lessons from two UK case studies, 1945–2016.
545 *Marine Policy,* 87**,** 301-313.
546 GUPTA, S. K. & RACHERLA, U. S. 2016. Effect of ISO 14000 certification on sustainability: evidence
547 from the Indian leather industry. *The Journal of Social, Political, and Economic Studies,* 41**,**
548 34-50.
549 HENSON, S. & HUMPHREY, J. 2012. Private standards in global agri-food chains. *Private standards*
550 *and global governance: Economic, legal and political perspectives***,** 98-113.
551 HICKS, C. C., LEVINE, A., AGRAWAL, A., BASURTO, X., BRESLOW, S. J., CAROTHERS, C., CHARNLEY, S.,
552 COULTHARD, S., DOLSAK, N. & DONATUTO, J. 2016. Engage key social concepts for
553 sustainability. *Science,* 352**,** 38-40.
554 HUEMER, L. 2010. Corporate social responsibility and multinational corporation identity: Norwegian
555 strategies in the Chilean aquaculture industry. *Journal of Business Ethics,* 91**,** 265-277.
556 JAMES, P. 2014. *Urban sustainability in theory and practice: circles of sustainability*, Routledge.
557 JOYCE, S. & THOMSON, I. 2000. Earning a social license to operate: Social acceptability and resource
558 development in Latin America. *CIM(Canadian Mining and Metallurgical) Bulletin,* 93**,** 49-53.
559 KATRANIDIS, S., NITSI, E. & VAKROU, A. 2003. Social acceptability of aquaculture development in
560 coastal areas: the case of two Greek Islands. *Coastal Management,* 31**,** 37-53.
561 KELLY, R., FLEMING, A., PECL, G., RICHTER, A. & BONN, A. 2019. Social license through citizen science:
562 a tool for marine conservation. *Ecology and Society,* 24.

KITTINGER, J. N., TEH, L. C., ALLISON, E. H., BENNETT, N. J., CROWDER, L. B., FINKBEINER, E. M., HICKS, C., SCARTON, C. G., NAKAMURA, K. & OTA, Y. 2017. Committing to socially responsible seafood. *Science,* 356**,** 912-913.
KRAUSE, G., BRUGERE, C., DIEDRICH, A., EBELING, M. W., FERSE, S. C., MIKKELSEN, E., AGÚNDEZ, J. A. P., STEAD, S. M., STYBEL, N. & TROELL, M. 2015. A revolution without people? Closing the people–policy gap in aquaculture development. *Aquaculture,* 447**,** 44-55.
KUHLMAN, T. & FARRINGTON, J. 2010. What is sustainability? *Sustainability,* 2**,** 3436-3448.
LARNER, W. 2003. Neoliberalism? : SAGE Publications Sage UK: London, England.
LEHTONEN, M. 2004. The environmental–social interface of sustainable development: capabilities, social capital, institutions. *Ecological economics,* 49**,** 199-214.
LEITH, P., OGIER, E. & HAWARD, M. 2014. Science and social license: defining environmental sustainability of Atlantic salmon aquaculture in south-eastern Tasmania, Australia. *Social Epistemology,* 28**,** 277-296.
MATHER, C. & FANNING, L. 2019. Is social licence "going rogue"? *The Geographical Journal,* 185**,** 498-504.
MAUERHOFER, V. 2008. 3-D Sustainability: An approach for priority setting in situation of conflicting interests towards a Sustainable Development. *Ecological economics,* 64**,** 496-506.
MERCER-MAPSTONE, L., RIFKIN, W., LOUIS, W. & MOFFAT, K. 2017. Meaningful dialogue outcomes contribute to laying a foundation for social licence to operate. *Resources Policy,* 53**,** 347-355.
MERCER-MAPSTONE, L. D., RIFKIN, W., MOFFAT, K. & LOUIS, W. 2018. What makes stakeholder engagement in social licence "meaningful"? Practitioners' conceptualisations of dialogue. *Rural Society,* 27**,** 1-17.
MOFFAT, K., LACEY, J., ZHANG, A. & LEIPOLD, S. 2016. The social licence to operate: a critical review. *Forestry: An International Journal of Forest Research,* 89**,** 477-488.
MOFFAT, K. & ZHANG, A. 2014. The paths to social licence to operate: An integrative model explaining community acceptance of mining. *Resources Policy,* 39**,** 61-70.
MORGANS, C. L., MEIJAARD, E., SANTIKA, T., LAW, E., BUDIHARTA, S., ANCRENAZ, M. & WILSON, K. A. 2018. Evaluating the effectiveness of palm oil certification in delivering multiple sustainability objectives. *Environmental Research Letters,* 13**,** 064032.
NELSEN, J. & SCOBLE, M. 2006. Social license to operate mines: Issues of situational analysis and process. *Department of mining Engineering, University of British Columbia, Vancouver*.
NHU, T. T., SCHAUBROECK, T., HENRIKSSON, P. J., BOSMA, R., SORGELOOS, P. & DEWULF, J. 2016. Environmental impact of non-certified versus certified (ASC) intensive Pangasius aquaculture in Vietnam, a comparison based on a statistically supported LCA. *Environmental pollution,* 219**,** 156-165.
OLSEN, M. S. & OSMUNDSEN, T. C. 2017. Media framing of aquaculture. *Marine Policy,* 76**,** 19-27.
OSMUNDSEN, T., STØRKERSEN, K. & FENSTAD, J. 2012. I storm og stille–havbruksbedriften som næringsaktør og politisk aktivist i norsk kystsoneforvaltning. *Kampen om Plass på Kysten: Interesser og Utviklingstrekk i Kystsoneplanleggingen, eds B. Hersoug and JP Johnsen (Oslo: Universitetsforlaget),* 224.
OSMUNDSEN, T. C., AMUNDSEN, V. S., ALEXANDER, K. A., ASCHE, F., BAILEY, J., FINSTAD, B., OLSEN, M. S., HERNÁNDEZ, K. & SALGADO, H. 2020a. The operationalisation of sustainability: Sustainable aquaculture production as defined by certification schemes. *Global Environmental Change,* 60**,** 102025.
OSMUNDSEN, T. C. & OLSEN, M. S. 2017. The imperishable controversy over aquaculture. *Marine Policy,* 76**,** 136-142.
OSMUNDSEN, T. C., OLSEN, M. S. & THORVALDSEN, T. 2020b. The making of a louse-Constructing governmental technology for sustainable aquaculture. *Environmental Science & Policy,* 104**,** 121-128.
OVERMAN, S. & VAN THIEL, S. 2016. Agencification and Public Sector Performance: A systematic comparison in 20 countries. *Public Management Review,* 18**,** 611-635.

614 OWEN, J. R. & KEMP, D. 2013. Social licence and mining: A critical perspective. *Resources Policy,* 38**,**
615 29-35.
616 PEDERSEN, E. R. 2006. Making corporate social responsibility (CSR) operable: How companies
617 translate stakeholder dialogue into practice. *Business and Society Review,* 111**,** 137-163.
618 PORTNEY, K. E. 2015. *Sustainability*, MIT Press.
619 PRNO, J. & SLOCOMBE, D. S. 2012. Exploring the origins of 'social license to operate'in the mining
620 sector: Perspectives from governance and sustainability theories. *Resources Policy,* 37**,** 346-
621 357.
622 QUIGLEY, R. & BAINES, J. 2014. How to improve your social licence to operate.
623 RAYNER, J. & HOWLETT, M. 2007. Caught in a staples vise: The political economy of Canadian
624 aquaculture. *Policy and Society,* 26**,** 49-69.
625 VIFELL, Å. C. & SONERYD, L. 2012. Organizing matters: how 'the social dimension'gets lost in
626 sustainability projects. *Sustainable development,* 20**,** 18-27.
627 VINCE, J. & HAWARD, M. 2019. Hybrid governance in aquaculture: Certification schemes and third
628 party accreditation. *Aquaculture*.
629 VON GEIBLER, J., LIEDTKE, C., WALLBAUM, H. & SCHALLER, S. 2006. Accounting for the social
630 dimension of sustainability: experiences from the biotechnology industry. *Business Strategy*
631 *and the Environment,* 15**,** 334-346.
632 WHITMARSH, D. & PALMIERI, M. G. 2009. Social acceptability of marine aquaculture: The use of
633 survey-based methods for eliciting public and stakeholder preferences. *Marine Policy,* 33**,**
634 452-457.
635 WHITMARSH, D. & WATTAGE, P. 2006. Public attitudes towards the environmental impact of salmon
636 aquaculture in Scotland. *European Environment,* 16**,** 108-121.
637 YTRESTØYL, T., AAS, T. S. & ÅSGÅRD, T. 2015. Utilisation of feed resources in production of Atlantic
638 salmon (Salmo salar) in Norway. *Aquaculture,* 448**,** 365-374.
639 ZHANG, A., MOFFAT, K., LACEY, J., WANG, J., GONZÁLEZ, R., URIBE, K., CUI, L. & DAI, Y. 2015.
640 Understanding the social licence to operate of mining at the national scale: a comparative
641 study of Australia, China and Chile. *Journal of Cleaner Production,* 108**,** 1063-1072.

642