

Social Inclusion in Impact Assessment: A Case Study in the Mining Context of Cusco, Peru

by
Heather McTavish

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Approval

Name: Heather McTavish

Degree: Master of Resource Management (Planning)

Title: Social Inclusion in Impact Assessment: A Case Study in the Mining Context of Cusco, Peru

Report No. 713

Supervisory Committee:

Chair: **Richard Farthing-Nichol**
Master of Resource Management Candidate

Sean Markey
Senior Supervisor
Professor

Gretchen Ferguson
Supervisor
Lecturer

Date Defended/Approved: November 26, 2018

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Abstract

Mining projects can have significant social, economic and environmental impacts on local communities. The increasing number and scale of mining projects has resulted in increasing social resistance by local communities, who demand more meaningful involvement in the decision-making process, equitable benefits and greater protection from negative impacts. This research studies the intersection of impact assessment and sustainable community development within resource development contexts. This paper develops a new framework, the Integrated Inclusive Impact Framework, in order to co-create, with communities, a more holistic and inclusive system to identify and measure the impacts of resource development projects on community well-being, as well as test the effectiveness and appropriateness of participatory engagement methods, specifically for rural contexts in developing countries. This research employs a qualitative study design, conducting case studies in the Department of Cusco, Peru, in two *Campesino* communities, and collects data through household surveys, semi-structures and informal interviews and focus groups. This research finds that the by conducting impact assessment in a more inclusive and integrated way, it reveals more complex and dynamic interactions between community actors, as well as varied priorities. The proposed framework was successful in identifying and visualizing the community as a heterogeneous actor and was able to capture that there are groups, opinions and values that are not typically integrated in impact assessment. The findings demonstrate that through flexible participatory engagement methods, the co-creation of indicators, and recognizing and integrating local, traditional and experiential knowledge, diverse community perspectives for impact assessment can be more adequately and accurately integrated. This paper concludes by recommending engaging with and beyond official leaders, building trust and practicing reciprocity with communities in order to facilitate more meaningful and inclusive engagement processes and robust impact assessments.

Keywords: Impact Assessment, Social Inclusion, Community Sustainable Development, Knowledge Systems, Resource Development

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List of Acronyms

4Cs	The 4Cs Framework for Human Well-Being
BZH	Beyond Zero Harm (Framework)
CBA	Community Benefit Agreement
CCF	Community Capitals Framework
IA	Impact Assessment
IIIF	Inclusive Integrated Impact Framework
PP	Principled Participatory (Approach)
SCD	Sustainable Community Development
SD	Sustainable Development
SIA	Social Impact Assessment
SLO	Social License to Operate

1. Introduction

Mining projects can have significant, positive and negative, social, economic and environmental impacts on local communities (Cheshire, Everingham, & Lawrence, 2014; Lewis & Flynn, 2016). The scope of environmental impacts is generally well defined and understood, and include air quality, water quality/quantity, land quality and ecological impacts (Jain, Cui, & Domen, 2016). These impacts can vary in scale and intensity, and often affect economic and social spheres therefore, affecting human well-being and the sustainability of local livelihoods (Franks, 2012).

In recent years the global mining industry has faced increasing social discontent and resistance to mining projects from local communities and international human rights activists. This resistance has been felt most intensely in developing countries, as communities demand more equitable benefits and meaningful involvement in the decision-making process, as well as greater protection from negative social, economic and environmental impacts associated with mining operations (Bebbington & Bury, 2009; Loayza & Rigolini, 2016; Prno & Scott Slocombe, 2012). Technological advances over the past two decades, coupled with governance shifts in the global mining sector can help explain this trend (Gordon & Webber, 2016; Paredes, 2016; Prno & Scott Slocombe, 2012). Technological advances in mining engineering and technologies allow for mineral deposits in more remote places to be mined at profit (Paredes, 2016). Moreover, the adoption of neoliberal economic policies by state actors has exacerbated existing governance gaps. This has made it more difficult for developing countries to effectively mitigate the impacts, and distribute the benefits of mining projects, that are increasing in number and scale (Gordon & Webber, 2016; Prno & Scott Slocombe, 2012).

Industry has made efforts to gain a 'social license to operate' (SLO) through corporate social responsibility (CSR) initiatives. A social license, in broad terms, is the general community approval of a resource development project to take place (Harvey & Bice, 2014; Owen & Kemp, 2013). Industry claims that they can obtain, maintain and renew this social license, through investing in community programs and responding to social and environmental concerns through implementing Social and Environmental Management Plans (Owen & Kemp, 2013). Companies can then voluntarily report and disclose this information in order to increase transparency in their operations, which has

resulted in international reporting agencies such as the UN Global Compact and the Global Reporting Initiative (Dingwerth & Eichinger, 2010; H. Jenkins & Yakovleva, 2006). However, despite these efforts, social conflict and resistance continues to rise (Harvey & Bice, 2014).

Within this context, the purpose of this research is to study the intersection of impact assessment for resource development projects and how that fits into the broader picture of sustainable community development. This research seeks to contribute to the overall goal of developing inclusive impact assessment frameworks for human well-being, that meet the needs of diverse actors. This research study achieves this goal by developing and operationalizing a framework, the Integrated Inclusive Impact Framework, inclusive impact assessment (IA) in the Peruvian mining context, and incorporates diverse community perspectives and priorities in a holistic and meaningful way. Through two case studies the following three research questions are addressed: 1) How can impacts on human well-being be measured inclusively with communities in resource development areas; 2) How does the applied framework engage with, and include community priorities for improved well-being; 3) To what extent does the applied framework address identified considerations of inclusivity for impact assessment?

This research contributes to impact assessment and community development planning theory and practice by providing much needed analysis and field testing of inclusive measures and engagement methods. This research provides a more holistic and inclusive system to measuring the social impacts of resource development projects and recommendations on effective and appropriate community engagement techniques, specifically in indigenous contexts in developing countries. It does so by proposing a new framework, The Integrated Inclusive Impact Framework (IIIF), which attempts to bridge the gap between traditional industry impact assessment and community development. Resource development can drastically transform a community, and thus we see it inextricably tied to sustainable community development (SCD) and planning. Therefore, the IIIF builds off of existing practical and innovative methods from community development and participatory planning approaches, such as an asset-based mapping approach.

Testing the IIIF through two case studies conducted in Cusco, Peru, in two Indigenous *Campesino* communities, provides insight into how people perceive their well-

being, agency and world to then co-create indicators and participatory engagement methods around those values and perspectives.

The structure of this report will begin with a broad overview of the study design and purpose, followed by a literature review (Chapter 2) that considers the current context for impact assessment, sustainable community development and social inclusion. Chapter 3 then describes how the proposed IIF was developed through an analysis of current frameworks, identifies gaps and considerations for inclusive IA, provides a rationale for developing a new framework and then details the key components of the IIF. Chapter 4 describes the research methods employed to test the proposed framework. Chapter 5 provides a description of the case study context and the two case study sites. Chapter 6 is an overview of the research findings. The Discussion, which analyzes the findings in the broader theoretical and practical context of sustainable community development in resource development areas, describing lessons learned for engaging communities and recommendations for implementing more inclusive IAs, following by research limitations and areas for future study, is in Chapter 7. Finally, Chapter 8 concludes this paper, followed by References and Appendices.

1.1. Study Design

This research employs a qualitative study design, uses a case study approach and collects data through household surveys, semi-structures and informal interviews and focus groups, using a principled participatory approach to develop indicators. In order to understand how impacts on human well-being were currently being measured, both outside and within resource development areas, a comprehensive literature review and scan of current impact assessment frameworks was completed. The purpose of this exercise was to better inform how communities were being engaged, or not, in decision-making processes with regards to potential impacts their well-being, as well as understand the key concepts of community well-being and sustainability. From this analysis it was decided that a qualitative study design through a case study approach would be most appropriate method for answering the types of questions this research was asking.

Qualitative research design was selected in order to capture a more dynamic and in-depth analysis of community members' perspectives. A case study was selected as the most appropriate approach as it allows one to focus on one unit of investigation at a deeper level of analysis, as well as permitting a comparison between two cases with similar

characteristics, with variable difference of the level of influence of mining. As described in Schensul & LeCompte (2013, p. 100), case studies are ideal for conducting a deeper analysis of a situation or process and asking 'what' and 'why' type questions (p. 101). A case study helps inform researchers and practitioners what is happening in these mining contexts and identify what is important to communities and what structural and contextual factors inform their actions, values and relationships (Schensul & LeCompte, 2013).

Existing literature and frameworks were used to shape the IIIF, which has two main components: the 'form' and the 'process'. The 'form' refers to what is being measured, or the criteria and indicators, whereas the 'process' refers to how those criteria and indicators are being developed and measures, referring to the participatory engagement methods employed to collect the indicator data. Selecting the appropriate indicators is crucial to capture social / cultural / environmental / economic impacts in a more equitable and transparent way. Therefore, particular attention was given to selecting a list of core and candidate indicators prior to field testing, with the idea of validating and co-creating the form and process with the communities. Through the field testing and employing various methods: household surveys, semi-structured and informal interviews and focus groups the data could be triangulated, and then validate the list of candidate indicators in order to best capture the various perspectives and interests of communities (Schensul & LeCompte, 2013; Yin, 2003).

More specifically, this research employed a Principled Participation (PP) Approach and used participatory methods in order for actors to identify what is important to them (Hochfeld & Bassadien, 2007). Through engaging actors using a bottom-up process to identify priorities, themes, and concerns, we were then able to better identify, develop and select appropriate indicators, always trying to ensure that the perspectives of participants were sufficiently and correctly incorporated. This has also been called the 'co-creation' of indicators in some literature and framework (The Devonshire Initiative, 2016). This approach emphasizes community participation, learning and reflection, and flexibility, as well as engaging diverse perspectives, not only leaders. It attempts to find the appropriate balance between an inclusive participatory process and expert-driven indicator development. This approach is discussed in more detail in Section 3.5.

The PP Approach was decided to be the most appropriate way of collecting data in this context, rather than plainly asking them what specific indicators were important for their well-being. By asking them about their priorities, concerns and perspectives we were

able to draw out what truly is most important to them, as well as keeping it understandable and accessible across cultures and knowledge systems. Moreover, we wanted to practice reciprocity, a key component of Andean culture, we wanted to provide the community with a product from our research. We used the IIF to collect data on the current state of well-being of the community and wrote up community reports as an input for their community planning processes. Chapters 3 and 4 will describe in more detail how the framework was developed and how each of the methods was applied.

2. Literature Review: Developing Inclusive Impact

Assessments

This section reviews the topics required to answer the research questions. The IIF attempts to address the gaps in impact assessment by bringing in methods from community development and participatory planning, such as asset-based mapping. The first section, 2.1 introduces the socio-political context of mining and then discusses impact assessment (IA), from its origins to its evolution up until today. Section 2.2 relates IA to Sustainable Community Development (SCD), which is defined in detail, incorporating several components such as: social sustainability, social inclusion and community planning. Section 2.3 defines the term 'Inclusivity' and how it is applied for the purposes of this research study. Section 2.4 and 2.5 discusses and summarizes key gaps and considerations for IA, in order to provide a full picture of the status quo and what are some of the challenges to inclusive IA in order to guide the development of the framework. Both of these bodies of literature were mutually informative in identifying the gaps and considerations for inclusive impact assessment (discussed in Sections 3.2.3 and 3.2.4 respectively) as well as framework development.

2.1. The Socio-Political Mining Context

2.1.1. Community Relations and Social License to Operate

The social, economic and cultural impacts of mining projects are largely being managed through industry's community relations strategies, rather than regulatory requirements, which Kemp (2009) defines as focused "on building relationships in order to meet business objectives, which is first and foremost, secure access to land and mineral resources." (p. 203). Increasing pressure from international human rights organizations as well as the emergence of Socially Responsible Investment Funds has resulted in top-down, corporate level strategies to manage community relations processes, which are often inward looking and prioritize risk management and compliance, over a value driven mentality (Kemp, Boele, & Brereton, 2006). As companies attempt to acquire a social license, often through community development projects and stakeholder engagement, it is easier for global

companies to have standard requirements across all operations in order to make their operations more comparable and transparent (Kemp et al., 2006).

Social license to operate (SLO) is a term that is commonly used in the resource development sector, but this term is largely intangible and not well understood. Typically, SLO has been understood and used by industry as a term that evokes community approval for an operation or a project (Burse & Whiting, 2015; Harvey & Bice, 2014; Owen & Kemp, 2013). This definition implies that one unanimous actor is giving approval to the proponent. In practice, it has been recognized that stakeholder opinions are varied, and not everyone is going to agree with the project. The main approach industry has taken to achieving SLO is through social development programs, where the company provides a number of social or community programs in exchange for the community's consent for the project (Harvey & Bice, 2014; Owen & Kemp, 2013).

The development of standard procedures has led to a wide range of social impact management systems, varying by company, country requirements and investor requirements. The majority of the tools and frameworks as well as guidebooks and reports are often not designed for operations managers, who are handling social issues on the ground, but are targeted at corporate-level managers who are responsible for developing strategies for addressing social and economic development issues (Responsible Mining in Peru: Partnerships for Development, 2013). The one-size-fits-all corporate level strategy is based on the conventional "Plan Do Check Act" cycle for production, which does not capture the complex social dimensions associated with mining (Kemp et al., 2006).

The current discourse in theory, policy and practice is moving towards using SLO as a more flexible term. SLO cannot be defined by regulations, rather it needs to be developed collaboratively at the local level and must be obtained and consistently maintained throughout the life cycle of the operation, and is often tied to the legitimacy of the operation (Harvey & Bice, 2014). New approaches to SLO emphasize a collaborative process, that is based on the comprehension of local socio-cultural values where, "communities and developers are obliged to work through processes of listening, understanding each other's concerns and interests, and reaching compromise." (Harvey & Bice, 2014, p. 332). Local communities may actually prefer a collaborative SLO approach to a legislated SIA because it requires listening to specific local level concerns.

Harvey & Bice argue that SLO can better achieved through ‘collaborative moderation’, a process of:

“working directly with project-affected stakeholders to achieve accommodation and agreement on issues that are of priority in the local context, as opposed to attempts to respond to an array of deemed universal issues set by regulators and exogenous agencies” (Harvey & Bice, 2014, p. 328)

The literature shows a consensus that the social impacts of mining will largely depend on the specific local context as well as the stage of the project’s life cycle (D. M. Franks & Vanclay, 2013; Kemp, 2009; Kemp et al., 2006). They stress the importance of considering local political and social processes and structures, human and social capitals, social cohesiveness, previous mining experiences and the expectations of the mining project (Harvey & Bice, 2014; Kemp, 2009; *Responsible Mining in Peru: Partnerships for Development*, 2013). They argue that a way forward for the mining industry is to incorporate “elements of the conventional management systems model into a more externally-focused, stakeholder-driven and values-based approach” (Kemp et al., 2006, p. 401) as well as emphasize the importance of outcomes and impacts.

2.1.2. Impact Assessment

An impact assessment (IA) can be defined as the “process of identifying the future consequences of a current or future action. The “impact” is the difference between what would happen with the action and what would happen without it” (Lawrence, 2013, p. 5). This definition implies a cause and effect relationship, where future conditions will change based on an intervention, however it is impossible to predict with certainty, and thus IA also involves managing risks and the ability to adapt to unanticipated changes (Lawrence, 2013).

Environmental Impact Assessments (EIAs) have become standard practice by industry (and as requirements by governments for approval of extractives investment), there are many gaps in what kinds of information is included (notably in socio-cultural impacts) and the fact that many stakeholders (especially local communities and especially indigenous populations) are not satisfied with the process or outcomes of such assessments (Kemp, Owen, Gotzmann, & Bond, 2011; Loayza & Rigolini, 2016). Further, while mining companies have begun to include social considerations in addition to

environmental impacts in their reporting, more work needs to be done in this area to incorporate a full range of the impacts on local populations and that involve the people affected in designing and measuring impacts (Franks, 2012; Kemp, Boele, & Brereton, 2006).

A social impact assessment (SIA) has been defined as “the processes of analyzing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change invoked by those interventions” (Vanclay & Esteves, 2011, p. 4). SIAs are often nested within Environmental Impact Assessment requirements and may be weighted less than biophysical impacts and select socio-economic impacts, such as employment and infrastructure (Lawrence, 2013; Mackenzie Valley Review Board, 2005). Moreover, depending on whose interests are defining SIAs the treatment of decision-making and redistribution of power can vary greatly, from being technical and scientific to more collaborative (Lawrence, 2013).

To understand the political and practical implications of IA (including SIA), its definition needs to be teased out further. IA is a flexible process that can either foster collaborative decision-making, or be exclusionary and undermine social justice (Lawrence, 2013). Institutional arrangements can ensure that the process is transparent and inclusive; however, these arrangements are often more voluntary and general than prescriptive. The purpose of IA is to inform decision-making, and therefore should involve a process where interested and potentially impacted actors collaborate to conduct the assessment. “The links between IA and decision-making mean that the exercise and allocation of political power is inherent to IA practice” (Lawrence, 2013, p. 5). Thus, it is crucial to consider how values, goals and objectives are manifested within an IA, either implicitly or explicitly.

Current academic discourse is moving away from the traditional IA approaches, which have failed to adequately address the complexity of local contexts and conditions, and towards a more holistic assessment that place social sustainability at its core (Kemp et al., 2011; Vanclay & Esteves, 2011). Social sustainability is nested within the paradigm of ‘sustainable development’, which will be discussed in the next section 2.2.

Within the context of impacts from resource development projects, impacts can be thought of as *results of change*. Mining projects will bring about social, economic and environmental changes for local communities, the degree in which those changes, create positive or negative impacts, can depend to some extent, on how they are managed

(Franks, 2012). In order to better understand what potential impacts mining projects may have on communities, Franks (2012) has organized these changes into 4 broad categories: social and cultural; socio-economic; socio-environmental.

There are many challenges associated with the practical implementation of SIA that has limited its widespread application and effectiveness as a tool. The SIA principles, criteria and methods are not standardized, and have been driven by top-down processes to mitigate operation risk and meet the funding requirements of shareholders, as opposed to, meaningful engagement with the actors that will be affected by these projects (Kemp, 2009; Kemp et al., 2006; Owen & Kemp, 2013; Vanclay & Esteves, 2011). SIA implementation has been critiqued by many academics, who suggest that: 1) the process lacks meaningful consultation, participation and collaboration amongst key actors (Owen & Kemp, 2013); 2) it privileges scientific and western knowledge systems over local traditional knowledge (Himley, 2014); 3) and treats the community as one homogenous actor, even though women and minority groups may feel disproportionate negative effects of mining projects, and are often excluded from decision-making (Franks, Christian, & Shlegher, 2013; Jenkins, 2014; Kemp, 2009).

2.1.3. Impact Assessment in Peru

Under Peruvian legislation, SIAs are a part of an Environmental Impact Assessment (EIA), which is legally required for project approval (Castro, 2001). However, there are no guidelines on how SIAs should be conducted and what should be included (*Ley del sistema nacional de evaluación de impacto ambiental y su reglamento*, 2001). Furthermore, there is a lack of information concerning to what extent they are conducted, as companies are not required to disclose the contents of EIA and SIA to affected local communities and the general public (Castro, 2001; Franks & Vanclay, 2013; *Ley del sistema nacional de evaluación de impacto ambiental y su reglamento*, 2001). While there is increased voluntary disclosure and transparency in international arenas, this has not transformed into meaningful civil-society empowerment at the local level and is generally not reinforced by legislated regulations (Dingwerth & Eichinger, 2010; Kemp, 2009). In addition, community frustrations are exacerbated by a legal system which does not provide a means to remedy their grievances (Guzmán Solano, 2016). Hence, the current status quo provides ripe conditions for social discontent, as communities continue to feel that their views, opinions and values are not being adequately incorporated into EIA and SIA process, yet are bearing the majority of the costs and receiving few of the benefits from

large-scale mining projects (Chen, Yang, & Liu, 2015; Cheshire et al., 2014; Harvey & Bice, 2014; Loayza & Rigolini, 2016; Prno & Scott Slocombe, 2012).

Research suggests that industry must begin to de-construct their top-down, risk-management approach to SIAs, and begin engaging with other stakeholders in a more inclusive and collaborative way, to close the gap between theory and practice (Owen & Kemp, 2013; Prno & Scott Slocombe, 2012). While there is extensive literature on SIA and local stakeholder engagement, more work is needed to address how social inclusion, meaningful multi-actor engagement, and more comprehensible disclosure could transform this process. There are a handful of new academic frameworks, however there is limited literature on if or how they have been implemented, and if they are appropriate. The literature shows a consensus that, social impacts of mining, whether they are negative or positive, or sometimes both, will largely depend on the specific local context as well as the project's life cycle (Franks & Vanclay, 2013; Kemp, 2009; Kemp et al., 2006).

Through a more inclusive process, SIAs can provide a base for starting a process of meaningful engagement between industry, communities, government and other actors. It can support communities to negotiate more benefits and robustly assess the local concerns of potential mining impacts on their communities. The benefit for governments in standardizing SIAs, could provide a way to measure macro social economic indicators, environmental impacts, royalties, as well as how much mining is contributing to the country's Sustainable Development Goals (Lewis & Flynn, 2016). Lastly, for companies, it can help foresee or mitigate protests, saving companies millions of dollars in lost operating costs when mining operations are halted due to conflict (source).

2.2.Sustainable Community Development

The literature on corporate social responsibility and social impact assessment suggests that frameworks being used for community development planning could be adapted to resource development contexts to measure human and social impacts (*Responsible Mining in Peru: Partnerships for Development*, 2013; Vanclay & Esteves, 2011).

Sustainable community planning is rooted within the paradigm of 'Sustainable Development' (SD), a term coined in 1989 by the Brundtland Commission, which contains three core pillars: environmental, social and economic. It is based on the premise that current development should not inhibit the well-being of future generations (Roseland, 2012). The SD concept can be applied to community planning by ensuring that community

plans address human well-being. It is transferable across cultures and languages and can provide a starting point for planners and the community to think about the community's assets and areas to improve (Ferguson (Hernandez), 2015). Sustainable Community Development (SCD) balances the complex dynamics between ecological limits, social equity and economic activity at the local level (Connelly, Gismondi, Markey, & Roseland, 2016; Roseland, 2012). Furthermore, SCD be viewed as a continuum of 'weak' to 'strong', where 'weak' SCD works within the system to uncover solutions, but fails to challenge the paradigm itself. Whereas 'strong' SCD challenges concepts and paradigms, searching for innovative solutions to help propel a paradigm shift (Connelly et al., 2016). In practice, SCD has largely been 'weak', as it respects existing power structures and employing step-by-step measures that have in some cases struggled to address issues of inequality, environmental protection etc. (Connelly et al., 2016).

Employing sustainable community planning methods provides the latitude to incorporate a suite of community components. Not only the economy, the environment and infrastructure, but also to incorporate less tangible 'place-making' elements, such as culture, social fabric and human capital (Markey, Halseth, & Manson, 2008).

2.2.1. The Community Capitals

The concept of community capitals has been widely used within the field of SCD in order to conduct asset-based mapping, including in the Livelihoods Approach, the BZH and the Community Capitals Framework (CCF). Asset-based mapping focuses on recording, harnessing and utilizing the current strengths and assets of the community in order to develop a unique path towards development (Ferguson (Hernandez), 2015).

The 'capitals' refer to key blocks within a community that are required for SCD. The various frameworks use anywhere from four to six core capitals. The CCF uses 6 capitals, as described in Table 1. This framework has been successfully used to engage rural indigenous groups in Bolivia (Ferguson (Hernandez), 2015). The tool is used to support communities in decision-making about the potential impact of particular projects and to assess and monitor the impacts of projects on all dimensions of local well-being - economic, social and environmental (Roseland, 2012). The CC Framework further has the potential to foster discussion amongst actors by collecting early-stage data and opinions on how the community views a project. This could be useful in pre-mining processes of

consultation, engaging community participation, and providing baseline data for future impact assessments (Ferguson (Hernandez), 2015).

Table 1. The Community Capitals Framework

Natural - includes both non-renewable, such as fossil fuels and minerals, and renewable resources
Physical – is the infrastructure that helps people meet their basic needs such as housing, access to clean water, unspoiled food, and a supply of energy
Economic - financial and business resources
Human - knowledge, skills, competencies and other attributes embodied in individuals
Social – connectedness, relationships, organizations
Cultural – shared experience manifested in values, language, celebrations.

(Telos Centre for Sustainable Development, 2012)

2.2.2. Social Sustainability

Over the last 30 years, there has been considerable attention paid to addressing the economic and environmental pillars of sustainability, with the social pillar often playing a secondary role. In part, this is a result of social sustainability being less tangible and an undertheorized concept (Missimer & Rob, 2017). However, in recent years there has been a resurgence to recognize the importance of social sustainability in its own right, but also to achieving environmental and economic sustainability (Missimer & Rob, 2017; Vallance, Perkins, & Dixon, 2011).

Social sustainability’s definition has been debated through academic discourses, however it is fundamentally concerned with human well-being, and “Processes that generate social health and well-being...and the social institutions that facilitate environmental and economic sustainability, now and into the future” (Dillard, Dukon, & Brennan, 2013, p. 2). Human well-being is inextricably linked to sustainability. It involves all three pillars: the economy, environment and social. The identified key dimensions of human well-being within the literature are: health, culture, social, economic, governance (Kaplan-Hallam & Bennett, 2017). Missimer and Rob describe social sustainability as a

system or a network of dynamic interactions between individuals and collective actors that changes over time (Missimer & Rob, 2017). They identify 5 key ingredients for social sustainability: diversity, learning, self-organization, common meaning and trust (Missimer & Rob, 2017, p. 36).

However, other academics describe social sustainability from a different angle, emphasizing the role social sustainability plays in interactions with the other two pillars of sustainability: the economy and the environment. Social sustainability can be thought as of “the social conditions necessary to support ecological sustainability” (Vallance et al., 2011). In other words, the process of building connections between people and the bio-physical environment (Vallance et al., 2011).

In this context, social sustainability may be defined as dynamic processes that:

1. Involve individual and collective actors, where diversity, learning and trust are critical
2. Generate human and social health and well-being, now and in the future
3. Build connections between people and the bio-physical environment

2.2.3. Social Inclusion

A key component to achieving social sustainability is social inclusion. Social inclusion refers to the ability of an individual or group to participate “in the basic political, economic and social functioning of their society”. In order to achieve social inclusion, it is critical to understand the factors that lead to social exclusion. It is important to think of social inclusion and exclusion as opposites of a single dimension, or a spectrum that ranges from high social inclusion to high social exclusion with varying degrees in between (Burchardt, Le Grand, & Piachaud, 2002). The concepts of social inclusion and exclusion focus on access to economic, political and social institutions, and how access to those resources is distributed equally or unequally (O’Campo, 2004; Oxoby, 2009). Social exclusion does not occur for one specific reason, rather it is a combination of factors that are often compounded and perpetuated over time. Some of the key factors relating to social inclusion are:

- *Social Capital*

Increasingly the literature is highlighting social capital and how it relates with social cohesion, economic opportunities, social integration and power, as a key component of

social inclusion and exclusion (Buvinić, 2004; Hayes, Gray, & Edwards, 2008; Oxoby, 2009; Shortall, 2008) . Shortall (2008) defines social capital as “a dense network of civic engagement, that produce a capacity for trust, reciprocity and cooperation, which in turn leads to a healthy economy and a healthy democracy” (Shortall, 2008, p. 455). Furthermore, she suggests that social capital requires social inclusion, because it cannot develop if people are not willing or able to participate.

- *Economic Opportunity*

Social exclusion has been historically defined strictly in terms of poverty. However, more recent literature understands that poverty is often a consequence of economic and social exclusion, rather than a cause of it. Thus, it is important to think in terms of access and economic opportunities, that result in relative poverty (Buvinić, 2004). Relative poverty, or in other words, economic inequality, such as access to education or decent employment, then becomes a key dimension of social inclusion or inclusion (Oxoby, 2009).

Social exclusion, within the contexts of developing countries, and with specific regards to Peru, is deeply entrenched in society as a result of colonial legacy, where highly stratified social systems were developed along ethnic and religious lines (Gordon & Webber, 2016). Moreover, the structural adjustment programs of the 1980s, and neoliberal development policies have failed to promote inclusive development and have maintained the status quo of capitalist development that favours a ruling class minority (Gordon & Webber, 2016; D. Porter & Craig, 2004). Unstable economic growth or growth that fails to create quality employment opportunities, most negatively affects poor and marginalized populations (O’Campo, 2004). High levels of unemployment, temporary jobs and contract work without social security, all increase the chances of exclusion (O’Campo, 2004; Oxoby, 2009). Moreover, difficulty entering the workforce and lack of access to income and social institutions, which is prevalent amongst young people, can also lead to social exclusion (Oxoby, 2009).

- *Political Engagement*

Political engagement, or lack thereof, is the third dimension of inclusion. This refers to the individual or group involvement in local and national level decision-making (Burchardt et al., 2002). The literature highlights a shift occurring in governance approaches that can foster and facilitate inclusivity, specifically of historically marginalized and excluded groups. The processes of ‘new governance’ actively involves citizens in building their

government, through a quasi-legislative and quasi-judicial governance process (Bingham, Leary, Blomgren Bingham, Nabatchi, & O'Leary, 2013). This new approach, which engages actors through multiple mechanisms and tools, such as group circles, dispute resolution mechanisms, e-democracy, public conversations and participatory budgeting, could be a useful measure of social inclusion (Bingham et al., 2013).

More specifically, in the context of Latin America, the increasing constitutional and legal recognition of ethnic and cultural diversity and indigenous rights, is an important factor to fostering political engagement and thus favourable conditions for social inclusion (Pacari Vega, 2004). Pacari (2004) states that indigenous social inclusion needs to be considered from two perspectives: first, indigenous groups are included in national political discourse and participate in the economy and; second, indigenous leaders represent their communities through local level decision-making.

It should be noted that the majority of the discourse around social inclusion and the role of government focuses on policies and providing recommendations to government on how to devise policies that do not only address poverty alleviation, but the various dimensions of social exclusion (Atkinson & Marlier, 2010; Buvinic, 2004; O'Campo J.A, 2004; Oxoby, 2009). Degrees of social exclusion may vary across geographical areas, however there are general trends in terms of how exclusion is manifested across and within social groups, namely ethnicity and gender.

- *Ethnicity*

Social exclusion along ethnic lines has been particularly prominent in Latin America, specifically with indigenous and Afro-descendants. Ethnicity can be defined as “mother tongue, parental background, race and religion...traditions and culture.” (Torero, Saavedra, Ñopo, & Escobal, 2004, p. 223).

In Peru, discrimination and exclusion based on ethnicity, appearance, language and religion is both explicit and implicit. Statistics show that the poverty level amongst populations who speak Quechua, Aymara or other native languages is 74%, compared to the average poverty level of 54% (Torero et al., 2004). Moreover, a study completed by Torero et al. (2004), found that there were significant differences in access to education and income between those with lighter and darker skin tones.

- *Gender*

Gender based exclusion is understood to be universal across regions, specifically in the economic dimension, as men have been seen as the traditional breadwinners of the household and childcare costs and availability can affect a woman's ability to access the labour market and receive a fair wage. The World Economic Forum's Report on Gender Gap ranks Peru 80 of out 144 countries for gender imparity. While, there is relative parity between men and women with regards to education and health, there is a significant imparity when assessing economic participation and opportunity, with women earning 51% less than their male counterparts for similar work (Hausmann & Tyson, 2017). Moreover, political empowerment is even more limited, at 0.19 on a scale from 0.00 (Imparity) to 1.00 (Gender parity) (Hausmann & Tyson, 2017). While this data does not disaggregate to cultural, ethnic or religious groups, it is likely that women that are marginalized based on ethnicity are likely to be doubly disadvantaged (Silver, 2004).

- *Stigma and Discrimination*

Poverty, a result of social exclusion, can result in further exclusion through stigmatization, where social groups highlight the negative differences between them, creating an 'us' vs. 'them' mentality. However, social groups with little power cannot stigmatize others, thus "power differences are at the core of stigma" (Buvinić, 2004, p. 8). Discrimination is a product of stigma, "resulting from societal imposed or 'self-discrimination' where the legacy of past discrimination discourages individuals from seeking certain jobs...and advocating their rights." (Buvinic et al., 2004, p. 9). This has resulted in wage discrimination and disparity of women, indigenous and Afro-descendants in Latin America. In addition, Oxoby (2009) notes that poverty and stigma may lead to behavioural adaptations, such as increased crime and drugs in order to survive. If individuals and groups do not have access to the economic and social institutions required to generate an income, which in turn fosters more discrimination and social exclusion by those with agency.

Individuals or groups may suffer from cumulative disadvantages if they have one or more features of exclusion, such as an indigenous woman. Social exclusion is not inevitable however, but it is a social process that has spatial and transgenerational dimensions which make it difficult to change (Buvinić, 2004).

3. Framework Development: The Inclusive Integrated Impact Framework (IIIF)

In order to answer the three research questions posed in Chapter 1, a new framework for engaging communities and measuring indicators is proposed. The purpose of this chapter is to explain how the Inclusive Integrated Impact Framework (IIIF) was developed and the rationale for doing so. Section 3.1 defines inclusivity for the purposes of this research. This definition of inclusivity is then applied in Section 3.2 to review and conduct an analysis of current IA frameworks, where a set of gaps and considerations for Inclusive IA are identified to inform the research moving forward. Section 3.3 provides the rationale for developing a new framework, as opposed to using an existing framework and, section 3.4 describes the key components and the selecting and validating of criteria and indicators for the Inclusive Integrated Impact Framework.

3.1. Defining Inclusivity

From the literature review a definition for 'Inclusion' for IA was developed for the purposes of this research. The *inclusivity* dimension of this research refers to two important considerations – inclusivity in form and inclusivity in process:

1. **Form:** That the measurement framework and indicators are inclusive of a wide range of integrated dimensions that impact human well-being, such as clean environmental conditions, economic opportunities and capacities, cultural resilience, and safe, healthy communities. In addition, that the measurement framework and indicators include the aspirations, knowledge, and priorities of people who are typically marginalized or excluded from decision-making or economic opportunities due to gender, age, ethnicity, socioeconomic status, etc. In particular, there is a need to include gender, indigenous, and age-related considerations in the measurement framework.
2. **Process:** That the measurement methodologies facilitate meaningful, effective collaborative and participatory processes to identify indicators and to carry out IAs. Such processes can facilitate collaboration between actors (collaborative

governance) and ensure inclusion of the priorities and interests of women, youth and indigenous populations (social inclusion).

Both of these dimensions are essential for inclusion in IA, and you cannot have one without the other.

3.2. Analysis of Current Frameworks for IA

3.2.1. Literature Review

A literature review was conducted at the beginning of this study (See Chapter 2) to provide background information on the main research question: “How can impacts on human well-being be measured inclusively with communities in resource development areas?”

3.2.2. Comprehensive Scan of Current Frameworks for Social Inclusion

Based upon the literature review on impact assessment and inclusion, A scan and analysis of current impact assessment frameworks was conducted based on the definition of inclusivity above. This scan created a matrix that analyzes 28 frameworks, developed by industry, government agencies, NGOs and academics, using 8 criteria for social inclusion¹:

- Who is the target audience for this framework?
- Who decided on or designed the measures?
- What is the process involved to carry out the measurements?
- What gets measured?
- Whose perspective or interests are incorporated?
- Is gender, age, cultural dimensions incorporated?
- What is the level or scales of analysis?
- What resources are required to carry out the measurements?

The key take-aways from this analysis are:

- That many of the frameworks developed by industry or industry associations are driven by global standards which emphasize standardizing processes in a top-

¹ See Appendix A – Current Impact Assessment Frameworks Analysis

down and quantitative manner, which leads to results that may not reflect the community's needs and goals. These frameworks include: *Strategic Community Investment: A Good Practice Handbook for Companies Doing Business in Emerging Markets*; *Measuring Impact Framework*; *Global Reporting Initiative*; *Measuring Socio-Economic Impact*; and *Measuring Community Impact Using the LBG*.

- Many frameworks view the community as one homogenous stakeholder. While many frameworks disaggregate gender and sometimes culture, age is often not considered, and all three dimensions are often not explicitly considered within one single framework.
- Many frameworks provide little information on how the criteria and indicators were selected.
- Many frameworks provide little guidance as to how to carry out the assessments. Moreover, the degree to which a participatory approach is employed is often left to the discretion of the implementer.

From this analysis, three frameworks stood out for their focus on inclusiveness: *The Community Capitals Framework (CCF)*; *The 4Cs Framework for Human Well-being (4Cs)* and; *The Beyond Zero Harm Framework*. From this scan, coupled with the literature review a list of gaps and considerations for inclusive impact measurement was created to inform how to proceed with identifying inclusive indicators and process for IAs.

3.2.3. Gaps in Impact Assessment

From the literature review several gaps have been identified in impact assessment for extractive sectors. These gaps are:

- Lack of standardized principles, criteria and legal frameworks for conducting impact assessments
- SIAs are an industry response to pressure from international agencies and NGOs, and are expert-driven processes that have not been validated by communities²

² Appendix A. Shows the matrix analysis conducted of Current Impact Assessment Frameworks based on 8 criteria of inclusivity.

- Industry reporting tends to focus narrowly on socio-economic impacts of social investment projects (employment, infrastructure, local procurement) but not on the well-being of the community as a whole
- Indicators being used are quantitative and may not be inclusive of social, environmental and cultural dimensions
- Processes of conducting impact assessments are not participatory in practice and do not tend to foster collaborative planning and governance

3.2.4. Considerations for Inclusive Impact Assessment

Based on these gaps, there are many considerations when deciding on the form (criteria and indicators) and process (methodology) of an IA framework in resource development contexts. These considerations draw on the broader literature from IA and SCD in the international development and renewable resource management sectors. Each of these considerations is further outlined below, in terms of how these issues translate into inclusive indicators (form) and inclusive methods (process) for IA.

Inclusivity in Form

- *Indicators conceal the political and theoretical origins and have replaced political discourse with technical expertise, which has implications over power relations between countries (global North and South) as well as between actors, such as industry, government and civil society (Merry, 2011).*

Indicators have become popular in governance and the development sector, as they “convey an aura of objective truth and facilitate comparisons” (Merry, 2011). Parallels can be drawn between indicators and the overall IA process, where those who design them, ultimately control the outcomes as their values, interests and objectives are seamlessly woven in. Merry’s analysis notes that, “It is striking that all of the global governance indicator projects I have looked at are created in the global North—which sets the agenda, names the indicator, and assembles the criteria—while data collection typically takes place mostly in the global South.” (Merry, 2011, p. 89). This analysis provides a strong justification for this research, with its core purpose to better unmask political and theoretical origins of indicators.

- *Inclusive indicators and better measures could help reduce inequalities between actors by incorporating different knowledge systems, such as incorporating traditional, local and experiential knowledge from the Andean indigenous communities into IA.*

However, this acknowledges that the current power structure is still reinforced, as traditional knowledge *feeds into* the western science approach, which implies it is still inferior, rather than equal to western science. It is important to consider Maustrad's reflections on the 'cherry picking' of local knowledge in natural resource management, and seeing local knowledge holders as the 'research assistants' rather than the principle investigators (Maustrad, 2000). As Maustrad describes:

“Indigenous knowledge is oral, intuitive, and holistic, while scientific knowledge is analytical, literate, and reductionist. Furthermore, indigenous knowledge systems are likely to recognize long-term cycles and include the inexplicable, whereas science relies on hypotheses, theories and laws. Finally, organized, institutional structure for creating scientific “truths” gives science credibility while making indigenous knowledge appear anecdotal and unsubstantiated.” (Maustrad, 2000, p. 139).

Due to the complexity of mining contexts and the power dynamics on a local and global scale, this research is designed to be a step towards incorporating local, traditional and experiential knowledge into IA.

- *As acknowledged by other researchers in this area, incorporating indigenous and other holistic world views into criteria and indicators is often overlooked because it is challenging (Adam & Kneeshaw, 2008; Satterfield, Gregory, Klain, Roberts, & Chan, 2013)*

Those who control the approach and design, control the outcomes and ultimately define what social impacts are (Satterfield et al., 2013). Therefore, particular attention will be given to the selection, sharing and validating processes for the criteria and indicators. Moreover, the tangible and intangible qualities of impacts will be considered, as several may be intricately linked to the local communities' Quechua culture. Respondents may resist measuring aspects of cultural on a scale, therefore it will be important to include both qualitative and quantitative measures, and subjective and objective measures (Breslow et al., 2016; Satterfield et al., 2013).

- *Social, economic, and environmental changes and impacts are interlinked, need to approach measurement holistically (Franks, 2012).*

This means that measurements must incorporate multiple dimensions of well-being – including the conditions that contribute to well-being and the capabilities to act and make decisions to address quality of life.

- *The community must be seen as heterogeneous.*

Comprised of diverse actors, some of which may be excluded from decision-making and feel a disproportionate amount of the negative impacts, such as women, youth and ethnic and religious minorities (K. Jenkins, 2014; Keenan, Kemp, & Ramsay, 2016; Kemp, 2009; Li, 2009)

- *Indicators must be flexible and constructed in a language that best represents the local understanding of the objective (Satterfield et al., 2013).*

This is a potential challenge for this research, is combining the world views, objectives and priorities of specifically industry and communities, into one framework that is useful for multiple actors. This challenge should be mitigated by using a bottom-up approach to identifying priorities and goals and then empirically testing those indicators through a participatory process (Reed, Fraser, & Dougill, 2006). We recognize that for the length and purpose of this study, it will not be possible to implement the entire collaborative and adaptive process outlined by Reed et al. (2006), however, recommendations for the implementation of the developed Framework can include this type of adaptive model.

- *Difficulty in operationalizing indicators in unique local contexts.*

SIAs have been driven by top-down risk management and a global push for more transparency from industry, therefore there has been a shift from industry to standardize their processes into a 'one-size-fits-all' approach, to compare statistics across operations (Kemp et al., 2006). This favours an expert-driven approach, where participation from communities is limited. The shortcomings of this approach are beginning to be realized, and frameworks such as the BZH are attempting to marry a standardized approach with a bottom-up approach. This permits for IAs to be compared across operations but also

reflect the uniqueness of each context and give the communities and meaningful role in selecting and measuring indicators (*Beyond Zero Harm Framework*, 2016).

Inclusivity in Process

- *The failure to address power dynamics within a collaborative process could undermine efforts and reinforce advantages of the elites (McDougall & Ram Banjade, 2015).*

It is important to recognize the negotiating power of actors. Participants with higher economic power tend to manipulate the process, hindering the opportunities for trust between participants, or bypassing the participatory process all together to get what they want without collaborating (Cullen, McGee, Gunton, & Day, 2010; Porter, Franks, & Everingham, 2013).

- *Trust and social capital are critical to the success of participatory and collaborative processes.*

There is a challenge and delicate balance between taking the time to develop relationships and earn trust and meet the demand for a high turnover rate or decide on a time sensitive issue (Porter et al., 2013).

- *Prescriptive legislation and institutional arrangements can help redistribute power in IA processes.*

It is critical to consider the current political climate within which the process will operate. Political will, or lack thereof, can help or undermine the effectiveness of participatory processes through prescriptive legislation (Boyd, 2012; Lawrence, 2013).

- *It is not only important to consider who and how the measures are designed, but once the process is complete, who has access to that information.*

Access to information is somewhat nested within considering the contextual institutional arrangements, and goes beyond the scope of this research, however it is a critical consideration to ensure effectiveness (Dingwerth & Eichinger, 2010).

The analysis of current IA practices and frameworks informed how we should move forward with this research in order bridge some of the identified gaps and contribute to the

body of literature and community of practice. The next section describes the rationale for developing a new framework as opposed to using an existing one.

3.3. Rationale

After conducting the literature review and scan of current frameworks to identify key gaps and considerations for inclusion in IA, we decided that we needed to develop a new framework to test our research questions. Our rationale for developing a new framework, rather than using an existing one was for two reasons. First, there were several frameworks that had key components of inclusion, but none of them included both components: the form and the process, and therefore would not be sufficient for testing all of the research questions. Specifically, the existing frameworks had not considered both a Gender and an Age Lens. Second, there was no framework that had been developed for resource development contexts that explicitly focused on inclusivity or integrating local, experiential and traditional knowledge into IA processes. The Beyond Zero Harm Framework does have some key process elements, such as the co-creation of some indicator components, however cultural capital is not specifically incorporated into the framework. The literature and current frameworks provided some excellent building blocks in terms of tested frameworks and provided a wealth of key gaps and considerations to then embark on developing an IA framework with social inclusion at its core. The following section describes how we used the literature review and the scan of current frameworks to select the components of the IIIF.

3.4. The Inclusive Integrated Impact Framework

This section describes the proposed framework that was developed as a result of the identified gaps and considerations for inclusive impact assessment. 3.4.1 describes the integrated components, 3.4.2 explains how the framework integrates both expert and local and experiential knowledge, and 3.4.3 describes the framework's approach to incorporating the Gender and Ages Lenses.

The IIIF is comprehensive, broad and deep in terms of the information collected and the ways of clustering and analyzing the information collected. This framework allows actors to see and understand dynamics in the community in multiple ways and with integrated components. The purpose was to test the framework through case studies, to co-create indicators and test the effectiveness of the engagement methods.

It is designed to be used:

- for inclusive planning processes (engaging communities in assessing their values and priorities for development and goal setting);
- for inclusive measurement of the impact of particular projects or investments on human well-being and;
- to pre-assess and discuss the potential impact of a proposed project on human well-being in order to adjust design accordingly.

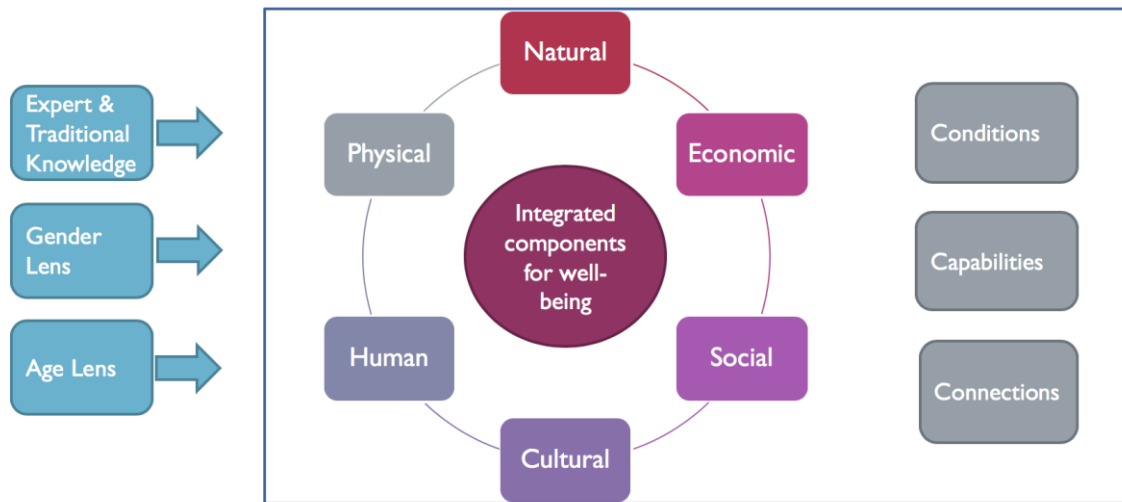


Figure 1 The Integrated Components of the Inclusive Integrated Impact Framework

3.4.1. Integrated Components

The IIIF is a nested framework, that moves from broad components of human well-being down to specific measurable indicators. The 6 Community Capitals represent the key components of human well-being and the broad areas of assessment. The capitals are: human capital, natural, physical, economic, human, social and cultural.

The Community Capitals are then integrated with the three Constituents, which measures conditions, capabilities and connection of actors within the community to gain a deeper view of the impacts of projects and investments. The 3 Constituents are adopted from The 4Cs Framework for Community Well-Being (Breslow et al., 2016) and are:

- *Conditions* – refers to the circumstances in which human and environmental needs are met. These are tangible qualities of the environment, economy, and human health

- *Connections* – Refers to connections between humans, actors and the environment, and can be tangible and intangible qualities
- *Capabilities* – Refers to the factors that enable individuals and groups of people to act meaningfully to pursue their goals, including activities, knowledge systems, participation and governance

For example, we would not only measure the existence of schools in the community, but the ability of local children to attend that school in financial and logistical terms. Another example is that there may be significant forested area in a community (conditions) but we also need to know about people's legal right to participate in making decisions about the use of that forest (capability).

The attributes are more specific descriptors, such as 'food security' or 'community governance', which have a corresponding indicator or two to measure that attribute. Figure 2. shows the nested framework and provides examples of each element. The nested approach is then further broken down by integrating expert and experiential knowledge.

3.4.2. Integrating Expert and Experiential Knowledge

The IIF recognizes the relevance and validity of both expert and experiential (and/or local and/or traditional) knowledge. We posit that incorporating both forms of knowledge created the best possible understanding of a system and its components and dynamics (Moller, Berkes, Lyver, & Kislalioglu, 2004; Ross & Pickering, 2002). The framework will allow for both scientific (expert) driven knowledge and local (experiential) knowledge to be incorporated and valued through use of quantitative and qualitative indicators, and through the use of recognized expert-developed indicators alongside indicators co-created through participatory processes with non-experts (community members with lived experience of the place). Experiential knowledge is also gathered by engaging the perspectives of diverse community members and using a Gender and Age Lens.

3.4.3. The Gender and Ages Lenses

The framework incorporates a Gender and Age Lens through the use of gender and age specific indicators, some of which are co-created with the community based on the focus groups and interviews, and through focus groups and interviews conducted in women-only or youth-only spaces to allow for the particular perspectives and priorities of women and youth to be included.

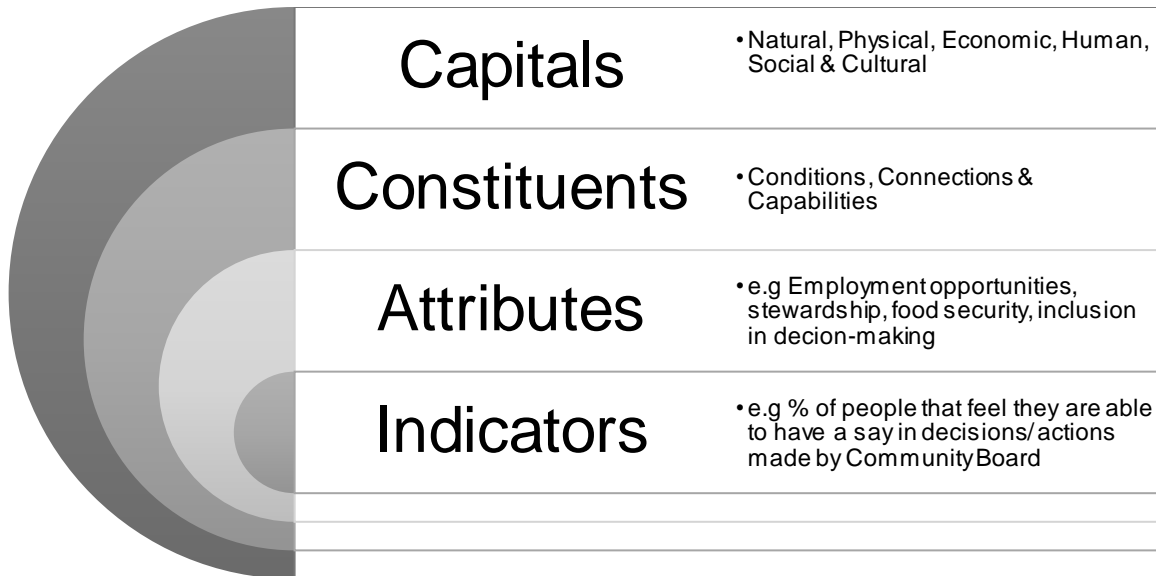


Figure 2. The Components of the Inclusive Integrated Impact Framework

(Adapted from the Community Capitals Framework – Roseland 2012, and the 4Cs Framework, Breslow et al. 2016)

The components of the IIIF described in this section, integrating the: Community Capitals and the 4Cs; expert and local and experiential knowledge; and the Gender and Age Lenses, set the foundation for how the IIIF is operationalized. The following section 3.5 describes how the criteria and indicators were selected and validated, prior to Chapter 4 describing in detail the methods of how the IIIF was tested in the field.

3.5. Selecting and Validating Criteria and Indicators

This study employed a Principled Participatory (PP) Approach to indicator development. In order to both ensure that indicators are comparable across geographical locations, as well as knowledge systems, it is important to have objective indicators that are externally observable features (Hochfeld & Bassadien, 2007). However, it is also critical to have a number of subjective indicators. Subjective indicators are how people perceive their well-being. This method of mixed indicators can facilitate a comparison between the two and provide a richer assessment of how those indicators may differ across social variables (*Beyond Zero Harm Framework*, 2016; Breslow et al., 2016).

This approach emphasizes actor participation, learning and reflection, and flexibility of indicators, as well as engaging diverse community perspectives, not only

community leaders. This approach attempts to find the appropriate balance between an inclusive participatory process and expert-driven indicator development. Hochfeld and Bassadien (2007) state that it is not our role as ‘experts’ to assume that we know what needs to be measured, yet recognize that practically and logistically due to time, budget and levels of education, the ability of participants to develop indicators themselves is not feasible or appropriate. The BZH takes a similar approach, emphasizing the importance of workshops and semi-structured interviews to capture the priorities and concerns of diverse community members, which are then ‘translated’ into indicators by an expert and validated by the community, so that the indicators are seen as legitimate (*Beyond Zero Harm Framework*, 2016, p. 36). The indicator development itself is likely to be expert-driven, but a bottom-up approach to identify priorities, themes, and nodes with participants tries to ensure that researchers have adequately captured community perspectives. Lastly, this approach requires that researchers openly acknowledge that their position influences the indicators selected and a commitment to reflecting the communities’ experiences and concerns (Hochfeld & Bassadien, 2007; Merry, 2011).

Indicators were screened by using Breslow et al.’s (2016) ‘steps to operationalizing the 4Cs Framework’ by reviewing existing indicators and assessing them to develop a “short list of candidate indicators” prior to field-testing (Breslow et al., 2016, p. 257). The screening process involved drawing on indicators from: The Beyond Zero Harm Framework (*Beyond Zero Harm Framework*, 2016, p. 57), the Community Capitals Scan Tool (Telos Centre for Sustainable Development, 2012), Ferguson (Hernandez) (2015), Franks (2012), and the database of social indicators from The 4Cs Framework for Human Well-being (Breslow et al., 2016) The process for developing indicators was an iterative process.

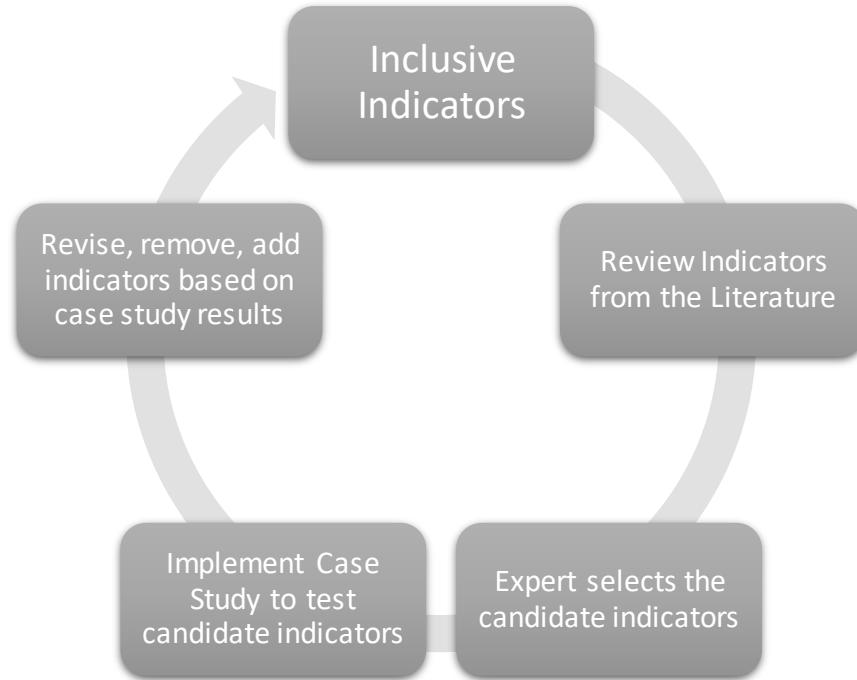


Figure 3. The Principled Participatory Approach to Developing Indicators

The table below shows the IIIIF components in a way that organizes the Attributes by the corresponding Constituent within each of the Community Capitals in order to easily organize the indicators. It was then identified which methodology would test each of the indicators, as will be discussed in Chapter 4.

Table 2. The Inclusive Integrated Impact Framework (Capitals, Constituents and Attributes)³

The Inclusive Integrated Impact Framework	
Constituents	Attribute
Natural Capital	
Conditions	Physical land base
	Quality/ health of natural environment
	Water quantity and quality
	Soil
	Minerals
Connections	Aesthetic & leisure value created by nature
Capabilities	Stewardship
	Participatory decision-making over land use/ resource use
Physical Capital	
Conditions	Energy (electricity and gas)
	Telecommunications (phones, internet)
	Existence of hospitals and health clinics
	Public Services
	Roads & Transportation

³ See Appendix C for the full table with indicators, finalized after field-testing and data analysis.

Economic Capital	
Conditions	Employment Opportunities
	Economic Diversity
	Production capacity
	Storage and Processing facilities
	Investment from Mining Activities
	Market Access
Capabilities	Job Stability
Human Capital	
Conditions	Access to Healthcare
	Fertility rates
Capabilities	Food Security
	Use of traditional medicine
	Education
Social Capital	
Conditions	Peace and Security
Connections	Social Organizations and Associations
	Social Relations (social fabric and inter-community relations)
Capabilities	Inclusion in Decision-making at Local Levels
	Inclusion in decision-making with External Actors
	Degree of Collaboration with other actors

Cultural Capital	
Connections	Connected to Place
	Cultural Heritage, Values and Practices

This chapter has described the rationale and methodology for developing the proposed IIIIF in order to conduct IAs in a more inclusive and integrated way. It has proposed components for the Form, what to measure, such as a variety of criteria and indicators for human well-being and sustainable community development, as well as integrating expert and local knowledge and gender and age lenses. The rationale is that it is important to capture a wide scope of potential impacts, not just selective dimensions, such as environment and the economy. Moreover, communities are heterogeneous, and diverse community actors may have different priorities and perspectives and feel the impacts, negative or positive, to a different extent of other social groups. The next chapter, Methods: Field-Testing, will describe how this proposed 'Form' of the IIIIF, what to measure, is operationalized through 'Process', or how criteria and indicators are measured through meaningful community engagement and the co-creation of criteria and indicators.

4. Methods: Field-Testing

Chapter 4 describes the individual field-methods employed in order to field-test the proposed IIF developed in Chapter 3. Section 4.1 describes in detail the data collection methods: 4.1.1 Household surveys 4.1.2 Semi-structured and Informal Interviews; 4.1.3 Focus Groups and; 4.1.4 Access to the communities. Section 4.2 then describes the methodology and criteria for selecting case study sites. Finally, Section 4.3 describes the methods for data analysis after the data collection had been completed.

4.1.Data Collection Methods

This section describes the field methods, the household surveys, semi-structured interviews, focus groups, and how they were applied in order to test the IIF.

The field testing had two purposes:

- 1) to test, validate and co-create the indicators and;
- 2)) to see which methods of engagement were most effective for eliciting this information with communities in this context. It should be noted that different methods were used depending on the context of the community, which will be discussed in more detail in Chapter 5, Case Study Context.

Table 3. Summary of Research and Engagement Methods

Research Method	Participatory Engagement Method	Application of Method
<i>Pre-field Testing</i>		
Literature Review	N/A	Review of peer reviewed literature on: sustainable community development; impact assessment; community planning; social inclusion; indicator development
Scan of Current Frameworks	N/A	Review of current IA frameworks by inclusion criteria
<i>Field-testing</i>		
Household Survey	<ul style="list-style-type: none"> • BZH Co-creation of indicators/Principled Participatory Approach/ Steps to Operationalizing the 4Cs Framework • Open-ended questions and closed questions 	<ul style="list-style-type: none"> • 20 surveys were conducted in Case Study Site 1
Semi-structured and Informal Interviews	<ul style="list-style-type: none"> • Most significant change (emphasizing storytelling) • Informal conversations with community members related or not to the specific research questions 	<ul style="list-style-type: none"> • 5 semi-structured interviews were conducted in Case Study site 1, and many other informal interviews • 12 semi-structured and informal interviews were conducted in Case Study Site 2.
Focus Groups	<ul style="list-style-type: none"> • Drawing and storytelling (youth) • Community Capitals Scan Tool • Stoplight Method • BZH Co-creation of indicators/Principled Participatory Approach/ Steps to Operationalizing the 4Cs Framework 	<ul style="list-style-type: none"> • 2 focus groups were conducted in Case Study Site 1 (1 with youth and children, 1 with adults)

The pre-field-testing methods were described in detail in Chapter 2 and Chapter 3, and therefore will not be described further in this chapter.

4.1.1. Household Surveys

The purpose of the household survey was to engage beyond community leaders to determine well-being within the community. This research's focus of social inclusion requires that in addition to community leaders, the experiences and impacts felt by those community members that have less political clout and may be socially marginalized, have their experiences and perspectives incorporated in IA. The surveys complement the focus group and interview data with quantitative statistics, to provide robust results (Yin, 2003).

The surveys were conducted orally in Quechua or Spanish, with the man and/or the woman of the household. The purpose of the survey was explained to them and their oral consent was recorded if they agreed to participate. If they did not want to participate we just moved onto the next house. The household surveys were only conducted in Case Study Site 1. Twenty surveys were completed over a four-day period, by going door to door.

4.1.2. Semi-structured and Informal Interviews

Second, semi-structured interviews were conducted with a variety of local community actors. The structure of these interviews is informed and shaped by qualitative methods literature such as Spradley (1979), Yin (2003) and the Most Significant Change Method (Davies & Dart, 2005). The objectives of these interviews were to:

- a) identify priorities and values;
- b) determine knowledge sharing and interaction between actors (e.g. company and communities);
- c) identify how they would like to participate in decision-making and if they feel adequately consulted;
- d) identify goals, priorities and concerns, of different groups within the community, and;
- e) determine if the proposed framework and indicators are appropriate and compatible with the goals and values of the community

Guiding questions relating to the themes were prepared in advance to pursue a specific line of inquiry, however there was flexibility to allow for spontaneous questions and responses⁴ (Yin, 2003).

In Case Study Site 1 we recruited interview participants by asking the attendees at the adult workshop if they were interested in setting up a time (over the next 2 days) to interview them. In Case Study Site 2 we recruited interview participants by asking members at the community council meeting to speak with us if they were interested in setting up a time to interview them. Our community liaison also asked key community leaders if they would be willing to participate in an interview. We only interviewed those who approached us and wanted to speak with us, we did not seek out individuals or go door to door in this community.

In Case Study Site 1 we conducted 5 semi-structured interviews and in Case Study Site 2 we conducted 12. The reason for this discrepancy between the two case study sites is that semi-structured interviews were the only method of data collection employed in Case Study Site 2. In Case Study Site 1 fewer semi-structured interviews were conducted because data was collected by conducting household surveys and focus groups in addition to the interviews.

In addition to semi-structured interviews, we also conducted several informal interviews during our time in the communities. These conversations were impromptu conversations with community members who were interested in speaking with us and didn't necessarily have specific objectives. Sometimes they provided us with an opportunity to ask specific questions as identified in our semi-structured interviews methods, but other times it was just an opportunity to get to know people in the community and for them to get to know us. These informal interviews helped shape our understandings of the community and context and provided triangulation of our findings.

4.1.3. Focus Groups

The purpose of the focus groups was to understand and identify community goals and priorities for SCD. The goal was to elicit the experiences and the values of the groups and

⁴ See Appendix B for the complete list of interview questions.

understand what measurements make sense to them for improved well-being in the community.

Focus groups were only implemented in Case Study Site 1. Two were conducted; one with children and youth (approximately 60 participants) and one with women and men (approximately 20 participants).

4.2. Case Study Selection and Context

4.2.1. Case Study Selection Criteria

Several criteria, both research and logistical, were established to select the case study sites to test the IIIIF. This research was a part of a larger research project, The Co-Laboratory Peru Project, which had previously selected the Peruvian Andes as an area of research interest. The criterion are as follows:

1) Within the geographical region of the Peruvian Andes

The Peruvian Andes are a mining hot spot, with considerable influence of a number of international companies (*Responsible Mining in Peru: Partnerships for Development*, 2013). With regards to Canadian investment, in 2016 there was \$9.89 Billion CAD of mining assets and 58 Canadian mining companies operating in Peru (Natural Resources Canada, 2018). Peru faced sweeping deregulation and neoliberal economic policies in the 1990s which resulted in a 65% increase in foreign direct investment (FDI) in the mining sector between 2002-2007 (Gordon & Webber, 2016). Mining concessions increased from 2.4 million hectares in the mid-1990s, to over 18 million hectares by 2017 (Cooperación, 2017a). 38% of these mining concessions overlap with communal land held by Campesino communities (Cooperación, 2017b). Power structures prioritize FDI over livelihoods and social programs, resulting in the continued marginalization of the rural population, 48% of which are living below the poverty line compared to 21.7% of people nationwide (2017 data) (Gordon & Webber, 2016; *Pobreza monetaria afectó al 21,7% de la población del país durante el año 2017*, 2017). In 2017, 66% of all social conflict in Peru was caused by mining, a number which has remained consistent over the last few years (*22° Observatorio de Conflictos Mineros en el Perú Reporte Primer Semestre 2018*, 2018). These conflicts have resulted in violence and in some cases death, as well as the halting of mining operations (Bland & Chirinos, 2014).

2) *Be recognized as rural indigenous communities*

In order to test the IIIF for socially inclusive measures and capture the perspectives of traditionally excluded group, it was critical that the research was conducted in rural indigenous communities.

3) *Within the sphere of Influence of Large-scale Mining Projects*

The third research criterion was that the case study sites were within the sphere of influence of large-scale mining projects. Ideally, with a case study site within the direct sphere of influence of a large-scale mining project, and the other with an in-direct influence.

The literature doesn't define the spheres of influence of resource extraction projects. Moreover, companies do define the communities that they think should be included within the direct and indirect spheres of influence of their individual mining operation. Our definition goes beyond this to capture a more regional influence. While a community may not be affected by one or two particular mines it is geographically located within a region with a high level of mining activity. Figure 3. Defines the spheres of influence for the purposes of this research.

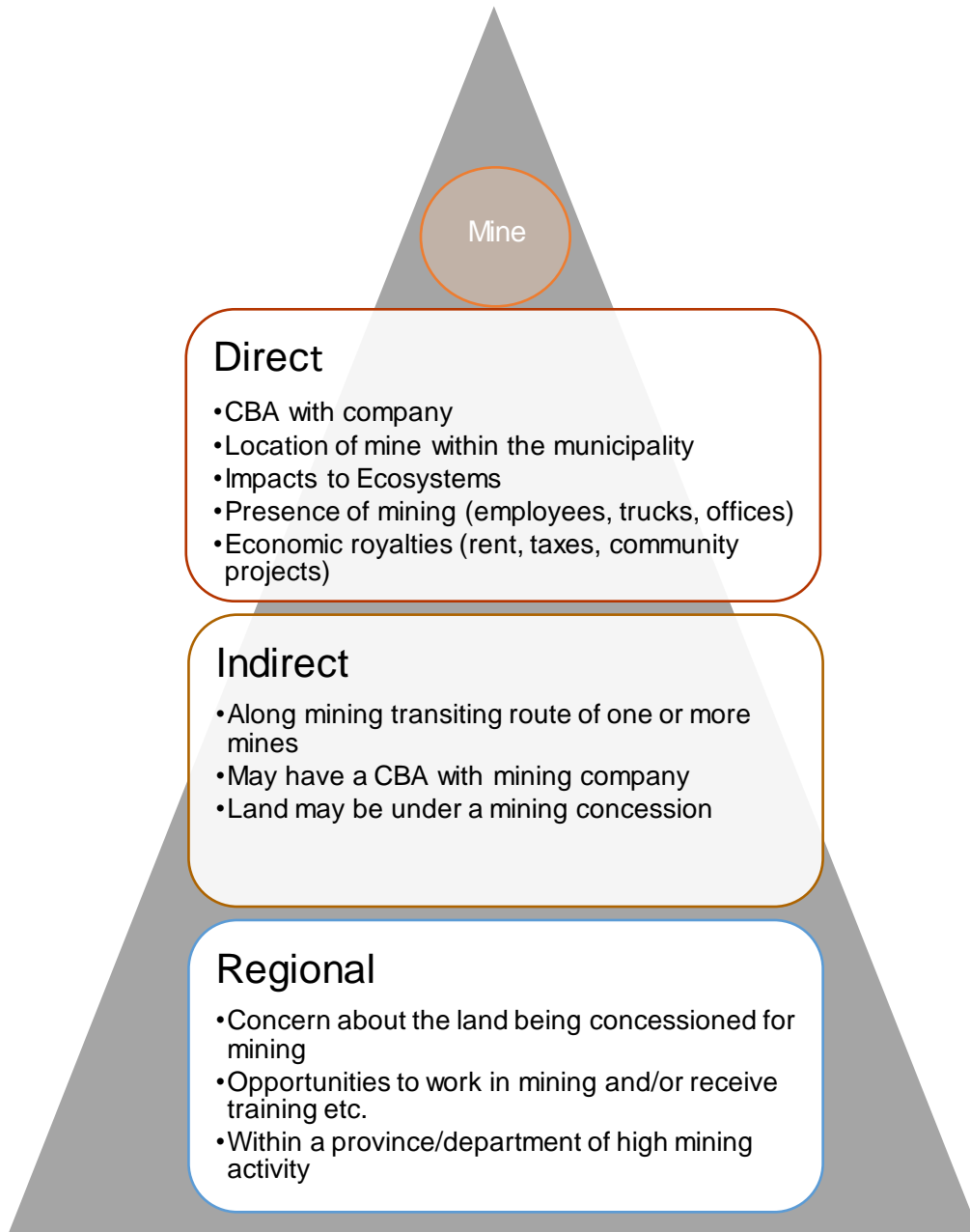


Figure 4. Scope and Scale of Impacts on Communities Within Mining Regions

Aside from the research criteria there were also several logistical criteria that we needed to take into consideration when working in this context. Therefore, the case study selection was also dependent on:

- Where we had contacts to introduce us to the appropriate community representatives
- Travel logistics of getting to the community and lodging options once there
- Written and/or verbal consent from community leaders to participate in the research project

The Department of Cusco provided a unique opportunity to assess the IIF, for several reasons. First, Peru has the largest silver and third largest copper reserves in the world, and Cusco is within the Andean mineral belt. There is significant mining activity in the area, with 14.8% of the territory with mining concessions, and several large scale mines (mainly copper) currently in operation, with more in the permitting or construction phases (*Región Cusco: Informe extraído del 22° Reporte del OCM, 2018*). Secondly, the majority of rural communities are indigenous of the Quechua identity, with a rich cultural heritage tied to their ancestral lands. These are people who typically have not had a voice or access to decision-making channels in the country.

This study selected two communities to participate in the testing of the IIF. In order to do a comparative case study to test the IIF, we selected one community that is in the direct sphere of influence of a large scale mine and another that is into the indirect sphere of influence. Moreover, we selected communities from the Peruvian Ministry of Culture's List of Campesino Communities.

4.3. Data Analysis Methods

Once the data was collected it was transcribed into written English, coded in NVivo and analyzed. The purpose of the field research was to test the IIF in terms of its inclusion in form and process. That meant to:

- Validate and co-create indicators that represent the values and priorities of diverse community members
- Ensure that the framework adequately includes indigenous-specific, gender-specific, youth-specific perspectives and priorities

- Test the appropriateness (is this method suitable for the circumstances?) and effectiveness (does this method collect the kinds of data we are looking for?) of the engagement methods in a rural indigenous, developing country context

1. Coding

Once the data collection was complete the interview notes and recordings were transcribed and translated into English. The transcriptions from the interviews and workshops were imported into NVivo and coded into nodes. The data sets were separated by community, and then each of the transcriptions was coded by Community Capital, and the Constituents (conditions, capabilities and connections). Throughout this process indicators were identified that did not adequately reflect what people were saying. Once the data was coded it was reviewed and triangulated, themes or priorities were identified as converging or diverging.

The household survey data was compiled separately. The data was transcribed and compiled into an Excel spreadsheet organized by question and household participant. Percentages were then calculated from the quantitative data and the qualitative comments were written out and incorporated into the NVivo data.

2. Analysis of the Relevance and Importance of the Indicators

From there, using the PP approach, we reviewed the indicators list, adding any of the priorities and concerns that were expressed by various community members. To analyze our data in relation to the candidate indicators, we took each indicator and assessed it according to three criteria using a scale of 1 to 5.

The criteria are:

1. *Empirically evident and measurable* – does this exist/apply in the local context? How easy is it to obtain this measure?
2. *Understandable* – The indicator is understandable to them (perhaps not exactly as it is written, but that they generally understand the purpose/concept)
3. *Important* – This indicator is important or a priority in the local context.

We then ranked each indicator by each of these criteria on a scale of 1-5.

Table 4. Indicator Ranking

Indicator Ranking				
1	2	3	4	5
Not at all	Somewhat	Moderately	Greatly	Absolutely

From this ranking, indicators were selected that we think as researchers, based on the data from the communities, are critically relevant to diverse community actors within this context, and that should be in the final framework. Any indicator that scored an average of less than 3.0 of 5.0, was removed. Indicators that could change according to context have been highlighted in a list of other indicators. 20 indicators were eliminated simply by removing duplicate indicators.

The final list of core indicators was reduced to 72 across the 6 Capitals for community well-being. While the literature on indicators suggests 30-40 indicators as an appropriate amount, we felt that all 72 of these represent important priorities and concerns of communities in this context, and are necessary if you are seeking to assess all areas of community well-being and from various perspectives. Moreover, the goal of the field-testing was to test a variety of indicators with the intention of removing, modifying and adding indicators through the ‘co-creation of indicators’ process, which may have resulted in more indicators than in other studies.

Once the final list of indicators was selected, those indicators were then re-organized within the component structure of the IIF which was revised post-field testing, in order to better capture the various aspects of the community.⁵

⁵ Appendix C shows the final list of indicators

5. Case Study Context

5.1. Study Context

Both case study sites were located in the Peruvian *Altiplano* or 'high plains', characterized by valleys and rolling mountains with predominantly grass vegetation. Both of the case study sites selected are over 3900m above sea level. These semi-arid landscapes have two marked seasons, the dry and the rainy seasons. Temperatures range from 20 degrees Celsius in the day, plummeting to a range of 0 to -15 degrees Celsius at night.

The majority of the communities in the region are self-identified and legally recognized as *Campesino* communities and speak their native language Quechua. As defined by the Peruvian Ministry of Culture, this means that at least 40% of the population's mother tongue is an indigenous language. A *Campesino* is a term used to self-identify as an Andean farmer. *Campesino* land title is given communally and cannot be bought or sold outside of the families within the community according to interviews with community members. These are agro-pastoral communities who depend on raising livestock and subsistence agriculture. Many of these communities live below the national poverty line, and many of the adults, especially the elderly, are illiterate (Instituto Nacional de Estadística e Informática, 2017)

Table 5. Summary of Case Study Site Profiles

Information	Case Study Site 1	Case Study Site 2
<i>Location (Cusco)</i>	Province of Canas	Province of Chumbivilcas
<i>Elevation</i>	3900m	4000m
<i>Population</i>	120 families	280 families ⁶
<i>Self-Identified Indigenous</i>	Campesinos, Quechua	Campesinos, Quechua
<i>Rural</i>	Rural	Rural (remote)
<i>Sphere of Mining Influence</i>	Regional	Direct

⁶ All of the data found refers to families, could not find a reliable source with number of individuals



Figure 5. Map of Peru highlighting Canas and Chumbivilcas where Case Study Site 1 and 2 are located respectively

5.2. Case Study Site 1 (Regional sphere of influence)

This small community is located in the Province of Canas, 120km or about 2.5 hours by bus to the city center of Cusco. The community itself is comprised of about 120 families all of which have their own stable and 1-4 hectares of land for agricultural use. The families primarily produce potatoes, barley and fava beans to sustain them throughout the year. Land tenure is communal, and they have land title and are registered with the Peruvian Ministry of Culture as a Campesino community.

Prior to 2012 the community relied solely on subsistence agriculture, with many of the men leaving the community during the rainy season to find work elsewhere. According

to interview participants, many men went to the Amazon to work in clandestine mines for minimal pay and in dangerous working conditions. Since 2012 the community has been engaged in a milk production project in collaboration with the municipality and help from a micro-finance organization. This has resulted in an important contribution to the families' cash income, as they are now able to sell cow's milk to the community owned and operated dairy processing facility. Families within the community have also started to raise guinea pigs to sell and occasionally for family consumption. Additionally, sheep are raised for their wool, and chickens for eggs, and a variety of crops are grown for household consumption.

The community has a school until Grade 6, and a community center. The closest stores, restaurants, internet café's, high school and dentist are located 5km away, and the closest health clinic is 2km away. Everyone in this community speaks Quechua, with the youth and some of the men speaking Spanish. Many women we spoke to, understood some Spanish but did not speak it.

5.2.1. The Research Context

Access to the Case Study Site 1 community was granted by permission from the Municipality, the President of the Dairy Producers Association, and the President and Membership of the Community Council to work in this community. The municipality provided an employee to facilitate the surveys, who works very closely with the community in dairy production and knows the families well and is trusted. This individual was a key gatekeeper into the community. Not only was he invaluable for providing introductions to families and translating from Spanish-Quechua, he also knew which families may be more apt to speak with us and what time of day to go to make sure they were home.

As a result of a contact trusted by the community introducing us to community members as well as visiting the community prior to conducting any research, made conducting research in this community relatively straightforward. This coupled with the fact that this community had had previous positive experiences with NGOs and foreigners provided an openness to collaborate in the research gathering process. This community viewed participating in the research as an opportunity to get advice and insight on their dairy production activities.

5.3. Case Study Site 2 (direct sphere of influence)

This community is located about 245km or 6.5 hours by car (8-10 hours by bus) from Cusco. Chumbivilcas is known for its vibrant Cowboy culture, particularly for raising fighting bulls.

This community is located 10km away from a large open-pit copper mine currently in operation with a capacity to ore 83 000 tonnes per day, and with an expected lifespan of 19 years (“Our Business Peru Constancia,” n.d.). The community is also 5km away from an abandoned copper mine, and small clandestine mines on the other side about 7km away. This community is located within a very active mining context, with or 74.31% (397, 674 hectares) of the Chumbivilcas land base has been concessioned to mining, with three new concessions being granted in this community in 2018 (*Región Cusco: Informe extraído del 22° Reporte del OCM, 2018*).

This community is home to about 280 families. Interview participants had identified that 5 years ago with the mine going into operation many people moved back to the community with the potential prospects for employment with the mine.

The town itself has a concentrated core, with the municipality, an office of the mining company, several families run convenience stores, an internet café, a restaurant, 4 lodgings, a primary and secondary school, a new community center, and a health clinic (limited days of attention per month). There are several more families living in the outlying areas. Many people have moved into the town core from their farmhouses. The average family farm size here is 10-30 hectares. Most people in this community speak Quechua, however the youth, women and men of all ages were comfortable conversing in Spanish.

5.3.1. The Research Context

Permission was granted before the the Community Council and membership in order to conduct research, as well as a written letter from the municipality. Not all of the research methods were employed in this community as a result of internal social conflict and sensitivities to foreigners, specifically Canadians.

The context of the community made conducting research more challenging. We arrived on the day when the monthly community assembly was taking place in order to explain the purpose of our visit and ask permission to conduct our research in front of the Community Council and approximately 80 community members. Individuals immediately

began to protest that we should not be permitted to conduct our research, referencing previous Canadians who had entered and not been truthful and transparent with their intentions. After some back and forth and hearing several concerns, we were told that we had been granted permission by the Community Council to conduct our research. After this meeting several people approached us expressing their interest to speak with us. Over the next few days it became clear that many people did not want us working in the community. People would agree to meet with us and then not show up and would actively avoid us. Some individuals were visibly upset when speaking with us, for example we attempted to speak with the leader of the Women's Group, to organize a focus group with women. She yelled at us and began to cry and spoke about previous Canadians who had come here, extracted information, bribed their children, had taken and uploaded their photos on the internet without their permission.

Through more and more interactions it became clear that there were divisive undertones in the community, and our presence and research had the possibility of exacerbating community tensions rather than improving them, which ran contrary to the purpose of our work. Therefore, despite the Community Council's interest in us conducting a community workshop to inform their planning processes, we decided to leave the community on the fourth day. We conducted interviews with people that expressed an interest in wanting to speak with us. We did not conduct household surveys as previous detailed surveys had been conducted previously. We attempted to hold a focus group with women, however, no one attended. We did not attempt to hold a focus group with youth, however we did speak with some through informal interviews. More details regarding the context will be further explained and discussed in Chapter 6 and Chapter 7.

6. Research Findings

This chapter outlines the main research findings from testing the IIIIF using the methodology outlined in Chapter 3. This chapter answers the first research sub-question: How does the applied framework engage with and include community priorities for improved well-being?

The findings are organized by the three main components of the framework (as seen below in Fig. 4). 4.1 Focuses on what was found out about communities' priorities for improved well-being through integrating and employing the CCF and the 4Cs. Overall, we found that communities have similar priorities and concerns: 4.1.1.1 environment, water and climate change; 4.1.1.2 education and employment opportunities and; 4.1.1.3 shows the findings by applying the Gender and Age Lenses and demonstrates that social inclusion is a priority of women and youth. Section 4.1.2 compares the communities and shows that despite having similar priorities, the two communities have very different conditions, and challenges to achieving improved well-being and development goals, those factors are primarily: 4.1.2.1 subsistence agriculture; 4.1.2.2 access to resources and; 4.1.2.3 social cohesion. The final section of this chapter, 4.2 summarizes the findings of integrating local, traditional and experiential knowledge.

6.1. Co-Create Indicators for Improved Well-Being

The first consideration for inclusive impact measurement is that a variety of dimensions for community and human well-being should be considered. The IIIIF used the umbrella of the six community capitals as a means to include community priorities for well-being, but sought to engage communities to identify how they interacted with dimensions of these capitals.

6.1.1. Community Values and Priorities: Identified Considerations for Measuring Well-being

One of the key goals of the IIIIF is to engage communities in assessing their values and priorities for human well-being in order to identify inclusive indicators to measure the impact of particular projects. Identifying specific values and priorities through the household surveys, semi-structured and informal interviews and focus groups allowed us

to then co-create, modify and rank candidate indicators into a final list. This section describes the identified priorities, concerns and challenges for improved well-being of each of the case study sites. We found that both case study sites had similar priorities and concerns: the natural environment, education and employment opportunities and social inclusion.

6.1.1.1. Environment - Water, Soil and Climate Change

We found that the number one priority and concern of women, youth and men in both communities was the natural environment. In particular, they were concerned about their water security, both quantity and quality of water, for use in their subsistence agriculture activities and dairy production. While both communities engage in management of their water resources through reservoirs, communal irrigations systems etc. it is not sufficient during the dry season for all of their needs and has a direct impact on their livelihoods. Without sufficient water for irrigation, they are unable to produce sufficient food for their cows and therefore, milk production drops almost 50%. Only 40% of respondents in the household survey Case Study Site 1 said they produce a sufficient amount of food for their cows.

There were also some concerns over the soil quality. When household survey respondents in Case Study Site 1 were asked about soil quality, 68.4% said it was reasonable, 21.1% said it was poor, and 10.53% said it was good. When asking what specific problems they were facing with their soil, 47% said lack of nutrients and 53% said change in climate – specifically rainfall patterns.

In both communities, various participants noted similar changes to weather patterns and climate that is directly impacting their water security. The household survey results from Case Study Site 1 found that 100% of respondents said they have seen changes in climatic conditions over the last 10 years. When asked what changes they had seen: 15% of respondents said 'heavier rain', 30% said 'rain comes earlier or later', 70% said 'more extreme temperatures - hot and cold'⁷. Interview respondents from Case Study Site 2 had similar observations, such as:

“The water has been reduced and the soil is worse. The climate has also changed. Before you could look at the clouds and know when it was

⁷ Note that many respondents listed more than one. These reflect the number one change they noted.

going to start raining, and if it would be a good year, and now you can't. It is harder to read the weather patterns. It rains harder now, and there is more soil run-off. The temperatures of more intense, there is more intense cold and more intense heat. White clouds should be in February. Before the rains were from October to March, now they are from January to June.” (Participant)

“The climate is also changing; it is hard to grow food now. Before the seasons were marked and you knew what the weather would be. There was a time for rain, for being hot and being cold, but now it is all mixed up. So, it is hard to grow the barley for the animals and grow potatoes for our own food.” (Participant)

“Producers need to put more effort to keep pushing milk and cattle production. The climate is also changing and it isn't producing good grasses and feed for cattle. We need a climate change adaptation project. Because of the swift changes in climate there are more infections and pests now.” (Participant)

As described by the Municipal employee, it is clear that people's livelihoods and the local economy are inextricably linked to the natural environment.

6.1.1.2. Education & Employment Opportunities

Both communities were concerned with education and employment opportunities for their youth and young adult populations. While education was a concern for men, it was of particular priority and concern for youth and mothers.

“The education that children in the community can access – at the local school and high school – is very poor. They can't compete to get into universities or any post-secondary studies. They are competing against youth raised in the city, who went to private academies, and have had access to books and internet all their lives. My oldest son has gone to Cusco to study in a private academy so he can re-write the entrance exams for university, as he could not get in. School was worse in the community previously. We didn't have a permanent space, they rented houses, often the teachers didn't come because it was difficult to get to the school especially in the rainy season. In the community, there is no library, no books. Some people have computers in their house, but no internet. Children have to go to [neighbouring town] to do their homework (on bike or bus, at night) The government doesn't care about us.” (Participant)

“Education has not improved – we have a good building but the teaching is not good. We want the teachers to be paid more so good teachers will come here.” (Participant)

Similarly, employment opportunities are another significant concern for the community, for men, women and youth. Youth identified wanting to leave their community to study and

then return, however it is difficult because there are limited employment opportunities. While this was a concern in Case Study Site 1, it was a frustration in Case Study Site 2, where community members felt that the mine was not providing sufficient employment opportunities. One participant said:

“Young people that stay in the community don’t have a lot of options for work so there is a lot of competition. The mine should be giving opportunities to everyone. At the beginning they told everyone that there would be work – but in the last 5 years ago that has all stopped.”
(Participant)

This will be further discussed below in section 4.4.2.

6.1.1.3. Social Inclusion

Women

Women were very vocal about their desire to be meaningfully included in community decision-making as well as take on more leadership roles. Two women stated:

“Youth are not really included in community decision-making. If a young person speaks up in an assembly of the community, the leaders and elders will often tell them to stop talking and tell them that they don’t know anything about the community and how it is run. The youth are not included, they used to have a Youth Association, but then the President decided that it wasn’t necessary, and so now there is no youth association in the community, there is no active and unified voice for the youth.” (Participant).

“When women go to the community assemblies, the men often tell us to go home. I ask my husband what happened, what they talked about, but he doesn’t tell me much. Sometimes he tells my ideas to the assembly and pretends they are his ideas. Sometimes I say to other women let’s go the assembly but they are afraid they will be sent home. But maybe they send us home because the women sit on one side and talk with each other and then when they ask their opinion they have no opinion. But maybe women have no opinion because they don’t go to meetings enough to know what is going on. Women vote for the Board every two years. Each person has one vote. There are no women on the Board.”
(Participant)

Youth

As mentioned in the section above economic development and water security were key priorities for all participants, yet the perspectives on how to achieve those priorities manifested itself differently amongst the youth, especially when it came to economic

development. Figure 5 demonstrates where the lenses overlap and diverge on priorities. For example, in Case Study Site 1, both the men and women saw economic development almost exclusively through improved dairy production, yet the youth did not. The youth, while eager to remain in their community, do not want to farm using the same traditional methods as their parents, they want more diversified employment opportunities. This speaks to a cultural element as well, as the adult men and women want to preserve the *Campesino* culture and see it changing with the younger generation. 82% of the household survey respondents said that community traditions and activities are changing with the younger generation. They stated that the youth do not partake in cultural traditions as often, are losing their traditional dress, and prefer to speak Spanish to Quechua. However, speaking with the youth, they are proud to be *Campesino* and wish to stay in their community, but would like some additional amenities and services – such as internet access, a community store and more recreational and green spaces. They want to get an education in the city and then return to the community, however, they understand that there are little employment prospects outside subsistence farming and dairy production.

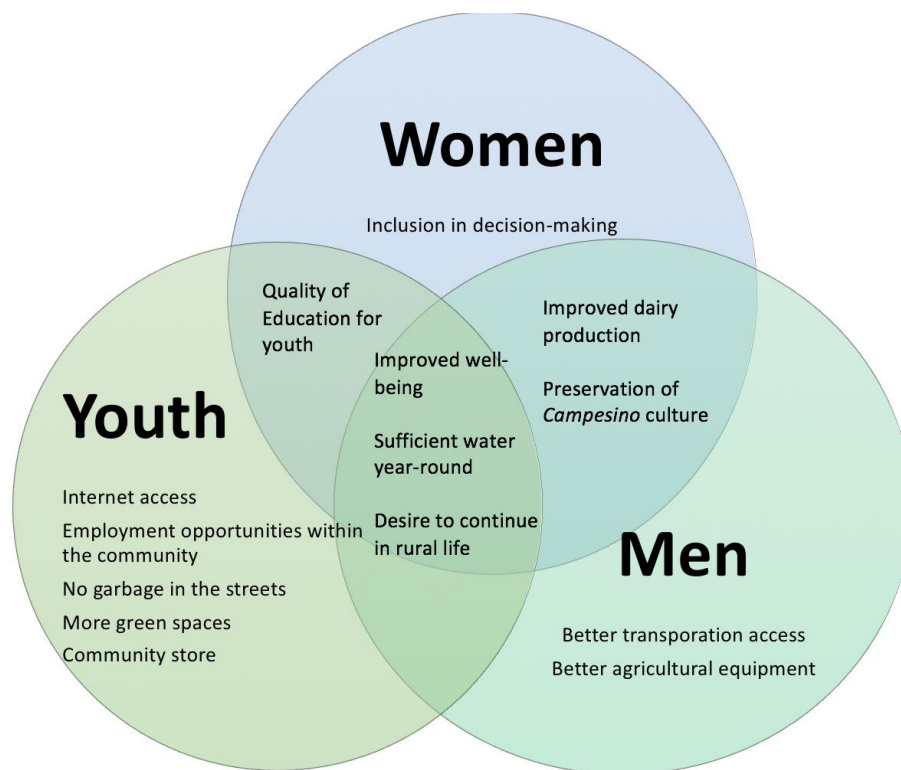


Figure 6. Similar and distinct priorities amongst youth, women and men within the communities

6.1.2. Community Conditions: Different Challenges

As a result of distinct conditions in each community, they both have their own set of challenges to achieve their priorities for improved well-being. The follow section compares and contrasts the two communities based on the application of the IIF.

The application of the framework not only revealed the priorities and concerns of the communities, but their current conditions, which will influence and impact, how they go about addressing their priorities and concerns. Based on the development history of these communities and their relative positions to large-scale mining projects, the two case study communities have very distinct challenges.

6.1.2.1. *Subsistence agriculture and the cash economy*

A key distinction between the two case study sites, is that in Case Study Site 1 we see an emphasis on the traditional subsistence agricultural economy and a collective community enterprise, and in Case Study Site 2 we see a transition to individualistic enterprises and a reliance on the cash economy.

In Case Study Site 1, 95% of the survey participants all of the community participants were subsistence farmers who still rely on producing at least half of their diet. Throughout the interviews and community workshop it became clear that the adults in the community want to continue with agriculture and milk production, but they are not particularly interested in economic diversification.

In the workshop they identified the following goals for the Milk Producers Association:

1. Improved cows and more cows (increase the number of good milking cows)
2. Better stables (milking machine, milking room)
3. Improved grasses and cow feed
4. Sufficient water by improving the dams in the lakes
(currently there isn't enough in the dry season)
5. New Dairy Plant with improve equipment and machines (automatic)
6. Get access to larger markets to sell cheese
7. Get business document approved (Business number and their health sanitation certificate)

8. Improve the quality of the cheese and therefore the selling price
Increase the price paid to the farmers for each litre of milk

In Case Study Site 2 there were several indications that the community was moving to a more diversified economy, less reliant on subsistence agriculture. For example, many families now live in the centre of town without animals and go to their farms only on the weekends. Moreover, one community member described some of the new economic opportunities that have been brought by the mine:

Some people have transport, restaurant and other small businesses. They were able to put up businesses with start-up funds from [the company], but they are private businesses - family run – not community run. More of the money should be shared. We want capacity building and orientation for business development and administration. [The company] has more demand for local service providers, but the community doesn't have the capacity currently to provide them, but they want to. (Participant)

6.1.2.2. Access to Resources

The two sites also have different access to various resources. Case Study Site 1 has had more access to training and capacity building resources (NGO and municipality) as well as closer proximity to the markets of Cusco, whereas Case Study Site 2 has had more access to monetary resources as a result of rent payments, community investment projects, and royalties from the mining company.

“The NGOs helped us a lot, they gave us capacity building workshops and from there we began to build our own reservoirs and have hoses for irrigation. They provided workshops, gave seeds, hoses/sprayers (for irrigation), the theory and the practice” (Participant)

In Case Study Site 2 the community has leveraged infrastructure projects such as: a new cultural centre, a women's centre, and internet. Additionally, there are many more projects planned for the future, such as a new health clinic, paving of the road and a large irrigation infrastructure project slated for this year.

“In terms of infrastructure projects, the main one has been the Cultural Center which they have now finished building, [The company] paid 70% of it, and the community paid 30%.” (Participant Leader)

6.1.2.3. **Social cohesion and conflict**

One of the most distinguishing factors between the two communities is the level of social cohesion and conflict, both between internal community groups and organizations as well as with external actors, such as the municipal government, NGOs, companies etc.

In Case Study Site 1 there was a high level of social capital and trust within the community and low levels of conflict. 100% of household survey respondents said they feel safe in their community. Moreover, they had had several positive experiences working with external actors which has allowed them to leverage project support and training. They also had a positive working relationship with the municipality which was identified from both the Municipality's perspective and the communities.

“Coordination between the communities and the municipality has improved There are multi-sectoral meetings and agreements between the municipality and the communities asking what they want and what they need” (Participant)

In 1990 NGOs came from Germany and Holland. At that time, I was named one of the community leaders. The NGOs helped us a lot, they gave us capacity building workshops and from there we began to build our own reservoirs and have hoses for irrigation. They provided workshops, gave seeds, hoses/sprayers (for irrigation). Both the theory and the practice They started with showing 30 people better ways to plan their fields and then replicated that with others. There have been positive and negative experiences” (Participant)

The conditions in Case Study Site 2 were starkly different. Many community members stated that trust within the community has been eroded, there is more inequality now than before the mine and that people do not trust one another.

Now some have benefited, but most people have been marginalized and there is a lot of inequality. The [local government] hasn't fulfilled their promises...There is a lot more fights and conflict in the community.” (Participant)

I wrote, paraphrasing a participant:

People have been telling us that they cannot access jobs in the mine, and so we are wondering if they have been blacklisted, but we are not sure. They said when people do start to get active and try to rally the people, he has heard from several people that [The company] will go to their houses during the night and offer them jobs or money or whatever they want so that they will be quiet and stop disrupting things. He said that people will never tell us this, but that he has heard this from several people within the community. He has also said that community leaders

will use their position with the Board of Directors to form a protest against the mine, but that in the end the leaders will use it as an opportunity to further their economic interests and gains, by saying they will stop the protest if they rent their trucks, or give them employment etc. and doesn't actually benefit the entire community.

This participant's comments were echoed by many others in the community, both men and women. Many interview participants talked about the growing mistrust between the community and the mining company. We heard from various community members that in the community agreement with the mine, the company had agreed to give members of that community preferential employment. However, they stated that has not been the case:

"We have an agreement with the mine for preferential employment for all of the community members and that they set up some businesses like restaurants. But now not everyone can enter to have their own restaurant We want scholarships for our kids. Everyone should benefit in one way or another. We received a training in transportation but they don't give you permanent work. I bought a new bus but they didn't contract me. We formed a transportation business, you need to declare your income, pay taxes, but you are 5 months with work and then unemployed for a year A company from outside now has the contract with the mine for transportation. [Company] talks but they don't put it into practice." (Participant)

"Currently there are only about 30 local people working in the mine with full-time jobs. They are operators. They have had training and then they hire them, but shortly after they fire them. They say that they are "conflictive" and don't like the culture here. Don't want to give the workers days off for cultural celebrations." (Participant)

"My daughter went and studied administration and came back and applied with the company, but that was 3 months ago and has not heard anything. My son is almost done his degree in geology and hopes to apply to the mine also, but I am nervous because they haven't had the experience that the company is hiring local youth or anyone from here, even though they have gone to school and gone to school and studied in relevant areas." (Participant)

This divisions and lack of trust in the community were also reflected in individuals' interactions with us. For example, several people, primarily women, would agree to speak with us and then not show up at the agreed upon time, or would avoid a one-on-one conversation, or would make excuses and speak with others under there was no more time. We had tried to organize a small focus group with the women's group but the leader got emotionally charged when we went to speak with her, ultimately, she refused to speak with us. Other women did want to speak with us, however once we organized a small focused group at a woman's house, no one showed up.

6.2. Integrate Local, Traditional and Experiential Knowledge

One interview participant expressed the interconnectivity of the capitals through his world view by saying:

“With water and soil, there is life. Without water and soil the Campesino dies” (Participant)

This statement not only demonstrates that these communities have a deep understanding and connection to the natural environment where they live, but that all of the dimensions of the Campesino livelihood and well-being stem and are dependent on natural capital. Based on our semi-structured and informal interviews, there were several conversations that demonstrated the integrated nature of the Campesino worldview, such as:

- The cultural and divine significance of *La Pachamama*, or Mother Earth to the Andean culture. The Pachamama is the connection between nature and humans and protects people by providing them with food and water. Each August the case study communities, alongside with hundreds of other Andean communities conduct offerings for the *Pachamama* to give thanks and ask for good weather and a good harvest.
- *Ayni*, which roughly translates to reciprocity, is an important word in Quechua. This was used in conversations about the harvest, and helping one another to process and store their potatoes and wheat for the collective benefit of the community. It was also used to describe our actions within the community, that the community was helping us by providing input to our research and we were helping the community by providing them with information from other locations and inputs for their community planning process.
- During one of our conversations when sharing a morning with an elder couple, was a woman showed us a root vegetable they grow call *Mashu*, there is a pink and black variety. She told us that the black is good to treat cancer and the pink helps a man’s prostate. This is cultivated and used as a traditional medicine and food source.

One participant, when discussing the environmental monitoring process with the independent consulting firm hired by the mining company, that:

“We don’t know what the results mean. They give us the results, but we can’t read them. We don’t know if they are good or bad. We know somewhat by what kinds of animals are in the water – if some are dying or not there anymore. But we need real evidence. Like to count how many trout are in the water, if they are of normal size. We know there’s a plant in a nearby town, beside the mine that has a plant to separate the chemicals from the water, we know it’s not working right now. People in the community don’t trust the results – they still think there is contamination. We get the technical reports, but the consulting company doesn’t tell us what they mean. The people would not believe them even if they tell us what they mean. I want to improve things. The strikes/protests in the community do not work. They made things worse. It’s a waste of time, money, and trust is lost. Now there the company is less willing to work together to find solutions. I want us to have a dialogue table with our community, the neighbouring community and [the company], about the management of the watershed. I want to work well with the company, but I also don’t want them to contaminate our water. I want an independent expert to read the results of the water, air and soil tests and to explain to us what they mean. Not hired by [the company], hired by the community.” (Participant).

7. Discussion

The discussion of this chapter will focus on the themes arising from testing the IIIF through two case study sites as well as the current academic literature and industry standards. This chapter responds to two of the research questions: 2) How does the applied framework engage with, and include community priorities for improved well-being; 3) To what extent does the applied framework address identified considerations of inclusion for impact assessment?

First, Section 7.1 will summarize the key findings about the ‘Process’ of implementing the ‘IIIF’ and how that informed what to include in the ‘Form’ through an analysis of the effectiveness of the IIIF’s integrated components. Then Section 7.2 discusses lessons for community engagement and the importance of recognizing and addressing power dynamics, as well as being aware of potential for impacts on traditional economies and social structures. Section 7.3 will then provide Recommendations for implementing inclusive IA based on the findings of this research. Sections 7.4 and 7.5 discuss the limitations of this research and areas for future research.

7.1. Analysis of the Effectiveness of the IIIF Integrated Components

7.1.1. Using Community Planning Tools for Impact Assessment

This study design borrowed frameworks and methods of engagement from the schools of thought associated with community development and planning, and found that using community planning tools for impact assessment served a dual purpose. First, we presented the study as a planning tool to communities emphasizing the Framework’s ability to help communities identify their priorities for their community planning processes (Ferguson (Hernandez), 2015). This approach captured the attention of community leaders because it was tangible, applicable and useful to them. We found that community leaders and members didn’t identify with measurement, and therefore approaching them to only take data for indicators without providing anything in return would not have been a successful approach. For example, in Case Study Site 1 when conducting the household surveys people did not identify with specific measurements (with the exception of milk production) when I asked questions like “how many hectares of land do you have?” or “what percentage of your crops do you sell vs. consume?”. In Case Study Site 2 we also

found that people were not interested in indicators and measurement. People had had previous negative experiences of foreigners arriving in their communities to ask them questions and extract the information without sharing any information with the community. Thus, they were not interested in answering our questions unless we posited it in a way that was going to support their community planning processes.

We found that by using the IIIF as a community planning tool, it can identify key priorities for the community, which supports their community planning processes, as well as informs key issues for IA. This approach could help structure the community engagement and planning process within extractive contexts and help industry co-identify and plan with the community what community investment projects are needed and wanted (Mackenzie Valley Review Board, 2005). Industry and government are beginning to move in this direction as the BZH takes an early engagement and more holistic community development approach to IA (*Beyond Zero Harm Framework*, 2016). The expert panel report on revising Canada's impact assessment legislation also recommends using early engagement in IA processes as a planning tool (Horswill, Northey, Pelletier, & Gelinas, 2017).

7.1.2. Applying the Community Capitals

The 6 community capitals are the foundation of the IIIF and were used to map the assets of the two case study communities. The two main findings by applying the community capitals are that they are intuitive to people from diverse cultures and that they provide a holistic overview of community strengths and weaknesses.

1. Community Capitals are Intuitive

The IIIF testing confirmed that the community capitals concept is comprehensible to people and is easily translated across languages, cultural backgrounds and world views. The communities understood the various elements and could directly identify items within each capital that reflected their lives and well-being. The concept was not only understood well by adults, but children and youth grasped the concept very quickly, incorporating it into their drawings of what they like and would like to see in their community.

2. Holistic Overview of Community Strengths, Challenges and Weaknesses

The testing of the community capitals as the foundation of the IIIF confirmed what has previously been found in numerous other studies, and that is that it provides a holistic

overview of the communities' strengths, challenges and weaknesses. By using this established theory and concept that has been applied in sustainable community planning, we were able to identify and categorize the perspectives of individuals and groups. From there we were able to co-create indicators in order to accurately capture their priorities for improved well-being.

Moreover, by employing qualitative data methods, such as semi-structured interviews, we were able to better understand how community members felt or perceived activities as having impacts on a variety of aspects in the community. The Community Capitals rooted the IIF in peer-reviewed academic literature, while making it highly accessible for community groups to understand.

3. Co-Creating Indicators is Effective

One of the identified considerations for inclusive impact assessment is employing flexible indicators, constructed using language that best represents the local understanding of the objective is one of the key considerations for inclusive measurements (Satterfield et al., 2013). Through engaging actors using the PP approach to identify priorities, themes, and concerns, we were able to better identify, develop and select appropriate indicators. Throughout this process we always tried to ensure that the perspectives of participants were sufficiently and correctly captured, and that our biases as researchers were mitigated (Hochfeld & Bassadien, 2007; Merry, 2011).

The PP approach demonstrated that it is easy for western researchers to get this wrong, as we quickly realized that a hand full of the candidate indicators that we thought would resonate with the communities, did not. Either it was something that we thought important and it wasn't to them, or we needed to adjust our language and how we were describing the indicator in order for them to make sense of it. This underscores again how important the co-creating a vetting of indicators is for IA.

Overall, we found that the PP approach was appropriate and effective in this context, however due to time and budgetary constraints we were not able to adequately validate the co-created indicators with the communities through follow-up workshops and has been done through intermediary community contacts via email.

7.1.3. Integrating the Conditions, Capabilities and Connections

The goal of the IIIF was to create a framework that addresses the tension between a communities' assets and conditions and their agency and governance constraints that they may face to improve their well-being. Integrating the CCF and the 3 Constituents of the 4Cs Framework for Human Well-being provided the IIIF with the ability to do that. As researchers developed a more complete understanding of some of the barriers that the community may face in overcoming the challenges they identified in asset mapping. Moreover, integrating the Constituents (Conditions, Capabilities and Connections) from the 4Cs provided a more nuanced understanding of not only community assets, but barriers or enabling factors for the communities to pursue their goals, as well as the ability to visualize some of the more intangible values that communities have, such as connections to people and places.

The communities are a part of a larger natural, economic and governance system, which influences their agency and control over some aspects of their community. By breaking each of the capital's down into conditions, capabilities and connections, we learned where communities have limited decision-making authority, or need to engage and cooperate with other system actors in order to manage a natural resource or be provided with a service. We found that integrating the Constituents was very useful to develop a more nuanced and realistic picture of the community's challenges and therefore develop more tailored strategies for achieving community development objectives. For example, both communities have very strong connections (Connections) to the land that they live on, relying on it for their livelihoods, however their ability to make decisions over the use of that land is somewhat limited (Capabilities), as well as their control over nature (Conditions) – such as climate change.

7.1.4. Integrating the Gender and Age Lenses

Our findings were consistent with the literature, in that a community is a heterogeneous actor with diverse groups, who have different priorities and feel impacts of projects differently (Jenkins, 2014; Li, 2009). The IIIF cross-cut its analysis of the community priorities with a Gender lens and an Age lens. One of the considerations for inclusive measurements identified from the literature review in Chapter 2 is that the community must be seen as a heterogeneous actor (Jenkins, 2014; Keenan et al., 2016; Kemp, 2009; Li, 2009). Based on the findings of this study, the IIIF was successful in identifying and

visualizing the community as a heterogenous actor, allowing the data to be disaggregated by various community groups. In this case study site there were no ethnic or religious minorities, however it did capture the perspective of women and youth.

The use of these two lenses provided a richer and deeper analysis into a suite of the communities' priorities. Had we only engaged community leaders and municipal officials, the picture of community priorities would be incomplete. Through employing the Gender and Age lenses throughout data collection, specifically including the perspectives of youth and women, the IIF was able to capture additional priorities for social groups that are typically excluded from decision-making. Additionally, while completing the data analysis it was particularly important to make these perspectives visible in the data display so that these perspectives are brought to the reader's attention, and not minimised by only incorporating them into the overall community perspectives. We did so by creating a Venn diagram that shows the similar and distinct priorities of community groups (see section 6.1.1 Figure 5).

The application of the Gender Lens provided us with key insights into the priorities of women. Women were very vocal about being excluded from decision-making, but that they want to be included. In both Case Study sites women said they are often shooed away from meetings and told that their husbands can tell them when they get home. In Case Study Site 2 one woman told us that they now refuse to go home, and they stay, even though they are often not welcome to offer their opinions. Moreover, women and youth shared a similar priority and concern for the quality of education for youth.

The Age Lens provides the IIF with flexibility to engage vulnerable age groups, such as children and youth, which our study focused on, but could also take into consideration the elderly. We found that the data collected with the children and youth incredibly valuable to identifying a complete picture of community priorities and concerns. For example, in Case Study Site 1, when we shared with the adults some of the ideas and priorities of the youth, they were quite surprised because they hadn't had those open discussions before at the community level. Specifically, within the context of resource development, where the lifecycle of a project may span three generations, it is critically important to engage children and youth, as they may continue to be impacted by the project into adulthood.

Purposefully reaching out to women and youth, in addition to community leaders and municipal employees, provided a richer and rounder perspective of many priorities,

concerns and challenges from various perspectives and fulfilled one of the IIIFs key considerations for inclusion. The IIIF was able to capture that there are groups, opinions and values that are not typically integrated in IA.

7.1.5. Integrating Local, Traditional and Experiential Knowledge

A key component of 'inclusion' in IA is meaningfully integrating local, traditional and experiential knowledge into the criteria and indicators and the measuring and evaluation process itself (Maustrad, 2000; Ross & Pickering, 2002; Satterfield et al., 2013). The academic literature establishes that it is difficult to create meaningful space within IA frameworks for local and traditional ecological knowledge, where those values can influence the outcome (Hinojosa, 2013; Kemp, 2009; Mackenzie Valley Review Board, 2005; Vanclay & Esteves, 2011). This section discusses the research's findings, within the context of the academic literature, on expressing holistic world views through criteria and indicators frameworks, and the importance of integrating technical scientific processes with local, experiential and traditional knowledge systems in order to establish common evidences of potential project impacts.

7.1.5.1. Indicators for Holistic Worldviews

The literature has expressed the difficulty of integrating holistic world views into indicators, therefore it often overlooked (Adam & Kneeshaw, 2008; Satterfield et al., 2013). Even if TEK is included in indicators, it is often 'cherry picked' to feed into technical expert assessments (Maustrad, 2000). Through the recognition and legitimization of local, traditional and experiential knowledge systems, that are holistic and rooted in spiritual and social interactions with nature may create space for a new way of conducting IA processes (Ross & Pickering, 2002, p. 190)

This research found that the local and experiential knowledge focused on the connections with the land and water, and that all of the social and economic components were dependent on, rather than independent of, nature. This may be seen as resonant of an indigenous world view, where everything is seen to be interconnected (Satterfield et al., 2013). During this research we consciously considered how to meaningfully include local and experiential knowledge into the development and testing of the IIIF. While, the IIIF has attempted to lessen these gaps, we found that adequately and accurately reflecting the holisticness of the local world view, to be difficult through the narrow scope of indicators. We found that it was important that the indicators that reflect local cultural

values are expressed not only within cultural capital, but are also indirectly expressed through criteria and indicators within the social and natural capitals. This is consistent with Adam and Kneeshaw's (2008) findings that compare Indigenous vs. non-Indigenous indicator and criteria frameworks related to forestry. They found that isolation of social, ecological and economic values within these frameworks is reductionist and that the indicators need to be repeated across principles in order to demonstrate resource issues. The recommended IIAF tries to link together the capitals and take a holistic view of community well-being, The constituents (conditions, connections and capabilities) also help reflect their material and non-material expressions of culture and world views. Adam and Kneeshaw (2008) also found that Indigenous and non-Indigenous criteria were not incompatible or dissimilar, rather the Indigenous indicators were motivated by community connections with nature. Non-Indigenous frameworks for example would select a species based on its ecological function, where Indigenous frameworks would identify it based on its cultural significance. Or "access to forest resources" is a complex indicator from an Indigenous perspective as it gets at sustainability of the resource and its proximity, productivity, quality and integrity for traditional uses.

Part of integrating knowledge systems means fostering a meaningful space for different world views to express their opinions and values in a way that makes sense to them. We found that while indicators are useful and a necessary component for conducting IAs, the semi-structured and informal interviews provided rich perspectives of the specific indicator values fit together in the local context. Having a meaningful space in IA for people to tell their story can enhance and be complementary to criteria and indicators or vice versa, as well as foster trust and understanding between actors and potentially avoid miscommunication.

7.1.5.2. Establishing Common Truths Through Knowledge Systems Integration

Industry has recognized that the community needs to be more involved in IA processes as a result of growing conflict around potential environmental impacts (Himley, 2014; Kemp, 2009; Owen & Kemp, 2013). Meaningfully including broad community membership in these types of processes would have multiple benefits for industry, local government and communities. It would help facilitate trust between actors, increase ownership and investment of the community in the process and foster trust in the outcomes or results of these processes, even if it is not the optimal or preferred result of the community (Moller et al., 2004).

In Case Study Site 2 we found that the mining company is taking steps for community participation, however this has still not translated into meaningful inclusion of various community actors. Many community members still feel that they have not been meaningfully included in decision-making processes, while community leaders feel that they have a good relationship with the mining company. This was most clearly exemplified through the environmental monitoring and the narrative around adverse water impacts of the project. Despite the mining company hiring an independent consulting company to undertake participatory environmental monitoring activities, which included training community members to observe taking samples, many people in the community mistrusted the process. Based on our observations and conversations with community members, it appeared that the participatory environmental monitoring was technical monitoring, with community members engaging in some parts of the process. However, it failed to compliment the technical knowledge through integrating local and traditional knowledge evidence. We found that some of the mistrust and anxiety around potential ecological effects, stemmed from the fact that the water quality results were being presented by technical written papers that community members found difficult to read and interpret. The lack of community ownership and control over this process was exemplified by my experience in the community, when the community environmental monitoring committee invited me to participate in taking water samples with them and the independent consulting company. However, due to their lack of control over the process, I was unable to participate in this activity, as permission needed to be granted directly from the mining company for anyone else to partake.

Members of the environmental monitoring committee also expressed that they felt that their local and traditional knowledge was not incorporated into the environmental monitoring processes. These preliminary findings echo research conducted on participatory environmental monitoring at the Pierina mine in Cajamarca Peru. Himley finds that the process did not result in a common narrative of environmental impacts, but rather demarcated the,

“Boundaries of credible environmental knowledge...[which] has had certain disempowering effects on area residents, who are increasingly made aware of the need to frame their claims in the register of science, yet whose access to the means of scientific knowledge production remains limited” (Himley, 2014, p. 1071)

Himley notes, that this limits the community's ability to hold the mining company accountable about the observed downstream effects of water quality. I would agree and also add that it even makes harder to engage in a dialogue about these concerns as the technical results are stated as the truth. Case Study Site 2 community members expressed similar challenges with navigating this dilemma, and had asked for our advice on how to find an independent lab to test their water samples and have someone interpret the results for them.

Our conversations with members of the environmental monitoring committee, community leaders and community members at large demonstrated that there was considerable misinformation and uncertainty throughout the community about what the actual impacts on the natural environment the mine was having. The lack of publicly available baseline technical data and documented local observations pre-operations, make trusting environmental monitoring during operations all the more difficult. Moreover, while many community members did assert that the mine was negatively impacting their water resources and soil quality, others were unsure, and 100% of participants discussed changes to climate and weather patterns.

Meaningful inclusion of local, experiential and traditional knowledge systems and developing co-management models for environmental monitoring in resource development contexts, may achieve better resource management outcomes that are informed, cultural relevant and inclusive (Moller et al., 2004). It could facilitate more clarity for all actors of what impacts are point sourced from the mine, and which are being driven by broader climate change or socio-cultural impacts in order to develop mitigation and adaptive management plans to help communities prepare for these longer-term dynamics that may have impacts on their livelihoods.

7.2. Lessons for Community Engagement in Extractive Contexts

The findings of this research confirm many of the identified gaps and considerations for inclusive IA set out in Section 3.2.3 and 3.2.4. This section discusses the importance of understanding local power dynamics, and understanding the role that mining can play in potentially altering those dynamics. It is imperative that not only IA processes, as well as broader community relations processes are set up in a way that facilitates meaningful engagement from communities, and that those communities are seen as diverse actors in a dynamic socio-political context. This research shows, based on the community

members engaged, that despite good intentions, failing to acknowledge and address power dynamics and engaging with communities in a direct and transparent manner can result in exacerbating local power dynamics, eroding traditional economic and social systems and socio-political isolation. By meaningfully incorporating these considerations into IA processes, industry may be able to avoid and/or mitigate adverse socio-economic impacts to the community and foster a meaningful space for dialogue.

7.2.1. Recognizing Potential Impacts to Economic and Social Structures

The most striking contrast between the two case study communities was the differences in subsistence agriculture and the cash economy. The economic intervention of mining so close to Case Study Site 2, has impacted not only their traditional economy but appears to have altered their social fabric, given the information collected through this study. Despite well intentioned positive impacts of providing employment, diversifying the economy and investing in CSR projects, the unintended negative impact of changing power dynamics and imposing a capitalist economy in a traditional *Campesino* context has led to adverse socio-economic impacts for many families.

This finding provides new insight to two of the identified gaps for inclusive IA identified in Section 3.2.3. It confirms that industry generally reports socio-economic impacts to communities from a narrow lens, focusing on the impacts of their investments, for example employment and infrastructure, but fails to genuinely consider and assess community well-being in a holistic way. Moreover, these indicators are primarily quantitative and don't leave room for considering these more intangible and nuanced social and cultural impacts of those economic investments. Second, it underscores the need for more holistic and integrated IA, as well as the integration of expert and local and traditional knowledge systems so that these types of impacts are identified, mitigated and managed appropriately. Third, it speaks to the need for more transparency in IA, not only in the communities impacted, as discussed in the previous section 7.2.2, but also for shareholders, governments and the international community to hold industry more accountable for the suite of impacts in local communities of their operations.

This preliminary finding is consistent with and triangulated by the substantive academic literature regarding the impacts of mining in Indigenous and *Campesino* communities in Peru, even as specific as Cusco, however they only indirectly consider this issue, such as Hinojosa (2013), Loayza & Rigolini (2016) and Paredes (2016). Hinojosa

(2013), who employed a Livelihoods Approach, found that mining activities in the Andes are one key factor that influence livelihoods, and that mining activities accelerates those changes and the inter-generational effects. The imposition of a capitalist economy, in a traditional subsistence and egalitarian society has left some families with improved and others with worse economic conditions. From a capitalist world view the mine employing only a certain percentage of local people or service procurement from small businesses in the community would be perfectly acceptable, however from a *Campesino* worldview, at least those who participated in this research, did not feel it was appropriate. Not only are some people not benefiting from the mine through employment opportunities, they are actually becoming worse-off as staple household items increased in price. This increase in economic inequality has led to mistrust, helplessness and social conflict within the community, between members, specifically families of community leaders and others. Furthermore, this has been aggravated by interactions with external actors, and miscommunication with the company, local government and NGOs.

Further research should be conducted to identify if and how traditional community structures, specifically economic and social processes have been eroded by the arrival of mining in rural and remote contexts. Additionally, reconsidering the role that industry plays in defining how and who in the community economically benefit from their operations.

7.2.2. Recognize and Address Disproportionate Impacts & Power Dynamics

The rapid change in community economic and social dynamics speaks to the key role that industry plays in these rural and isolated communities to have impacts on local power dynamics. Not only does industry needs to recognize itself as an actor within this context, but needs to view the community as a heterogenous actor, which is one of the foundational considerations for inclusive IA (Kemp, 2009). Broadly speaking this means understanding that some groups within a particular community have different priorities and perspectives and will feel disproportionate adverse social, economic and cultural impacts as a result of the mining activity (K. Jenkins, 2014; Keenan et al., 2016). For example, this research found, similar to the findings of Loayza and Rigolini (2016) that the social discontent regarding the mine was a result of local access to employment opportunities. Not only did the mine contract the majority of the labour from outside the community, within the community only some people were benefiting from direct or indirect employment (Loayza & Rigolini, 2016). Whether or not someone supported the mine appeared to be hinged on whether themselves or their family was receiving economic benefit from it. Identifying and

measuring disproportionate impacts can become much more nuanced when one begins identifying the change in the “% of people that feel they are able to have a say in decisions/ actions made by Community Board” or “the % of people that feel safe the majority of the time in the community”. These indicators are likely to change whether or not you speak to a man, woman, child or elderly person, and therefore it is important that IA processes recognize that there are diverse groups and perspectives within a given community.

The IIF provides Gender and Age Lenses and incorporates local and experiential knowledge to disaggregate data, making it easier to identify and address some of those disproportionate impacts. Understanding that it is not the role of industry to resolve internal community politics, it is crucial that industry does not exacerbate local internal tensions and power dynamics. Recognizing and putting good measures in place to address some of these power dynamic issues within extractives contexts, could help lessen the negative impacts and social discontent associated with these mining projects. Inclusive IA is not possible without addressing power dynamics (Mc Dougall & Ram Banjade, 2015).

This research found that the mining company could have taken a more proactive approach to addressing power dynamics through its community engagement processes by directly sharing information with community members, being transparent about community relations processes and presenting information in a way that the community understands. For example, our data shows that community leaders were privy to key information regarding Impact Benefit Agreements, contracts, information regarding operations, but that the information was not always being transparently shared with community members. Community leaders knew what community projects were likely going to be completed within the community through a contractual agreement with the mine and the regional government, however many community members were not clear on what was going to be fulfilled. We were also told that community leaders would abuse their position of power to incite protests against the mine and strike contract deals with the mining company for the benefit of themselves and their families. The lesson learned was that industry could adjust their community relations practices to not only continue to provide information to the community council, but also directly address the community assembly to ensure that everyone has equal access to information, removing or mitigating the potential for local power dynamics to distort the company’s intentions and mitigate opportunities for corruption.

The second lesson learned, is that it is not only important to address these power dynamics through providing equal access to information but ensuring that information is transmitted in a way that the local community understands. As previously discussed in section 7.1.5 and the integration of local, traditional and experiential knowledge into IA processes, it is critical that the local community understands the information. Our research found that despite a community environmental monitoring committee that oversaw water and air quality monitoring, there was a lack of trust on behalf of the community that these results were true. Community members said they had difficulty reading and interpreting the technical science, and that their local and experiential knowledge indicated otherwise, which is similar to the findings of Himley (2014). Therefore, rather than facilitate trust and goodwill with the company, it was fostering increased suspicion and resentment.

Furthermore, it is important that the potential for disproportionate impacts of the mining project be identified both within and across communities. Our research findings indicate that community members in Case Study Site 2, feel as though they are they are receiving a disproportionate amount of the negative impacts of the mining project, and less economic benefits compared to other surrounding communities, indirectly impacted by the mine. For example, dairy farmers had wanted the mining company to invest in their dairy production and a dairy processing facility so that they could sign a procurement contract with the mine. However, it was said that the mining company was implementing this project in another community that was indirectly impacted by the mine. This has resulted in local people feeling frustrated that they are not receiving the capacity building and economic support from the mining company to take advantage of potential economic benefits of indirect employment, and that these benefits are going to a community less impacted by the mine.

Paredes (2016) discusses how mining conflicts in Peru have led to a unification of a community or communities, and collaboration with national and international NGOs. However, in this community we did not find this to be true and our preliminary findings suggest the opposite. This community that is directly impacted by the mine, has become so divided that it appears that it is unable to harness the capacity building support of international funded projects, compared to communities indirectly impacted. For example, the Federation of Canadian Municipalities (FCM) has a capacity building project in the province of Chumbivilcas and is supporting various communities build their governance capacities and support women leadership. The objective is to support these communities

in the development community plans, so once they begin receiving resource royalties from the mine, there is a transparent and equitable distribution of these resources so that the whole community benefits. Unfortunately, the municipal government where Case Study 2 is located, did not vote in favour of working with FCM, which has led to the two communities most impacted by the mine not receiving the critical support they need to improve governance capacity and more equitably distribute the resource revenues received from mining.

The lessons for engaging communities demonstrate that there needs to be a dignified space in IA processes for local people to tell their stories. Quantitative and qualitative indicators are necessary and useful; however they are insufficient for capturing the whole picture in an integrated way. For example, a technical expert can use environmental indicators for water quality, however it is important that this is not removed from the story, and that to local people water could be viewed as a way life with cultural, economic, social, and/or health values associated with it. This struggle between technical expert indicators and traditional ways of knowing and story-telling is echoed throughout current socio-political discourse on resource development projects, as local and Indigenous groups around the world continuously express their frustration with not being meaningfully consulted in decision-making processes (*22° Observatorio de Conflictos Mineros en el Perú Reporte Primer Semestre 2018*, 2018; Kemp et al., 2011; Schilling-Vacaflor & Flemmer, 2015). Moreover, these lessons for community engagement reinforce the broader discussion throughout academic literature about how local and Indigenous groups need to be meaningfully included in IA processes (Dingwerth & Eichinger, 2010; Kemp et al., 2011; Owen & Kemp, 2013).

7.3. Recommendations

Based on the findings and discussion of this research, we recommend using Table 2 (see Section 3.5) as a guide for the 'Form' of the IIF. The remainder of the section will discuss recommendations on how to implement the 'Process' portion of the Framework. In summary, we recommend: 5.3.1 flexibility in engagement tools; 5.3.2 Building trust and practicing reciprocity; and 5.3.3 Engage beyond official leaders.

7.3.1. Flexibility in Engagement Methods

Having a variety of participatory engagement tools and ways to collect information is important. Researchers or experts need to be flexible and adapt to what is possible or welcomed in a place, rather than employing a 'cookie cutter' type framework that needs to be exactly the same in each place. For example, this research did not employ the household surveys or the focus groups in Case Study Site 2 due to the general mistrust displayed by various community members towards us as foreigners. Contrary to Case Study Site 1, we as researchers, felt it would be inappropriate and insensitive were to conduct a workshop on community planning where there is such deep and raw social conflict and discontent. This underscored a very important finding for this research, that while an engagement method may be generally perceived as appropriate, it is crucial to 'feel out' the local context, prior to employing any engagement method. Even so, these engagement methods may have been appropriate over a larger time-scale, after significant trust had been built with community members through individual conversations and interviews.

On the other hand, the semi-structured and informal interviews were appropriate for both case study sites. The semi-structured and informal interviews were found to be a compatible method with the local culture, which is oral and based on reciprocity. The informal interviews were not a part of our methodology before arriving to the communities, but we quickly found that we needed to find a way to engage people. Especially in Case Study Site 2 where people were afraid to speak with us, and were uncomfortable if we recorded their verbal consent or even in some cases asked specific questions. We needed to find a way to go outside of the normal engagement methods to try and speak with people in a way that they felt comfortable.

The interviews provided the most authentic opportunity to speak with people human-to-human rather than the subject-to-researcher. In other words, this method of engagement was familiar to them, and they were comfortable with talking to us one-on-one. In addition, this method allowed us to collect data in the second case study site, whereas if had we only relied on surveys and workshops, our data collection in this community would have been severely limited. Moreover, part of inclusion in IA means not imposing a particular methodology, but being respectful of communities and employing methods that they are comfortable with.

7.3.2. Building Trust and Practicing Reciprocity

Trust and social capital have been assessed as being one of the key factors for success of participatory and collaborative processes (Porter et al., 2013). There is a challenge and delicate balance between taking the time to develop relationships and earn trust and meet the demands of the capitalist economy (Porter et al., 2013). We found this to be absolutely true in this context. In order for inclusive IA to be successful, the researchers need to build local trust, which can be cultivated through practicing reciprocity was important. We found that this can be done in three ways:

- *Let the community 'interview' you - Share stories about yourself and where you come from.*

People were genuinely curious about who we were, why we had come to visit them, what our country and culture was like. We found that taking time, sometimes hours with different groups of people, and just having conversations, drawing similarities and differences between our lives and cultures. We found that this was critical to the success of collecting our research data in this context and building some trust with the local communities.

- *Provide examples and innovative ideas that could apply to the local context.*

The Andean *Campesino* culture is based on reciprocity, this theme came up many times during our interviews. Therefore, as outside researchers respecting the local cultural norms through practicing reciprocity helped to gain community trust and collect richer data. People were very direct with us that outsiders came to their communities, collected information and never came back with anything for the community. For example, in the workshop that we held in Case Study Site 1 we dedicated 30mins to presenting 2 other case studies of indigenous community cooperatives, highlighting the technologies used, business structure, and the holistic benefits they've had for improved community well-being. We also wrote a report for each of the communities with the identified strengths and weaknesses and recommendations for moving forward.

- *Explain how the information collected can help contribute to community priorities and goals.*

Lastly, building trust and practicing reciprocity needs to be done through explaining how the information collected can benefit the community. In our case, this meant sharing the data back with the community to help define some of their community priorities and goals for the dairy processing plant. This is a critical step to help build trust with outsiders and

researchers' overtime. We experienced first-hand how this affects future researchers if reciprocity is not practiced. In Case Study Site 2 people had a recent negative experience with an outside researcher who collected information and did not clearly communicate intentions and results, shattering their trust for outsiders, making it extremely difficult for us to gain the community's trust and collect our data.

7.3.3. Engage beyond official leaders

One of the considerations for inclusive impact measurement is that the community must be seen as heterogeneous. This means engaging beyond the official leaders to assess community well-being, especially those who are usually excluded from decision-making (K. Jenkins, 2014; Keenan et al., 2016; Kemp, 2009; Li, 2009). By engaging official leaders as well as women, youth and other community members not as actively engaged in decision-making, we were able to gain a fuller picture of the priorities and concerns of the community. For example, we found that youth prioritized the internet, green spaces and education more than other actors within the community. Women prioritized meaningful participation in decision-making and the health and education of their children.

Not only did engaging diverse actors provide us with a richer data set, it is important to consider the collective nature and culture of these communities. By only speaking to the leadership, it can create divisive tensions within the community, which overtime can become exacerbated into social conflict.

7.4. Research Limitations

Due to the scope and complexity of conducting field research in resource development contexts with Indigenous communities, there are several limitations to this research. First, we were unable to test all of the methods in both case study sites, due to the unforeseen social context. While this did confirm that flexibility in engagement methods is essential for inclusive IA, it did limit our ability to fully operationalize the IIF. The second major limitation of this research study is that due to time and budgetary constraints we were not able to sufficiently verify the final results with the two case study communities in person. We did send digital copies through local contacts to the communities, however, we are unsure to the extent that they were disseminated to the community, nor are we able to seek feedback on the results.

7.5. Future Research

Future research should include more testing of the IIF in other sites both within Latin America and outside to test its applicability across cultures, in particular Indigenous cultures. Furthermore, it should be tested in more sites directly impacted by mining. Additionally, it should be tested in communities of religious and ethnically diversity in order to assess if the IIF still adequately captures the community as a heterogeneous actor. The Age lens was only tested with youth in this research study, further research could apply it the elderly generation alone, or in conjunction with the youth.

Another recommendation for future research would be to explore how climate change can be integrated into IA. As identified in the Chapter 6 all of the study participants identified climatic changes as a significant concern and priority to address. In particular, in the community close to the mine there seemed to be an uncertainty as to what changes were being incurred by climate change or the mine, for example water flow, soil quality. Further research to identify how the cumulative impacts of resource development projects and climate change are impacting communities will become even more important in the coming years, as climate change impacts increase in intensity and frequency and demand for resources increases.

8. Conclusion

Large-scale resource development projects can have profound social, economic, environmental and cultural impacts on local communities (Cheshire et al., 2014; Lewis & Flynn, 2016). Inclusive IA is one of the tools that can be used to engage communities and better understand how to minimize the negative impacts, and maximize the positive impacts of these projects on human and community well-being.

This research attempted to bridge the gaps and considerations for current IA processes through developing and testing a framework, the Integrated Inclusive Impact Framework, that considers both the 'Form', what is measured, and the 'Process', how the information is collected and measured. This study contributes to the theoretical discourses of SCD and IA within resource development contexts, by providing a necessary analysis of indicators and engagement methods co-created with, and validated by, diverse community actors. Furthermore, this research contributes to the practice of SCD and IA through operationalizing a framework through an iterative and reflexive process in the complex and challenging mining context in Cusco, Peru. This dynamic framework provides an opportunity to operate in these multifaceted contexts and have more meaningful dialogue and collaboration with communities. This research provides a more holistic approach that allows external actors to gain a deeper understanding of community dynamics and the potential impacts to sustainability.

This research's findings reinforce the considerations for inclusive IA, as our findings were largely consistent with the body of literature. Moreover, this research contributes to the IA discourse in resource development contexts through the following findings and insights:

- Integrating the 6 Community Capitals with the 3 Constituents provides a more nuanced understanding of not only a communities' assets and 'Conditions', but their 'Capabilities' or enabling factors or barriers they may face to improve their well-being, such as constraints on their agency or governance. It also provides a way to make less tangible values, such as 'Connections' to people and places more quantifiable, concrete and visually represented in the results.
- Communities are heterogenous, with diverse actors that have different priorities, concerns and feel the impacts of resource development differently. Therefore, it is crucial to engage

beyond official leaders to measure impacts on human well-being. Incorporating Lenses into IA to tease out diverse perspectives, particularly those of traditionally marginalized social groups, does provides a more robust and complete assessment. The IIF was able to capture that there are groups, opinions and values that are not typically integrated in IA. This study found that women and youth had some distinct priorities from men and community leaders. This finding is consistent with the academic literature on disproportionate negative impacts of socially excluded groups (Jenkins, 2014; Keenan, Kemp, & Ramsay, 2016; Kemp, 2009).

- Social, environmental and economic impacts are interlinked, and therefore the 'Form' of IA, what is being measured, needs to take a holistic approach (D. Franks, 2012).
- Integrating technical and local and traditional knowledge systems is challenging but important, and could facilitate trust between actors and foster community buy-in, ownership and trust in the results or outcomes of these processes, even if they are not the optimal or preferred outcome (Moller et al., 2004).

This study plays a small yet integral step in a path forward for more sustainable natural resource development, conducted in a more equitable and inclusive way. It provides practical recommendations for engaging communities, including:

- Flexible engagement methods – Each community is unique, therefore it should not be assumed that one method of engagement is appropriate in all communities of a similar profiles, as demonstrated by the different data collection experiences in Case Study Site 1 and Case Study Site 2.
- Build trust and reciprocity – Building a rapport with the community and being clear on expectations, giving back can make a big difference with regards to relations with the community.
- Engage beyond official Leaders: A community is a heterogenous actor, and therefore it is important to engage beyond official leaders, not only to understand the diverse perspectives and concerns within the community, but to avoid miscommunication. It is important to not assume that leaders relay key information in a timely and adequate manner to their constituents.

To conclude, this research provides insight to how some of the identified challenges in resource development contexts, specifically regarding IA processes and meaningful community engagement, can begin to be overcome. The intention was to contribute this framework to theory and practice, is rooted in the hope that ultimately communities' impact by these large-scaler

resource development projects will be able to harness more equitable benefits and meaningful participation in decision-making, while at the same time minimize the negative social, economic, environmental and cultural impacts. However, it should be recognized that these are complex contexts with multiple layers of power, values and interests, and no IA will resolve all of these issues.

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Appendix A: Current Impact Assessment Frameworks Analysis

Description: The scan analyzed 28 frameworks, developed by industry, government agencies, NGOs and academics, across 8 criteria. The excel file contains two spreadsheets 1. Summaries of each framework assessed 2. The analysis of each framework against the 8 inclusion criteria.

Filename: Appendix A. Current Impact Assessment Frameworks Analysis.xlsx.

Appendix B: Field Testing Semi-Structured Interview Questions

Municipal Representatives

- Review of oral consent (ask to be signed)
- Could you start with your name, tell us a little about yourself and your role within the Municipality, and how you got to this role?
- Could you tell us a little about the priorities and goals of the municipality to improve the well-being of the communities?
- Do you collaborate with other actors to decide priorities and projects? How do you work with them?
- Is social inclusion important for the municipality? What does it mean for you? How are you integrating this topic into your work?
- How has this area changed in the last 20 years? How so?
- What have you achieved so far in terms of your goals? And what are some of the challenges in realizing your development goals (in terms of social, economic and environmental aspects)?
- Can you tell us a little about some current or previous investment projects? In your opinion has it been a success or a failure? Could you explain why?
- How are you currently measuring the impacts and achievements of your projects and investments?

Community Leaders

- Review of oral consent.
- Could you start with your name, and tell us a little about yourself and your role within the Association / Community, and how you got into this role?
- Could you tell us a little about the role of your organization in this area?
- Do they collaborate with other actors? How do they work with them?
- How are they involved in decision making, not only at the community level, but also at the level of the district and the province?
- Do you feel that they are truly involved and that governments take their opinions into account?
- How would you like to be consulted and involved in decision making for community and zone development?

- Could you tell us how this area has changed in the last 20 years?
- What is important for you to improve or achieve in the community for your family, your children? What does development mean or be for you?
- What things are important to your community? What things are important to preserve while the community is developing?
- In what things, you, or your organization are working and trying to achieve? What things have you achieved? What are some of the obstacles you have faced?

Community Members

- Review of oral consent.
- Could you start with your name and tell us a little about yourself and your role in your family and community?
- Could you tell us about what is important to you, your family and your children?
- What are the main problems of the community? What are your concerns about the community?
- What do you think is important to your community? What things are important to preserve while the community is developing?
- Do you participate in decision-making at the community level and district level? How do you participate?
- Do you feel that you are truly involved and that the leaders take their opinions into account?
- How would you like to be involved in making decisions in the community?

Appendix C: The Inclusive Integrated Impact Framework: List of Indicators

Constituents	Attribute	Indicators
Natural Capital		
Conditions	Physical land base	Sufficient land for all uses (economic, leisure, housing, public space)
		Average size of land per household
	Quality/ health of natural environment	Environmental degradation from extractive activities
		Change in rainfall / weather patterns
	Water quantity and quality	Sufficient water for household use
		Sufficient water for productive (agricultural) use
		Degree of water contamination
	Soil	Fertility of soil
	Minerals	Quantity of existing minerals in community
Connections	Aesthetic & leisure value created by nature	The integrity of the landscape and its physical features (Co-created)
		Water for swimming (Co-created)
Capabilities	Stewardship	Protected watershed areas (co-created)
		Use of organic farming methods vs. conventional farming

		Existence of sustainable solid waste management practices
	Participatory decision-making over land use/ resource use	Effective management of water sources /reservoirs (Co-created)
		Local decision-making power over mining concessions (Co-Created)
Physical Capital		
Conditions	Energy (electricity and gas)	Electrical installations in households
	Telecommunications (phones, internet)	Access to cell phone/ cell phone service
		Access to internet
	Existence of hospitals and health clinics	Distance to nearest clinic (co-created)
	Public Services	Distance to nearest elementary, high school,
		Distance to nearest university and institutes
		Distance to nearest community centre
Roads & Transportation	Sufficient number and quality of roads for their transportation needs	
Capabilities		Sufficient access to transportation for all their needs (Co-created)
Economic Capital		
Conditions	Employment Opportunities	opportunities for self-employment income
		opportunities for employment income

	Economic Diversity	% Households engaged in commercial agriculture (Dairy farming)
		% of households engaged in subsistence farming
		# of retail / service businesses
		% of community members employed in mining (formal or informal)
	Production capacity	average # of liters of milk produced per cow per day
		Sufficient and appropriate technology / equipment for agricultural production
		Sufficient production of animal feed
		Sufficient quality of animal feed (co-created)
	Storage and Processing facilities	Existence of facilities to process/ add value to agricultural products
		Quality of storage for harvest (human and animal consumption) (Co-created)
		Quality of barns/ sheds (Co-created)
	Investment from Mining Activities	Amount of \$ and/or other investments contributed by mining company(ies) annually
		Amount of \$ received for rent of community property annually (Co-created)
	Market Access	Ease of access to markets
		Existence government/ industry policies to purchase local products and services

Capabilities	Job Stability	Stability of current income sources
		Basic necessities covered by cash income (housing, health, education, food, transportation)
Human Capital		
Conditions	Access to Healthcare	% of HH with access to primary health care facilities & services
		Access to specialized healthcare
	Fertility rates	Access to reproductive health services
		# of children per household (average)
Capabilities	Food Security	% of household diet from subsistence farming
		Harvest quality (Co-created)
		Diversity in diet adequate to meet nutritional needs
	Use of traditional medicine	% of HH that use traditional medicine
	Education	Formal education levels
		Level of leadership abilities
		Level of traditional, ecological and occupational knowledge
Social Capital		
Conditions	Peace and Security	Personal experience of violence in private spaces
		% of community members who feel safe the majority of the time

Connections	Social Organizations and Associations	Strong associations/ organizations (active membership, ability to make decisions)
		# of active organizations within the community
	Social Relations (social fabric and inter-community relations)	Balanced age and gender distribution within the community
		Levels of conflict between community members (ongoing disagreements)
Capabilities	Inclusion in Decision-making at Local Levels	% of people that feel they are able to have a say in decisions/ actions made by Community Board
		% of people that feel they are able to participate in municipal participatory budgeting / integrated plan
		Degree of active communication by local governing bodies (municipal, community board) to community members (Co-created)
		% of leadership roles filled by women at local level (community / municipality)
	Inclusion in decision-making with External Actors	% of people that feel they have access to communication channels to the National Government
		% of people who feel they have a say in negotiations with extractives company(ies)
	Degree of Collaboration with other actors	Leveraged project / support (e.g., training) between community and external actors (public and private organizations and institutions)

		Co-implementation of a project with an external actor (public and private organizations and institutions)
Cultural Capital		
Connections	Connected to Place	Ancestral connection to place
	Cultural Heritage, Values and Practices	% of community members that speak their original language
		% of community members that use traditional dress
		% of population that knows traditional dances, music and artisanal products
		cultural events (# events, festivals per year)