

Quantifying external benefits associated with the production of Fair Trade Certified™ seafood:
Underprovided and undervalued

By

Emilie Normand

Submitted in partial fulfilment of the requirements for the degree of
Master's of Marine Management

at

Dalhousie University
Halifax, Nova Scotia
November 2017

© Copyright by Emilie Normand, 2017

DEDICATION PAGE

I would like to dedicate this research to my parents, Lianne and Louis-Paul, and my sister, Steph, for supporting me every step of the way. This experience would not have been possible without my incredible family and I cannot thank them enough for this opportunity. I would also like to dedicate this research to my fellow classmates in the Marine Affairs program. The things I've learned from this incredible group of people undoubtedly inspired this research and I am truly humbled to have had the opportunity to work next to such talented classmates.

TABLE OF CONTENTS

LIST OF TABLES	iv
LIST OF FIGURES	v
ABSTRACT.....	vi
LIST OF ABBREVIATIONS USED.....	vii
ACKNOWLEDGMENTS	viii
CHAPTER 1: INTRODUCTION.....	1
1.1 Fair Trade USA Capture Fisheries Standard.....	3
1.2 The Fair Trade USA Seafood Supply Chain.....	8
1.3 Social cost-benefit analysis of the Fair Trade CFS.....	10
1.4 Correcting the market failure	13
CHAPTER 2: METHODS	15
2.1 Developing the framework.....	15
2.1.1 Step 1: Identifying possible indicators – Decision tree.....	17
2.1.2 Step 2: Scaling selected indicators	17
2.1.3 Step 3: Developing the model.....	18
2.2 Applying the framework.....	20
2.2.1 Step 4: Generating outputs with Fair Trade data.....	20
2.2.2 Return on Investment (ROI).....	21
CHAPTER 3: RESULTS	24
3.1 Developing the framework.....	24
3.1.1 Step 1: Identifying possible indicators – Decision tree.....	24
3.1.2 Step 2: Scaling selected indicators	31
3.1.3 Step 3: Creating the equation	32
3.2 Applying the framework.....	32
3.2.1 Step 4: Generating outputs with Fair Trade data.....	32
3.2.2 Return on investment (ROI).....	33
CHAPTER 4: DISCUSSION	34
4.1 Positive production externality.....	34
4.2 Correcting the market failure	36
4.3.1 Fishery’s country of origin.....	37
4.3.2 Importing policy.....	39
4.3 Data assumptions and reliability.....	42
CHAPTER 5: CONCLUSION & NEXT STEPS.....	47
LITERATURE CITED	49

LIST OF TABLES

Table 1. Table of assumptions.....	15
Table 2. 2016 data of Fair Trade Certified Yellowfin tuna (Indonesia) and shrimp (Mexico)....	20
Table 3. Range of marginal costs of Fair Trade certification (MC_{FT}).....	22
Table 4. Decision tree results of indicators pertaining to the CFS criteria codes	24
Table 5. Chosen indicators based on CFS criteria.	26
Table 6. Quantification of indicators of the external benefits accruing to society through the production of seafood in compliance with the CFS.....	30
Table 7. Values represented according to associated Fair Trade variable	31
Table 8. MB_E of the Fair Trade Certified Yellowfin tuna fishery in Indonesia (2016).	32
Table 9. MB_E of the Fair Trade Certified shrimp fishery in Mexico (2016).	33
Table 10. ROI of the Yellowfin tuna fishery in Indonesia.	33
Table 11. ROI of the shrimp fishery in Mexico.	33

LIST OF FIGURES

Figure 1. Simplified Fair Trade Certified supply chain.	10
Figure 2. Theoretical model of a positive productions externality.	12
Figure 3. Decision tree and methodological flow chart.	16

ABSTRACT

There is increasing recognition in global seafood markets that social sustainability is becoming the imperative of the day. The Fair Trade USA Capture Fisheries Standard (CFS) presents an opportunity to promote good social practices in small-scale fishing operations around the world, which are largely excluded from alternative certification schemes due to limited financial and informational capacity. The gains from achieving Fair Trade certification can manifest as the profit gains to a fishery from the emergent market opportunities and product differentiation, along with potential future returns by conforming to sustainable fishing practices. However, firm-level figures under-estimate the possible social impact that may accrue in compliance with the criteria of the CFS. As the CFS addresses social injustices that are prevalent in the fishing industry, attaining Fair Trade certification may have a positive impact on society on a greater scale. This research attempts to quantify the external benefits delivered to society associated with compliance to the CFS criteria. Estimates of external benefits are then used to assess the possibility that there is a market failure in the form of a positive production externality in order to identify third party beneficiaries. A general methodology to quantify selected indicators of external benefits associated with the criteria is demonstrated on two Fair Trade Certified™ fisheries: Indonesian yellowfin tuna and Mexican shrimp. Correcting for such a market failure is then discussed regarding the provision of certified products, primarily through government intervention.

LIST OF ABBREVIATIONS USED

IUU	Illegal, Unreported, Unregulated [fishing]
MSC	Marine Stewardship Council
CFS	Capture Fisheries Standard
EU	European Union
TIP	Trafficking in Persons
US	United States
FTP	Fair Trade Premium
CAP	Corrective Action Plan
CH	Certificate Holder
FTC	Fair Trade Committee
FA	Fishing Association
GDP	Gross Domestic Product
ROI	Return on Investment
ILO	International Labour Organization
OECD	Organization for Economic Co-operation and Development
EJF	Environmental Justice Foundation
GSI	Global Slavery Index
UK	United Kingdom

ACKNOWLEDGMENTS

First and foremost, I would like to acknowledge my supervisor, Dr. Megan Bailey, for taking on my research, guiding me every step along the way, and presenting me with incredible opportunities. I'd like to acknowledge Ashley Apel and the Seafood Program at Fair Trade USA for agreeing to host me for an internship and providing me with information and data which serves as the backbone for this research. The knowledge gained during my time at Fair Trade was an invaluable contribution to this work and would not have been possible without their support. I would also like to acknowledge the faculty and staff of the Marine Affairs Program along with Dalhousie University for providing me with the tools to make this research possible.

CHAPTER 1: INTRODUCTION

The depletion of wild fish stocks is a global problem with many ecological, social, and economic implications (Costello et al. 2016). On the surface, it may appear that it is the issue of overfishing, lack of data, or illegal, unreported and unregulated (IUU) fishing that is to blame for the mass depletion of stocks all over the world. However, an alternative view is that it is the nature of mass consumerism and high demand for seafood globally that has created this exploitative landscape under which global fisheries operate today (EJF 2015).

Incentive-based approaches to seafood sustainability have emerged as a market solution to harness the power of the conscious consumer (Grafton et al. 2006; Jacquet et al. 2010). Consumerism itself can present a major issue when it comes to efforts of sustainability, however, rather than fighting against consumerism, these market-based approaches seek to harness the power consumers hold in the free market to encourage sustainable development. The Marine Stewardship Council (MSC) represents the frontier of eco-certification in the fishing industry as an incentive-based approach to achieve sustainable fisheries globally. Fisheries are held to a standard of environmental responsibility which is then communicated to consumers through a label on products that were caught in compliance with that standard. While the MSC is currently the leader in eco-certification of sustainably-sourced wild caught seafood, they are largely inaccessible to fisheries in the Global South due to the high costs associated with certification (Ponte 2012). As 60% of the landed volume of seafood is produced by small-scale operations in the Global South (Bailey et al. 2016), the MSC is not promoting sustainability at the global scale. Despite the importance of the fishing industry in the developing world, there is a lack of progression towards sustainability of fisheries in developing countries (Sampson et al. 2015).

The lack of sustainable management in the Global South has led to social injustice such as human trafficking, forced labour, child labour, and IUU fishing, and it is these social issues that are now hindering sustainable management in the wild capture fishing industry (Allison et al. 2012). The depletion of fisheries resources does not come without cost, and as stocks are diminished, it becomes increasingly more expensive to fish. In order for fisheries to keep their heads above water, costs needed to be cut, and with so few mechanisms for cost saving in the fishing industry (i.e., margins are extremely small), it is often the opportunity to cut costs on labour that prevails. In fact, there more so exists an economic incentive to pursue free labour

than there is to operate legally (Faure 2015). Without an economic incentive to pursue good social and environmental practices in supply chains, human rights abuse and environmental degradation in accordance with mass global consumerism will persist, and efforts towards sustainability will not take hold.

It is both the lack of incentive-based mechanisms targeted at fisheries sustainability in the Global South and rampant social injustice issues in the fishing industry that enticed Fair Trade USA to launch its Capture Fisheries Standard (CFS) in 2014 (Rogers et al. 2012; Fair Trade USA 2014). Fair Trade USA (herein just referred to as Fair Trade) aims to promote sustainable development and community empowerment by returning benefits of globalization to producers and their communities by harnessing the power of the conscious consumer. Consumers who see the seal are guaranteed that those products moved through a supply chain that is socially and environmentally conscious, and can choose products that align with their values over those that do not.

In a perfect world, the production of all the goods and services consumers enjoy today would not negatively impact the lives of those who produced them. In the exposure of human rights abuses in production supply chains, the global society responds. A glaring example of this is the European Union's (EU) "Yellow Card" awarded to Thailand in the wake of the exposure of human trafficking and forced labour in fisheries supplying to the billion-dollar shrimp aquaculture industry, where product was exported to the EU and the United States (The Guardian 2014). This subsequently led to the demotion of Thailand to tier 3 ranking in the Trafficking in Persons (TIP) report in 2014 (the lowest possible ranking) (EJF 2015). This acted as a catalyst for political and legislative reform regarding human trafficking and forced labour in Thailand, which has seen some progress, achieving a tier 2 ranking in the 2016 TIP report (US Department of State 2016).

In the 20 years the MSC has been in existence, they have only managed to certify 12% of global fish stocks, disproportionately in the Global North (MSC 2017). While sustainability of fisheries resources is an urgent issue, combatting human rights abuses in not only the fishing industry, but all production sectors, is a more pressing issue as it directly affects the well-being of humans, and the lack of attention to human rights remains a barrier to ecological stewardship (Allison et al. 2012). The question then becomes, if society has repeatedly scrutinized companies for their lack of attention to issues of social justice in supply chains, why is the global society not

doing more to abolish these human rights abuses? Additionally, if the criteria outlined in the Fair Trade CFS address these human rights abuses, why aren't more Fair Trade Certified products available?

In order to address these questions, the model of the Fair Trade CFS and market allocation of certified goods must be considered.

1.1 Fair Trade USA Capture Fisheries Standard

The basic means by which Fair Trade returns benefits of globalization to producers and their communities is by offering a premium for their product, known as the Fair Trade Premium (FTP), which is to be spent within the community, to improve operations, or to improve environmental sustainability. A producer, or another part of a supply chain that is willing to oversee the certification of producers, will apply to Fair Trade directly for certification. They will then prepare their operation for the preliminary audit which assesses whether or not they are meeting the criteria outlined in the standard that applies to their operation. The certification process takes a progressive approach through a Corrective Action Plan (CAP), identifying non-compliant criteria and working with producers to improve upon these issues in order to attain, or retain, certification. Different supply chains must comply with different criteria laid out in the many Fair Trade Standards targeted towards common social and environmental injustices that appear in supply chains. If a producer does not comply with mandatory criteria or if they do not make a conscious effort to deal with non-compliant criteria, their certificate may be suspended, and in some cases, they will be decertified. While Fair Trade most notably certifies coffee supply chains around the world, they have been venturing out into other commodities, including seafood, introducing the Capture Fisheries Standard (CFS) in 2014.

The CFS contains six sets of criteria targeted at environmental and social factors in seafood supply chains. These include: (1) Structural Requirements, (2) Empowerment and Community Development, (3) Fundamental Human Rights, (4) Wages, Working Conditions and Access to Services, (5) Resource Management, and (6) Trade Requirements. These criteria offer a number of benefits to the fishing community that supersede the direct monetary gains from the FTP, and are outlined below.

(1) Structural Requirements

The Structural Requirements lay out administrative bodies to streamline communication and logistical workings of the Fair Trade program. There is an overarching Certificate Holder (CH) who is responsible for overseeing the certification process and ensuring compliance with the CFS, arranging audits and fronting auditing fees, providing required trainings to producers, and assuring FTP is paid to the producers. There is/are Fishing Association(s) (FA) which are groups of fishermen registered in the Fair Trade program who operate in compliance with the CFS and will vote on FTP usage at General Assembly meetings. Finally, there is/are a Fair Trade Committee(s) (FTC), which consists of democratically elected representatives of the registered fishermen who conduct a Needs Assessment which is then used to prepare an annual Fair Trade Premium Plan. This plan outlines how FTP is to be spent within the community to directly address needs identified in the Needs Assessment. The FTC also conducts General Assembly meetings at least once a year to discuss inner workings of the fishery and the Fair Trade program.

In addition to streamlining the entire Fair Trade program, there are many social benefits that may accrue from community-level governance, particularly in developing countries in which fishing communities may lack support from formal governance bodies. Local fishing associations on Ngazidja Island, Comoros, were found to support effective resource management independently while providing redistributive services in the community to alleviate effects of poverty (Hauzer et al. 2013). Additionally, in this case, the national government acknowledged the role of community-governance to address local demands the government fails to attend to (Hauzer et al. 2013). Community-governance has played many roles in communities in Nepal, addressing inequalities, encouraging individual empowerment through democratic decision-making, efficiently allocating resources, and increasing accountability (Acharya 2015). Furthermore, Nun et al. (2014) suggest an important role for community-governance, particularly in developing coastal nations, in decision-making concerning climate change adaptation. Therefore, the possible effects of the CFS Structural Requirements may exceed the administrative streamlining of Fair Trade certification and extend to benefits within the community.

(2) Empowerment and Community Development

The Empowerment and Community Development criteria outline specific requirements regarding FTP allocation and investment. These criteria ensure that producers receive the agreed upon value of FTP from contracted traders in the supply chain. It also outlines requirements of FTP investment to ensure fairness and effectiveness of this benefit to the fishery and the fishing community. This includes a Needs Assessment to identify social, economic, and environmental issues affecting the fishery and adjacent community. The CFS is unique to other Fair Trade Standards in that it requires that 30 percent of FTP must be spent on environmental improvement projects, while the remaining 70 percent is allocated to community development. The Needs Assessment guides an annual Fair Trade Premium Plan that complies with this allocation criteria and outlines how the producers intend to spend their FTP in order to target identified issues.

While many community development initiatives may be delegated by third party actors making the decisions, allowing FTP money to be democratically allocated by the fishermen themselves allows improvement projects to be targeted to independent needs of unique regions. Community involvement in decision-making will increase the likelihood that FTP expenditure will have a successful positive impact on the community and is more likely to garner support from the community. Projects designed to promote sustainable development should be locally targeted and engage relevant stakeholders in order to be successful (Newenham-Kahindi 2015). The participatory planning approach to development projects has produced promising results, where “community involvement in development projects is sought to be useful in community driven and implemented projects” (Naku and Afrane 2016). The role of non-professional inputs from local advisors can be essential in achieving the intended goals of a development project (Naku and Afrane 2016). Thus in mandating a participatory planning approach to community development and environmental sustainability, Fair Trade can help increase the likelihood of extracting the maximum benefit from said projects and effectively contribute to global sustainable development at a broader scale.

(3) Fundamental Human Rights

The Fundamental Human Rights criteria are targeted at common social injustices found in seafood supply chains and ensure that none of these injustices are happening in a Fair Trade

Certified fishery. These address many issues such as discrimination of workers, physical and psychological abuse, human trafficking and forced labour, child labour, corporal punishment, worker recruitment, and freedom of association. In response to these non-compliant criteria, Fair Trade will take a progressive approach which requires fisheries to prepare a CAP in order to mitigate non-compliant criteria.

Fair Trade identifies the need to address labor injustices that tragically are all too common in the fishing industry as an imperative step towards sustainability of fisheries resources and sustainable development. The Fundamental Human Rights criteria seek to address social injustices that have become rampant in many production supply chains, not just seafood, that facilitate competitive advantages at the expense of labour. Informal labour can have many implications on society and “diminish the scope of developing countries to translate trade openness into sustainable long-term growth” (Bacchetta 2009). Additionally, informal employment can incur negative externalities that come at a cost to society through a lack of investment in human capital, lower state revenues, productivity costs, and natural resource depletion (Faure 2015).

(4) Wages, Working Conditions, and Access to Services

Wages, Working Conditions and Access to Services criteria are in place to guarantee a baseline of minimum standards in the workplace for registered fishermen and land-based workers in the fishery. This includes guaranteeing at least the legal minimum wage for workers, defining appropriate work hours and overtime agreements, ensuring the provision of health and social services to all employees, and outlining acceptable workplace conditions.

Many countries, whether developing or developed, focus legislation and policy toward redistribution of wealth in order to promote a higher degree of societal equality and reduce the incidence of poverty. This includes minimum wage policies and other government provisioned social services like healthcare. Rani and Belser (2010) found that in India, implementation and enforcement of minimum wage policies can reduce the likelihood of citizen impoverishment by up to 10%. The CFS also hold criteria that ensures a certain standard of workplace safety where negligence or insufficient mitigation of workplace hazards can culminate as large costs to society in the form of worker compensation (ILO 2006).

(5) Resource Management

Resource Management outlines specific criteria to ensure sustainable practices in a certified fishery. The criteria outline specific ecological minima that must be met in order to attain certification regarding stock health, endangered species interactions, habitat impact, and waste management. This section also includes criteria for social aspects of resource management, including to adherence to regional, national, and international laws about fishing practices. If a fishery is already certified by the MSC, this section will be omitted by auditors, only assessing the waste management and governance criteria. This is because the MSC has a more rigorous process to assess the sustainability of fisheries resources and is credited by Fair Trade to be a reliable indicator of appropriate resource management.

When it comes to industries of natural resources, environmental sustainability and economic sustainability go hand in hand. Society not only becomes dependent on the resource to contribute revenues to the economy, but many of these industries, including wild capture fisheries, provide jobs for thousands of people which ultimately support communities at a greater scale. Dyck and Sumaila (2010) investigated the multiplying effect capture fisheries have on the economy at the global scale and estimate a net worth of direct, indirect, and induced impact to be between US\$225 and US\$240 billion each year. These multiplied benefits to the greater economy reflect biological populations and are therefore entirely reliant on thriving fish stocks. Additionally, there are enumerable ecosystem services of marine ecosystems that provide benefits for humankind on a daily basis such as fisheries resources, storm surge protection, carbon sinks, and supporting other industries such as tourism (De Groot et al. 2012). Destroying marine habitat diminishes the benefits that society gains from a healthy marine ecosystem, in the present and in the future, and therefore taking precautions when it comes to negative impacts in the fishing industry can promote sustained use, and therefore benefit, of these resources. Additionally, fishing in excess of sustainable levels may incur future losses of revenue. For example, due to unsustainable fishing practices in Thailand, the industry contributes only about half of what it would each year if it were managed sustainably to the national gross domestic product (GDP) (EJF 2015).

(6) Trade Requirements

The Trade Requirements criteria address aspects of product and FTP traceability through supply chains and producer-importer/exporter contractual relationships. This is to ensure the integrity of the Fair Trade seal throughout the supply chain and ensure producers are reaping the benefits from trade agreements. These criteria also address protocol following program suspension or decertification.

While Fair Trade encourages traceability to promote transparency in supply chains, it can also help businesses by establishing relationships with producers in order to promote a more consistent supply of product (Fair Trade USA 2014). Additionally, traceability can offer improved supply chain management which can lead to more efficient transactions (Mai et al. 2010). The producers themselves also retain benefits from traceability. By ensuring traceability and ensuring fishermen take a more active role in transactions, producers can take control of their own product and potentially cut out mid-supply chain actors. In some ways, cutting out middle-men who may exploit fishermen by undervaluing their product without them knowing may have advantages, but in many isolated fishing villages, middle-men can also provide necessary financial, physical, and human assets, meaning their removal from supply chains should be well-considered (Bailey et al. 2016).

1.2 The Fair Trade USA Seafood Supply Chain

It is imperative to have an understanding of the role each player in the supply chain has in the certification process. This is especially important to consider where the costs of certification fall as the limiting factor in terms of widespread provision of certified seafood. Figure 1 presents a simplified Fair Trade Certified supply chain.

The blue arrows represent the flow of goods from producers to the consumer throughout the supply chain (Figure 1):

- A. Producers supply product that was caught in compliance with the CFS criteria and only the product caught by registered fishermen is eligible to be sold at a premium value. The body responsible to pay for the FTP is often the first buyer within the supply chain, but this entity can be different for every fishery. Often this is the processor who will also be

the CH for the fishery, but this can also be an importer/exporter who has contractually agreed to pay the FTP for certified product, or even the producers themselves.

- B. Fair Trade product must be kept separate from any other product that the operations are handling. This stage can be complex as seafood product can be destined for very different markets. In this case, there is a brand holder or a retailer who essentially is the entity that will be using the Fair Trade seal to their benefit. For a packaged product, this would be the brand that is using the Fair Trade seal on their packaging. For product sold fresh at supermarkets, this could be the retailer who presented the seal along side the product they are selling. For restaurants, this could mean the use of the Fair Trade seal on their menu.
- C. The product is then bought by consumers, whether they are choosing the product intentionally as a result of certification, or inadvertently.

The green arrows represent how money flows through the supply chain:

- D. Consumers will only directly pay for certified product to the brand holder or retailer who intends to benefit from the Fair Trade seal through product differentiation, primarily within niche markets for sustainable products.
- E. The entity that extracts the benefits from the use of the Fair Trade seal (a.k.a., the brand holder) is responsible for paying 2% of the wholesale value of the volume of Fair Trade product sold as a service fee to Fair Trade USA.
- F. The entity that agrees to buy Fair Trade product at a premium price receives money from the brand holder or retailer who is willing to pay for the premium product as to not incur costs on their own operation.
- G. The supply chain entity that has agreed to pay the FTP pay the producers a premium flat rate per pound of Fair Trade Certified seafood they purchase from producers. The intention is that the market price for product is retained by the fishery for operational costs and the additional amount per pound of product goes into the bank account of the FTC, destined to be spent according to the Fair Trade Premium Plan to make it's way back into the community.

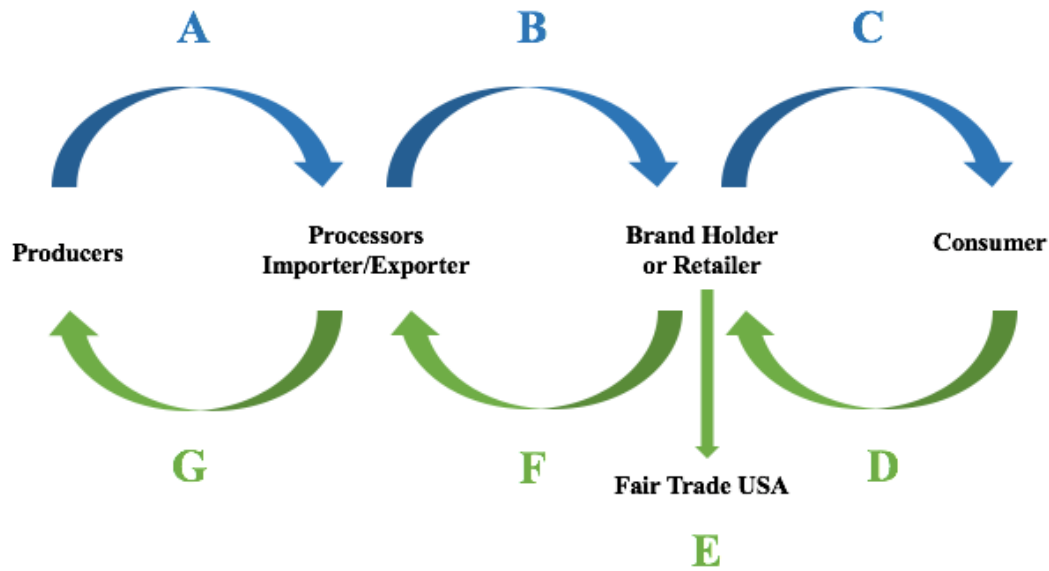


Figure 1. Simplified Fair Trade Certified supply chain.

There are two key stages that manifest as costs to players in the supply chain: the FTP and the 2% service fee to Fair Trade USA. Fair Trade recommends that these extra costs on private firms are reflected in the final price to consumers as to not incur any additional costs on their own operations. Therefore, the consumer ends up paying for the brunt of Fair Trade certification. Fair Trade also recommends that businesses do not add these costs on top of margins to ensure the costs do not get compounded through the value chain. That is not to say that operations will not incur costs external to these and costs of audits and trainings. There may be operational changes required in order to keep Fair Trade product separate as it moves through the supply chain in order to meet the CFS criteria regarding traceability requirements and the Fair Trade Trade Standard. A company may also incur additional costs with respect to packaging which are not reflected in the FTP or service fee. These may end up as costs incurred on the firms themselves, or additional costs passed down to the end consumer.

1.3 Social cost-benefit analysis of the Fair Trade CFS

Strictly considering the costs along the supply chain associated with Fair Trade certification, there appears to be a lack of economic incentive for supply chains to pursue

certification. Traditionally the gains from acquiring certification and adopting sustainable fishing practices manifest as gains from increased market access through product differentiation and niche marketing, and guaranteed future profits by adhering to sustainable fishing practices, specifically to the fishing industry itself. While Fair Trade has made an impact for a large number of producers supplying a variety of products around the world, there appears to be an economic disincentive hindering widespread provision of certification. What is likely not considered by industry players is the external benefits that may accrue to society through compliance with the CFS or any of the other Fair Trade Standards. Quantifying these benefits to the global society may expose a means by which to incentivize more widespread provision of Fair Trade Certified goods and help identify third party beneficiaries accruing benefits.

Identification of social benefits can be useful where market failure exists (Cameron 2011). Many forms of market failure act as precedence for social cost-benefit analysis, and this study seeks to assess the possibility that Fair Trade certification results in market failure in the form of a positive externality in production (Cameron 2011). When the marginal social benefit of production exceeds the marginal private benefit of production, there is a resultant positive production externality. It is hypothesized here that achieving certification promotes positive externalities. That is to say, a fishery that seeks to increase the private benefit to the fishery by gaining market access through Fair Trade certification will also have to adhere to the social criteria of the CFS which will inadvertently benefit society at regional and global scales. This is especially of importance where economic incentives can actually promote social injustices as a means of reducing production costs, and therefore maximizing profits (Faure 2015). Quantifying the benefits of good social practices in seafood supply chains is imperative to demonstrate economic incentives alongside ethical incentives in order to encourage socially responsible supply chains.

In the event that a positive externality exists in compliance with the CFS, it is suggested that Fair Trade Certified seafood is underprovided and undervalued in the marketplace. That is to say that there is an inefficient allocation of resources where the socially efficient equilibrium lies above the free market equilibrium, and therefore theoretically, society demands increased provision of certified goods in order to extract more benefit (i.e. society will extract the maximum benefit at the socially efficient level of production). This also infers that the fishery and its supply chain are not internalizing the benefits they are incurring on society by producing

in compliance with the CFS and the socially efficient price is higher than the market price for their product. This price is known as the “shadow price” which is revealed where market failure persists in consideration of the external benefits that exist in the production of a good or service (Cameron 2011). In the case of Fair Trade certification, the socially efficient equilibrium marks the shadow price of Fair Trade Certified product along with the volume of Fair Trade product that society demands based on the benefits they accrue from its production (See Figure 2).

The marginal private benefit (MB_P) includes the benefits to the entire certified supply chain per additional unit of certified product. This is primarily the revenues from the production of certified seafood. Figure 2 demonstrates aggregate benefits of the entire supply chain, from the producer level to the end product. This is also the case for the marginal costs of production, which represents the cost of production per additional unit of certified product (MC_P). The MB_P

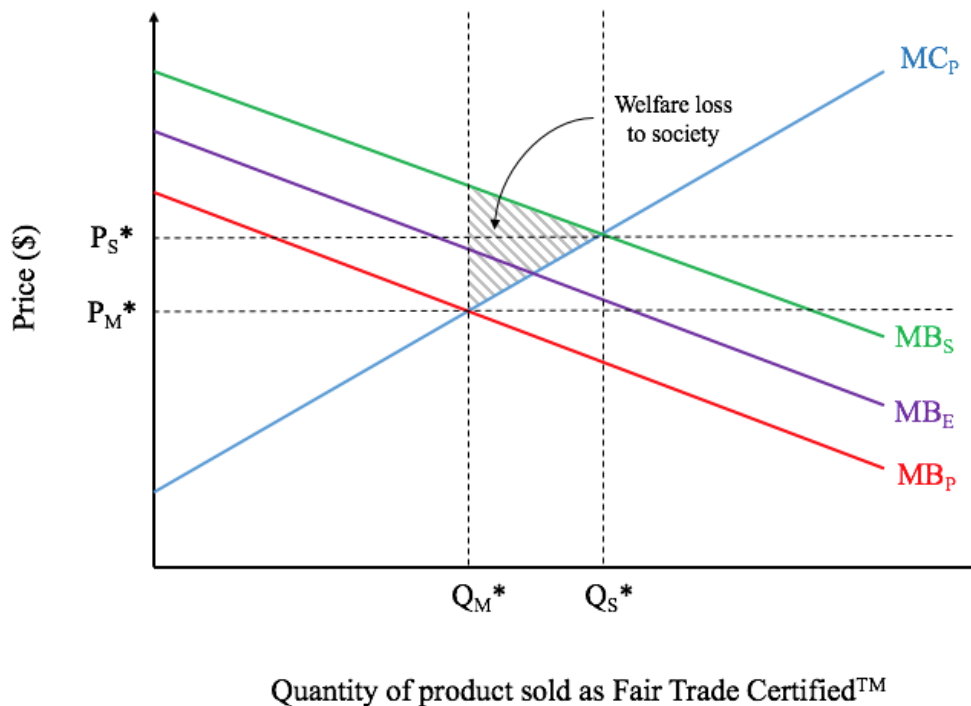


Figure 2. Theoretical model of a positive production externality.

demonstrates diminishing returns that reflect the diminishing returns of consumer demand for the product. Incidentally, this means a third party beneficiary will only extract benefits that reflect consumer demand of the good or service and experiences diminishing returns as well. The efficient allocation of resources solely in consideration of private sector values is known as the market equilibrium (found at a quantity of Q_M^* and a price of P_M^* in Figure 2). The marginal

external benefits (MB_E) are benefits that inadvertently result in the production of Fair Trade Certified products through compliance with the CFS criteria per additional unit of certified seafood produced.

This research seeks to identify and attempts to quantify certain indicators of the CFS that manifest as external benefits to the global society. The marginal social benefit (MB_S) is the aggregation of the MB_P and MB_E . In the event that external benefits accrue from the production of Fair Trade Certified seafood, there is a possibility that a socially efficient equilibrium exists where MB_S is equal to MC_P (found at a quantity Q_S^* and a shadow price at P_S^* in Figure 2). The market equilibrium quantity is less than the socially efficient equilibrium quantity and the shadow price is higher than the market price ($Q_M^* < Q_S^*$; $P_M^* < P_S^*$). This is a positive production externality, meaning the provision of Fair Trade Certified seafood is both undervalued and underprovided in the market, resulting in market failure. This also means that there is a net welfare loss to society (quantified by the area of the shaded triangle in Figure 2) in failure to correct for this market failure, and that society, therefore, has something to gain from more widespread provision of Fair Trade CertifiedTM seafood.

It is inferred that more widespread provision of Fair Trade Certified products in general will culminate in an increased impact on mitigating human rights abuses and environmental degradation in supply chains and increase the scope of sustainable global development. The limiting factors to widespread provision of Fair Trade Certified product are the combination of lack of consumer knowledge, and therefore demand, for these products and consumer budget constraints. Given the limitations of consumer willingness to pay for certified goods, alternative strategies to improve the competitive advantage of certified product in the market must be considered.

1.4 Correcting the market failure

In the event market failure exists as a result of a positive externality that is generating benefits to society, there may be precedence for government intervention in the provision of said good or service. For example, education incurs benefits on society by teaching citizens basic or specialized knowledge in order to contribute to society in the future. Left up to the free market, education, hypothetically, could become too expensive and no longer accessible to everyone in

society. Therefore, government intervention allows for non-exclusive and non-rival provision of education for members of society.

For the country that sells Fair Trade products, primarily the US, whether or not there is precedence for government intervention in the provision of Fair Trade Certified products depends on whether or not having the right to choose a product that is sustainably and ethically sourced over one that is not is perceived as a public good. For the countries within which Fair Trade operations originate from, this depends on whether or not the benefits may accrue to society by complying with the CFS criteria will be shared within the public. A public good or service is one that is non-rival and non-exclusive. For the countries where Fair Trade products are sold, the right to choose certified goods is both rival and exclusive in that these products are required to compete with similar product that can bear a lower price and, due to the premium price of the end product, is only accessible to those who can afford it. Traditionally, certification schemes encourage, and largely rely on, consumers “voting with their dollar”. For a product that is rival and exclusive, voting according to an individual’s values is nearly impossible when other factors exist. As costs for these products are often higher through free market allocation, a budget constrained consumer may not be able to “vote with their dollar”. In consideration of what Fair Trade certification seeks to accomplish, namely producer empowerment and adherence to a certain standard of environmental and social performance in supply chains, it seems as though, on a moral level, these products should not only be available to all members of society, but should be the rule and not the exception in supply chains. For the countries where production originates, whether or not the government may have an incentive to intervene to correct for the market failure depends on whether or not the issues addressed by the CFS criteria encourage the betterment of society.

This research seeks to identify and quantify potential external benefits to the global society in the production of Fair Trade Certified seafood in order to expose the possibility that there is a positive production externality in the provision of these goods. In the event a positive production externality exists, there may be opportunities in the public sector that can encourage more widespread provision of these products to correct for the market failure given the benefits incurred on the global society.

CHAPTER 2: METHODS

2.1 Developing the framework

Quantifying the external benefits that may accrue in compliance with the CFS criteria requires 4 steps (Figure 3), with a myriad of assumptions pertaining to those steps along the way. The following is a list of assumptions (see Table 1) that are important to bear in mind in moving from general criteria indicators to quantifiable Fair Trade relevant indicators to be modelled in an equation.

Table 1. Table of assumptions

<i>Application</i>	Assumptions:	
<i>Definitions</i>	1	The global society refers to any person affected that is not directly linked to the fishing industry itself. This is a third party that benefits, free of charge, from the actions of a fishery complying with the CFS criteria.
	2	The “fishing industry” includes all direct players operating in the value chain, including producers, processors, importers/exporters, brand holders, and retailers.
<i>Quantification</i>	3	Previous research demonstrating “costs” associated with the social indicators are assumed to be opportunity costs of complacency in mitigating these issues. While in the present these estimates represent a cost to society, if a fishery were to be certified, these costs would offer a benefit directly proportionate to these costs.
	4	If every producer (including all other sectors, not just the fishing industry) were to be certified according to Fair Trade standards, the costs to society revealed pertaining to these indicators would no longer exist (and would be equal to zero) and the benefit to society would be exactly proportionate to these costs.
<i>Proportions</i>	5	Not all producers who are transitioned to registered fishermen under Fair Trade certification were subjected to any/all of the issues addressed by the CFS criteria.
	6	“Relative worth” implies there is not a direct correlation between estimates of indicators and an actual certified fishery. This disclaimer stipulates that when the equation is applied to an actual fishery, it does not infer that the proportions applied directly correspond to the extent of the issue which the criteria addresses.
<i>Output</i>	7	An operation that is certified by Fair Trade guarantees that those that fall under the scope of the certificate will comply perfectly with the criteria of the CFS.

The four steps that were taken to estimate the external benefits of adhering to the CFS criteria are the following:

1. Identifying possible indicators – Decision tree
2. Scaling selected indicators
3. Developing the model
4. Generating outputs with Fair Trade data

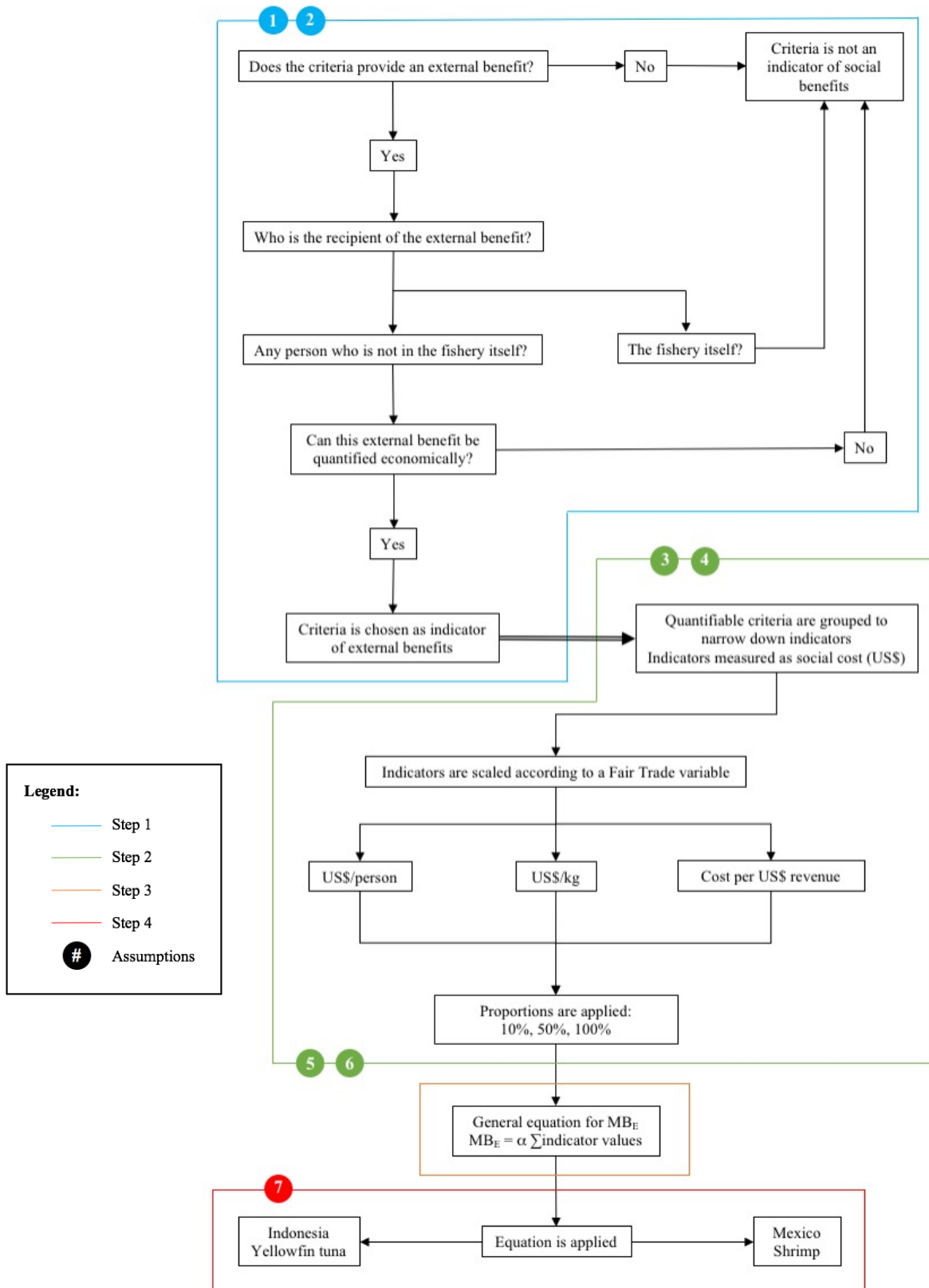


Figure 3. Decision tree and methodological flow chart.

2.1.1 Step 1: Identifying possible indicators – Decision tree

In order to identify indicators to quantify external benefits of the CFS, the criteria were probed using a decision tree (as Step 1 in Figure 3).

Evidence from literature along with creative brainstorming were used in order to determine whether or not a criterion could manifest as a benefit to any individual external to the fishery itself, in consideration of assumptions 1 and 2 (see Table 1). In order to determine whether or not the criterion could be quantified, the literature was reviewed to assess whether or not there was existing research that was able to narrow down a dollar value for the selected criteria (or group of criteria). Only if an indicator made it through these stages would it be included into the model. The goal was to identify at least one indicator for each of the six sets of criteria outlined in the CFS.

2.1.2 Step 2: Scaling selected indicators

Once indicators were chosen from the criteria, the values were scaled to coincide with the data that is periodically collected (each quarter) by Fair Trade for certified fisheries. These include: number of registered fishermen, landed volume of Fair Trade product (kg), FTP (determined by Fair Trade based on species, ex-vessel value, and market flexibility; US\$/kg), and revenues of Fair Trade product sold (US\$). In order to produce a value to represent the marginal external benefit associated with achieving certification, values obtained from literature review were subsequently scaled according to these variables. Primarily, marginal values were represented as the benefit (2016 \$US) per additional producer to fall under the scope of the certificate (i.e. number of registered fishermen). Therefore, the marginal external benefit of compliance with the CFS criteria is represented as 2016 \$US/registered fisherman (F_{FT}). The indicators were quantified based on assumptions 3 and 4 (see Table 1). It is imperative to note that it is also assumed that variables are quantified whilst holding all other variables constant and do therefore not affect one another. Datasets provided by Fair Trade include data from 2016 and therefore, values retrieved from the literature were inflated to 2016 \$US using a publically available inflation calculator online in order to be comparable, according to the US Consumer Price Index.

Proportions were applied in order to provide a closer estimate of the actual relative worth of these indicators. These proportions were applied on the basis of the previously described assumptions (assumptions 5 and 6 in Table 1).

If the value of external benefits were to apply to every single individual that falls under the scope of the Fair Trade certificate, it would infer that every individual within the fishery was non-compliant with the CFS criteria chosen as indicators and upon adherence to the criteria, was able to extract the maximum benefit. However, it is rare that a fishery that seeks to be certified has 100% non-compliant criteria. Therefore, the 100% non-compliant setting was applied for demonstrative purposes to exemplify the maximum extraction of benefit. In order to represent more realistic relative worth of the external benefits, both a fishery that is 10% non-compliant and 50% non-compliant were considered. These were chosen to provide a range that could encapsulate variance among indicators. This is necessary because some indicators may be based on more common non-compliant criteria than others. For example, an extreme criterion dealing with something such as human trafficking and forced labour may not be as common as a criterion that addresses occupational safety. The proportions represent an estimate of relative worth of the external benefits incurred on society for a fishery making the transition to a certified fishery. Although information about the actual degree of non-compliant criteria may be available for the chosen fisheries, keeping these proportions universal improves the versatility of the model. The proportion of non-compliant criteria is represented as the variable ‘ α ’.

2.1.3 Step 3: Developing the model

Marginal external benefit

The aggregation of the sum of the indicators and the marginal private benefits provides a general equation for the estimated marginal social benefits (MBs). It is this aggregation which may reveal a positive production externality. While quantitatively estimating a positive production externality in the provision of Fair Trade products is out of scope of this research, revealing the external benefits relative to revenues may provide evidence that a positive production externality is likely, under the assumption that there is no increase in the marginal cost of production.

$$MB_S = MB_P + MB_E$$

A comprehensive methodological flow chart summarizes the steps taken in order to arrive at an equation to represent the MB_E of adherence to the CFS (see Figure 3).

It is important to note that in order to theorize a complete model as shown in there are a number of variables that were out of scope of this research. This research focuses particularly on the actions of a fishery attaining certification, however for the complete model, the entire supply chain would need to be considered. Thus for the purposes of this research, there will be a focus on the costs and benefits to the first node in the supply chain (i.e. the producers and any processors that fall under scope of the certificate). Although it is not just the actions of those that fall under the scope of the certificate that contribute to the realization of these benefits, there are too many unknown variables to be able to conceptualize the model to the full extent.

First and foremost, private information is not available, and therefore there is no way to calculate the marginal costs of production (which would be the aggregate costs of the entire supply chain). Additionally, there is no way to determine the demand for certified product for this research. There would need to be information about the public's willingness to pay for both uncertified and certified seafood in order to reflect a realistic model. In the absence of this market information, benefits will rise infinitely in a linear fashion, which does not reflect the marketplace. Finally, in this model the benefits will represent a marginal value per additional individual to fall under the scope of the certificate, rather than the quantity produced. This is due to the nature of the criteria of the CFS that largely affects the lives of people. If the other unknown variables were revealed, it would be ideal to look at these values per volume of certified product caught.

The Model

Indicator values were scaled to provide marginal external benefits for an additional individual falling under the scope of a CFS certificate. This is represented by the following equation:

$$MB_E = \alpha \sum \text{indicator values}; \quad \text{Where: } MB_E = \text{marginal external benefit}$$
$$\alpha = \text{proportion of non-compliant criteria}$$

This can then be used to calculate the total external benefit:

$$B_E = \alpha (\sum \text{indicator values}) F_{FT}; \quad \text{Where: } F_{FT} = \text{number of registered fishermen}$$

While the FTP is primarily a monetary benefit to the fishing community, which is representative of the global society as per assumption 1 (Table 1), it was omitted as an indicator of social benefits. Referring back to Figure 1, while the FTP does go directly back into the global society, it is also considered a cost to the first buyer in the supply chain. As it is recommended to be passed down to end consumers, which are also considered to be part of the global society (as per assumption 1 in Table 1), the FTP is both a benefit that accrues to society and a cost incurred on society in the context of the entire supply chain. Therefore, the net benefit of the FTP is zero.

2.2 Applying the framework

2.2.1 Step 4: Generating outputs with Fair Trade data

The equation was applied to two Fair Trade Certified fisheries: a yellowfin tuna fishery in Indonesia and a shrimp fishery in Mexico. Data were supplied by Fair Trade USA for 2016 and are shown in Table 2. Assumption 7 (Table 1) applies to the values generated for these fisheries through the application of the framework.

Table 2. 2016 data of Fair Trade Certified Yellowfin tuna (Indonesia) and shrimp (Mexico).

Fishery	Number of registered fishermen (F_{FT})	Volume FT product (kg) (V_{FT})	V_{FT}/F_{FT}	Revenues from FT product (US\$ 2016)	US\$/F_{FT}
Yellowfin tuna (Indonesia)	731	444,659.10	608.29	1,151,667.09	1,575.47
Shrimp (Mexico)	577	124,123.46	215.12	922,987.71	1,599.63

The percentage of the value of the marginal external benefit relative to the marginal private benefit was also considered in order to demonstrate the impact one fisherman can make relative to what they garner in private revenues to the fishery.

$$\% \text{ increase} = (\text{MB}_E / \text{MB}_P) \times 100$$

2.2.2 *Return on Investment (ROI)*

Fair Trade certification does not come free of cost. As previously stated, there are auditing costs and costs of training that are paid by the CH in order to get certified. For the purpose of this research, only the cost of auditing is included, and it is assumed that the CFS criteria were able to be implemented at no additional production cost to an operation to accommodate for non-compliant criteria.

The costs of an audit can vary dramatically depending on the scope of the certification. It is largely dependent on a number of factors, including F_{FT} , the number of FAs, the number of FTCs, the number of landing sites and processing facilities, and whether or not the fishery is certified by the MSC (as a fishery that is already certified by the MSC only requires one auditor to be present which can drastically reduce the price of an audit). Fair Trade estimates audit costs for fisheries to range from US\$8,000-20,000 (Ashley Apel, personal communication). The costs of trainings are not specified, and in the absence of a reliable means of estimation, these costs will not be considered, but is assumed to be less than the cost of an audit.

In order to scale the costs of an audit to represent the marginal cost of obtaining certification as the additional cost per individual certified, the provided range will be considered for the selected fisheries (See Table 3). The marginal cost of attaining certification (MC_{FT}) can be represented by the following:

$$MC_{FT} = (8,000 \text{ to } 20,000) / F_{FT}$$

The entire range will be considered in evaluation of the return on investment (ROI). The ROI demonstrates the difference between the profits of certification compared to the cost. Should the aggregation of MB_E and MB_P (as the marginal benefit to society, or MB_S) be greater than the MB_P on its own, the theory suggests the possibility of a positive production externality (See

Figure 2). In that case, in order to correct the market failure, there is an incentive for the third party beneficiaries extracting benefits free of charge, otherwise referred to as free riders, to bear the costs of certification (whether it is society itself as a private entity, or government intervention). The ROI is meant to demonstrate what society serves to gain by investing in Fair Trade certification. If $B_E \geq C_{FT}$, there is a positive ROI, which therefore represents a good investment. $B_E < C_{FT}$ suggests a negative ROI, and therefore not a favourable investment. The ROI can be represented as the difference between the marginal benefits and marginal costs of certification relative to the marginal cost:

$$ROI = (MB_E - MC_{FT})/MC_{FT}$$

The ROI represents the factor by which an investment will demonstrate returns. As marginal values are per additional fishermen certified, this means for ever dollar spent towards certifying an additional fisherman, the ROI demonstrates the returns associated with certifying that additional fisherman.

Table 3. Range of marginal costs of Fair Trade certification (MC_{FT})

Fishery	F_{FT}	MC_{FT} audit = \$8,000 2016 US\$/F_{FT}	MC_{FT} audit = \$20,000 2016 US\$/F_{FT}
Yellowfin tuna (Indonesia)	731	10.95	27.36
Shrimp (Mexico)	577	13.86	34.66

Fair Trade Certified yellowfin tuna: Indonesia

The handline yellowfin tuna fishery in Indonesia was the first ever Fair Trade Certified fishery. Beginning in 2013 as a pilot program, Anova Food, as the CH, worked in partnership with Fair Trade to establish the Seafood Program with this fishery. While the initial scope of the certificate started small in the Maluku Islands of Eastern Indonesia, the scope expanded to include fishing operations in Seram Island in Eastern Maluku and Toli-Toli in North Sulawesi. It

is not comprised of 731 registered fishermen as of 2016. FTP investments have been used for a range of projects, including public infrastructure renovation, beach clean-ups, first aid kits, life jackets, and many more (Ruscetta 2016).

Fair Trade Certified shrimp: Mexico

This shrimp fishery in Sinaloa, Mexico, was part of a long-term Fisheries Improvement Project (FIP), which acts as a stepping stone towards the achievement of MSC certification. Del Pacifico Seafoods, as the CH, along with MHMR International as a supplier were able to obtain a Fair Trade certificate in January, 2016. The fishermen in Sinaloa operate vessels about 25 meters in length in boats called “pangas”. As opposed to larger scale trawl operations, the Sinaloa fishermen use hand nets and cast nets, which produce less bycatch and require less fuel. There were 8 established fishing cooperatives for artisanal shrimp fisheries operating in the Sinaloa and as of 2016, 577 fishermen registered in the Fair Trade program (Kearns 2016).

CHAPTER 3: RESULTS

3.1 Developing the framework

3.1.1 Step 1: Identifying possible indicators – Decision tree

The goal was to identify at least one indicator for each of the six categories of the CFS:

1. Structural Requirements
2. Empowerment and Community Development
3. Fundamental Human Rights
4. Wages, Working Conditions, and Access to Services
5. Resource Management
6. Trade Requirements

After following the decision tree (Step 1 in Figure 3), there were a number of criteria that could be grouped into subcategories concerning the umbrella issue they are directed at (Table 4). This culminated in six indicators which are derived from the multiple criteria pertaining to three of the six categories of the CFS (Table 5).

Table 4. Decision tree results of indicators pertaining to the CFS criteria codes

CFS code	Criteria
FHR – FL 1.1	Human trafficking and forced, bonded, and compulsory labour does not occur
FHR – FL 1.3	The employer does not retain any part of the workers’ salary, benefits, property or documents in order to force them to remain.
FHR – FL 2.2	The levying of recruitment fees on individual fishers or workers for their employment or migration, whether internal or cross-boarder, is prohibited.
WWS – CE 2.1	Conditions of employment, including wages, either meet or exceed sector regulations, Collective Bargaining Agreements (CBAs) in place with the employer, the regional average minimum wage, and legal minimum wages for similar occupations.
WWS – CE 2.4	For remuneration based upon production, quotas, or piecework, the pay rate allows the worker to earn the proportionate minimum wage or relevant industry average (whichever is higher) during normal working hours.
WWS – OH 1.1	Work processes, workplaces (including vessels, docks, landing sites), machinery and equipment, and worker transportation are as safe as possible, and equipped with adequate safety devices.
WWS – OH 1.2	The following persons are not allowed to be engaged in any potentially hazardous work: persons younger than 18 years, pregnant or nursing women, persons with incapacitating mental conditions, persons with chronic, hepatic or renal diseases, and persons with respiratory diseases. The employer provides an alternate job at the same pay and benefits if a change is needed due to this requirement.
WWS – OH 1.3	Registered fishers and applicable workers use Personal Protective Equipment (PPE) as appropriate to their tasks. The PPE is functional and properly maintained, and registered fishers and applicable workers have been trained on proper use. PPE is not taken home.

WWS – OH 1.4	Workers are provided Personal Protective Equipment free of charge.
WWS – OH 1.5	Adequate first aid supplies and access to medical services are provided in the case of workplace accidents.
WWS – OH 1.6	Where a significant number of workers are employed, the employer provides all workers with necessary working clothes appropriate to their tasks and free of charge. These working clothes are replaced regularly.
WWS – OH 1.7	The employer provides medical care for all workplace injuries and illnesses and pays for recovery to any work-related illnesses or injuries, as well as lost wages during recover time. Sick leave due to work-related accidents is not deducted from annual leave.
WWS – OH 1.8	A maintenance and repair system is put in place to ensure a safe, clean, and hygienic environment at all times.
WWS – OH 3.1	Training on the use of the protective equipment and the risks associated with hazardous materials is provided at least once a year to registered fishers and applicable workers. These trainings are documented, and records are kept on file.
WWS – OH 3.2	There are trained first aid personnel available to respond to emergency first aid situations.
WWS – OH 3.3	Where a significant number of workers are employed, the certificate holder has conducted training and simulation exercises on the health and safety policy.
WWS – OH 3.4	Risk areas and potential hazards are clearly identified by warning signs in all relevant languages, which include pictograms.
WWS – OH 3.5	Written safety instructions and procedures include details regarding accident prevention and response, including pictograms where appropriate, and are readily available to workers at their work place.
WWS – OH 4.1	Where a significant number of workers are employed, records are kept of all work accidents and related first aid response.
WWS – OH 4.2	Applicable only for workers on vessels >24m that stay at sea longer than three days: Fishers have a medical certificate attesting to their fitness to work. For workers over the age of 18, the certificate is less than two years old. For workers younger than 18, the certificate is less than one year old.
WWS – OH 4.3	Where a significant number of workers are employed, there is a written health and safety policy to identify and minimize worker's occupational risks. The policy is based upon a risk assessment and updated annually.
WWS – OH 4.4	Where a significant number of workers are employed, an individual is nominated to be in charge of occupational health and safety matters for the registered fishers and individual worksites. This person brings health and safety issues to the attention of the employer.
WWS – OH 4.5	Incident reports are summarized annually and submitted to relevant authorities to provide notification/statistics on fatalities, injuries, and diseases.
WWS – OH 4.6	An electronic communications network for finding lost vessels and coordinating ship to shore communications is in place on all vessels.
RM – GOV 1.1	There is no evidence that local, national, and international laws regarding fishing practices are being broken by registered fishers, including regulations concerning fishing gear, boats, fishing effort, fishing location, and illegal harvesting of species. This includes shark finning.
RM – GOV 1.2	An IUU enforcement strategy has been created to identify and report illegal, unreported, and unregulated (IUU) fishing in the area to the relevant authorities.
RM – GOV 1.3	The IUU enforcement strategy is reviewed annually and updated where necessary to ensure the strategy is effectively reaching the stated goals.

*the glossary of the Fair Trade CFS defines a “significant number of workers” as greater than five workers at any one time.

Table 5. Chosen indicators based on CFS criteria.

3. Fundamental Human Rights			4. Wages, Working Conditions, and Access to Services		5. Resource Management
<p>FHR – FL 1.1</p> <p>FHR – FL 2.2</p>			<p>FHR – FL 1.3*</p> <p>WWS – CE 2.1</p> <p>WWS – CE 2.4</p>	<p>WWS – OH 1.1-1.8 3.1-3.5 4.1-4.6</p>	<p>RM – GOV 1.1-1.3</p>
A	B	C	D	E	F
Forgone taxes from illegal labour production	OECD aid money spent on human trafficking	Costs of trafficking	Forgone taxes from underpaid wages	Workers' compensation due to poor occupational safety	Losses due to IUU fishing

3. Fundamental Human Rights

The identified criteria are set in place to ensure that there is no forced labour or human trafficking in a fishery that is certified by Fair Trade. That is to say that a fishery that is certified will guarantee that those that fall under the scope of the certificate, including registered fishermen and workers within processing facilities, are guaranteed to be safe from forced labour and human trafficking while the fishery is certified, and will remain risk free so long as they continue working under the CFS (as per assumption 7 in Table 1). The International Labour Organization (ILO) (2014) estimates that the global fishing industry includes 54.8 million people working in primary production of seafood and about 38.3 million on fishing vessels at sea. Additionally, fishing is believed to be an industry with a high risk of human trafficking and forced labour (ILO 2014).

A. Forgone taxes from illegal labour

Faure (2015) discusses many of the social costs associated with forced labour, including lower state revenues, productivity costs, lack of investment in human capital and depletion of natural resources. This served as a starting point to identify whether or not any of these social costs could be estimated. Faure (2015) discusses productivity costs, which were difficult to interpret for the fishing industry as it largely relates to the productivity relative to land owned, and when it comes to fishing, ownership of fisheries resources is absent or unclear. Investment in human capital is also difficult to quantify as it largely depends on the degree of development in the country of origin. When it comes to the depletion of natural resources, Faure (2015) cites evidence that slave labour is one of the largest contributors of greenhouse gas emissions and as they are largely disenfranchised, they do not necessarily know that their actions have negative ramifications. This may also apply to the unsustainable extraction of fisheries resources. This is very difficult to quantify as the extent to which slaves are contributing to this issue and the associated societal costs of unsustainable fishing are unknown.

Lower state revenues, however, may be quantified. While Faure (2015) describes the losses associated with forgone personal income tax due to forced labour (which will be discussed further in Wages, Working Conditions, and Access to Services), there are also forgone corporate income taxes from profits generated from forced labour (ILO 2014). A report released by the ILO (2014) estimated that, globally, profits generated from forced labour can reach US\$150 billion dollars annually. This represents a cost to society, as “governments and societies are also harmed because the profits generated by forced labour bypass national tax collection systems” (ILO 2014). This report further delineates the profits into sectors, stating that the agricultural sector (which includes fishing), contributes about US\$8.9 billion to the global total (in 2012 US\$). In order to estimate the forgone state revenues from these profits, the average global corporate income tax for 2012, corresponding to the year the data were collected, was used. In 2012, the average global corporate income tax was 27.04% (KPMG n.d.), which means the social cost of profits generated from forced labour is estimated at US\$2.406 billion (Table 5).

B. OECD aid money spent on human trafficking

Research conducted by the Anti-Trafficking Review (2014) estimated the amount of aid money OECD countries has spent on human trafficking between 2004 and 2012. Estimates

provided by Ucnikova (2014), a contributing author on this report, suggests that cumulative spending over ten years was estimated at US\$1.2 billion, resulting in about US\$124 million annually (in 2014 US\$)(Table 5). This represents a cost to society as this is money that either could have contributed to other issues, or could have been retained by these countries to spend within their respective nations.

C. Costs of trafficking coercion

Research conducted by the ILO (Vinogradova et al. 2009) attempted to quantify the costs of coercion. This included both the costs associated with underpaid wages (which will be revisited for Wages, Working Conditions, and Access to Services) and costs paid by victims of human trafficking to their traffickers. This was included as a cost to society as this is money spent by individuals prior to their inclusion in the production operation where they ended up and is therefore not representative of costs to any person within the operation itself (as firm-level costs). This is likely money that ideally would have been used to support the livelihoods of the individuals themselves, their families, or their communities, and is therefore regarded as a loss to society.

Research collected in 2007 for the ILO report (Vinogradova et al. 2009) estimates that these costs culminate in about US\$1.4 billion a year, representing US\$1,271.24 per victim trafficked (Table 5).

4. Wages, Working Conditions, and Access to Services

The criteria of this section can be subcategorized into two quantifiable indicators: workers' compensation due to poor occupational safety and forgone state revenues from personal income tax from unpaid wages.

D. Workers' compensation due to poor occupational safety

A report conducted by the ILO (2006) regarding occupational safety estimates that each year, 4% of global GDP is spent to compensate the burden of poor occupational safety and health practices in the workplace. The fishing industry is largely considered to be one of the most dangerous industries in the world (Lucas et al. 2014). Despite the dangerous nature of work in

the fishing industry, safety regulations, especially in developing countries, often do not meet basic standards. The criteria of the CFS pertaining to occupational safety ensure a high level of safety regulations and protocols to improve occupational safety for workers, both on land and at sea. In addition to the direct costs associated with workers' compensation, workplace accidents can have implications for productivity as well. These potential benefits require knowledge about the effects workplace accidents have on overall revenues, which is a connection that is, thus far, not clear.

The numbers from the ILO report (2006) referred to data collected in 2005. The global GDP in 2005 was estimated to be US\$51.92 trillion. Based on the ILO's estimates (2006), this would be about US\$2.08 trillion spent on workers' compensation as a result of poor occupational safety in 2005 (Table 5).

E. Forgone taxes from underpaid wages

There are specific criteria that ensure that workers under the scope of the certificate are guaranteed at least the national minimum wage (in addition to a criterion in the 'Fundamental Human Rights' criteria concerning withholding wages) or equivalent for piecework. As discussed previously, Faure (2015) largely described that social costs associated with forced labour as those which manifest as lower state revenues as a result of forgone personal income tax from underpayment of wages. In order to estimate the costs associated with coercion of forced labour, the ILO (2009) provided an estimate quantifying the underpayment of wages to victims of forced labour. This was quantified as "the difference between a victim's actual income in forced labour and what he or she would have earned doing the same job in a free labour relationship" (ILO 2009). The report estimates that, based on 2007 data, there is US\$19.56 billion in underpaid wages (ILO 2009). This is a global estimate, and in 2007, the global average personal income tax was 32.19% (KPMG n.d.), meaning there was approximately US\$6.309 billion in forgone state revenues as a result of unpaid wages (Table 5).

5. Resource Management

The CFS criteria address many issues of resource management concerning data collection, biodiversity and endangered species, waste management, and governance. While there are sources that discuss social costs associated with mismanagement of fisheries resources,

these are often difficult to quantify. A report by the Environment Justice Foundation (EJF) (2015) found that in Thailand, the fishing industry earns about half what it would if it were managed sustainably. However, this is difficult to quantify on a global scale. Additionally, it is difficult to make the connection between the value derived from sustainable management of fisheries and the impact the CFS criteria have directly contributed.

F. Losses due to IUU fishing

The CFS criteria ensure that a certified fishery is operating according to regional, national, and international laws, aimed at combatting IUU fishing. Research conducted by Agnew et al. (2009) sought to estimate the global losses associated with IUU fishing. They estimated that US\$10-23.5 billion each year are lost due to IUU fishing (Table 5).

Table 6. Quantification of indicators of the external benefits accruing to society through the production of seafood in compliance with the CFS.

Category	Indicator	Source	Value	US\$2016
3	A	ILO (2014)	2012 US\$8.9 billion total. Average global corporate income tax rate (2012): 27.04% Total forgone corporate income tax: 2012 US\$2.406 billion	2.52 billion
	B	Anti-trafficking Review (Ucnikova 2014)	2014 US\$124 million	125.71 million
	C	ILO (Vinogradova et al. 2009)	2007 US\$1,271 per victim	1,471.24 per victim
4	D	ILO (2006)	4% global GDP in 2005. In 2005, global GDP was about \$US51.92 trillion. 4% = 2005 US\$2.08 trillion	2.56 trillion
	E	ILO (Vinogradova et al. 2009)	2007 US\$19.56 billion. Average global personal income tax rate (2007): 32.19% Total forgone personal income tax: 2007 US\$6.309 billion	7.3 billion
5	F	Agnew et al. (2009)	2009 US\$10-23.5 billion	11.19-26.29 billion

3.1.2 Step 2: Scaling selected indicators

Indicators were scaled to Fair Trade variables by finding the 2016 US\$ per unit affected (Table 7). This is quantified as 2016 US\$/registered fishermen (F_{FT}) in order to represent marginal values per additional producer certified. The resultant values represent the case where there is 100% non-compliant CFS criteria in a fishery prior to certification, with $\alpha = 1$.

Table 7. Values represented according to associated Fair Trade variable

Indicator	Source	# affected (global)	US\$2016	Indicator value (2016 US\$) $\alpha = 1$
A	ILO (2014)	3.53 million	2.52 billion	713.88
B	Anti-trafficking Report (2014)	29.8 million (based on Global Slavery Index for 2014)	125.71 million	4.22
C	ILO (Vinogradova et al. 2009)	1,075,141	1,471.24 per victim	1,471.24
D	ILO (2006)	Deaths from accidents and diseases: 2.2 million Non-fatal injuries: 270 million Falling ill from work-related causes: 160 million Total: 432.2 million	2.56 trillion	5,923.18
E	ILO (Vinogradova et al. 2009)	8.171 million	7.3 billion	893.40
F	Agnew et al. (2009)	11-26 million metric tons = 11-26 billion kilograms	11.19-26.29 billion	1.07-1.01/kg Average = 1.04 (V_{FT}/F_{FT})

3.1.3 Step 3: Creating the equation

The indicator values were then input into the following equation:

$$MB_E = \alpha \sum \text{indicator values}$$

$$MB_E = \alpha [A + B + C + D + E + F]$$

$$MB_E = \alpha [713.88 + 4.22 + 1471.24 + 5923.18 + 893.40 + (1.04 V_{FT}/F_{FT})]$$

$$MB_E = \alpha [9005.92 + (1.04 V_{FT}/F_{FT})]$$

Therefore, total external benefit can be expressed by the following equation:

$$B_E = \alpha [9005.92 + (1.04 V_{FT}/F_{FT})] \times F_{FT}$$

3.2 Applying the framework

3.2.1 Step 4: Generating outputs with Fair Trade data

The data acquired from Fair Trade USA for two certified fisheries were input into the equation to quantify the estimated external benefits of Fair Trade certification that accrue to society.

Based on the data provided by Fair Trade, in 2016, if the proportion of non-compliant criteria was 100% ($\alpha = 1.0$), the Fair Trade Certified Indonesian yellowfin tuna fishery would have generated about US\$7 million in external benefits to the global society with an MB_E of about US\$9,640 for each additional certified fisherman. With a non-compliant proportion of 50% ($\alpha = 0.5$) or 10% ($\alpha = 0.1$), the B_E would be about US\$3.5 million ($MB_E = \text{US\$}4,820$) or US\$700,000 ($MB_E = \text{US\$}965$), respectively (Table 7).

In 2016, if the proportion of non-compliant criteria was 100% ($\alpha = 1.0$), 50% ($\alpha = 0.5$), or 10% ($\alpha = 0.1$), the Fair Trade Certified Mexican shrimp fishery would have generated about US\$5.3 million ($MB_E = \text{US\$}9,230$), US\$2.7 million ($MB_E = \text{US\$}4,615$), or US\$530,000 ($MB_E = \text{US\$}923$), respectively (Table 8).

Table 8. MB_E of the Fair Trade Certified Yellowfin tuna fishery in Indonesia (2016).

α	MB_E (2016 US\$/ F_{FT})	B_E (2016 US\$)	MB_P (2016 US\$/ F_{FT})	% increase
1.0	9,638.54	7,045,773.91	1,575.47	611%
0.5	4,819.27	3,522,886.37		306%
0.1	963.85	704,577.29		61%

Table 9. MB_E of the Fair Trade Certified shrimp fishery in Mexico (2016).

α	MB _E (2016 US\$/F _{FT})	B _E (2016 US\$)	MB _P (2016 US\$/F _{FT})	% increase
1.0	9,229.64	5,325,502.28	1,599.63	577%
0.5	4,614.82	2,662,751.14		289%
0.1	922.96	532,550.23		58%

3.2.2 Return on investment (ROI)

The ROI for the Yellowfin tuna fishery in Indonesia with 100% non-compliant criteria ($\alpha = 1.0$) is between about 350 to 880, with 50% non-compliant criteria ($\alpha = 0.5$) it is between 175 and 440, and with 10% non-compliant criteria ($\alpha = 0.1$) it is between 34 and 87 (see Table 10). The ROI for the shrimp fishery in Mexico is 265-665, 132-332, and 25-65 with α equal to 1.0, 0.5, and 0.1, respectively (see Table 11).

Table 10. ROI of the Yellowfin tuna fishery in Indonesia.

α	MB _E (US\$/F _{FT})	MC _{FT} range (US\$/F _{FT})	ROI range
1.0	9,638.54	10.95 – 27.36	351.29 – 879.18
0.5	4,819.27		175.14 – 439.11
0.1	963.85		34.23 – 87.02

Table 11. ROI of the shrimp fishery in Mexico.

α	MB _E (US\$/F _{FT})	MC _{FT} range (US\$/F _{FT})	ROI range
1.0	9,229.64	13.86 – 34.66	265.29 – 664.92
0.5	4,614.82		132.15 – 331.96
0.1	922.96		25.63 – 65.59

CHAPTER 4: DISCUSSION

When operating in a profit-centric space, it is often difficult to include social aspects into the business model. This can be especially difficult when the social aspects can be as extreme as human trafficking and forced labour. This research sought to present a representative economic value of the external benefits that accrue to society from compliance with the Fair Trade CFS in order to translate these benefits into a value that can be compared in the marketplace. This not only identified quantifiable indicators, but can also be used to identify the third party beneficiaries. This research presents a starting point towards having these benefits considered when approaching both business strategy and policy.

4.1 Positive production externality

In order for there to be the possibility of a positive production externality, the MB_E would simply have to be greater than zero. The results demonstrated that in general, with a 10% non-compliant rate ($\alpha = 0.1$), there is an external benefit of approximately 2016 US\$900 per additional fishermen registered in the Fair Trade program, not including the benefits that accrue from eliminating IUU fishing. For both applied fisheries, the MB_E increased the total economic value generated per fisherman by over 50% (with $\alpha = 0.1$). Therefore, there is a possibility that compliance with the CFS criteria generates a positive production externality in the provision of certified seafood.

The results demonstrate that a third party beneficiary investing in the Fair Trade program would serve to receive returns on investment. At the low end, with a non-compliant rate of 10% ($\alpha = 0.1$), the ROI ranged from 34-87 for the yellowfin tuna in Indonesia and 25-65 for the shrimp in Mexico. On average, including both fisheries, this means an ROI of about 50. This means for a third party to invest \$1 towards certifying an additional fisherman, theoretically they will receive \$50 in return as a result of the external benefits incurred on society.

As previously stated, this model is limited exclusively to the actions of those that fall under the scope of the certificate who are responsible for complying with the CFS criteria. Therefore, it is impossible to determine whether or not there really is an existent market failure. The model largely disregards important factors in the marketplace that are necessary to make any

definitive statements about the results. Marginal values, both private and external, are values that increase infinitely in this model. The only limiting factor for this model is the number of people on Earth in the fishing industry eligible to be part of a Fair Trade program. With approximately 93.1 million people working in primary production of seafood or on fishing vessels (ILO 2013), that would put the extraction of benefit with 10% non-compliant criteria at approximately US\$8.4 billion annually according to this model. Values would likely be different in consideration of market forces, namely consumer demand.

Benefits will only accrue to society so long as there is demand for the product to be certified. Given the present structure of the supply chain (as seen in Figure 1), there would need to be information for the global society's willingness to pay for certified seafood at the price relative to the actual price that includes both the FTP and the 2% service fee to Fair Trade. If the price for certified seafood could reflect the demand for seafood in general (i.e. the end price to consumers would be proportionately competitive in the marketplace to all other seafood), the model could be generated in consideration of the general public's willingness to pay for their seafood products. In either case, consumers' demand for the majority of goods and services demonstrates diminishing returns. This means that as a consumer receives more of a good or service, the value it has to them as a contribution to their well-being (i.e. utility) decreases. A consumer is willing to pay more for one piece of fish as it improves their well-being, but they are willing to pay incrementally less for a second piece of fish because even if it improves their well-being, it does not improve it as much as if they were to go from zero to one piece of fish. This is often expressed as an exponential relationship with marginal values experiencing diminishing returns per additional unit. Therefore, in reality, the MB_E and MB_P would follow a similar trend, likened to that presented in the theoretical model in Figure 2. With all this in mind, looking at the fishery scale, the total external benefits that are realized in compliance with the CFS criteria demonstrate only a fraction of what the program can do for fisheries and their communities (through multiplying effects), but offers a number that can be recognized on the books with the hope that they can be considered in order to improve the social and environmental responsibility of seafood supply chains.

4.2 Correcting the market failure

Perhaps the most valuable thing to consider when examining means by which to approach the correction of the market failure is who the main third party beneficiaries are. As previously mentioned, the limiting factors in the provision of Fair Trade Certified products may be both the lack of knowledge (and therefore demand) of consumers and consumers' budget constraints. By enabling the price of certified product to be comparable to what the average person can afford, both of these limitations can be surmounted. This is based on the assumption that each consumer is operating in their best self-interest and will therefore choose a product for which they can exact the maximum benefit while paying the minimum price. While there is widespread recognition of the Fair Trade seal, not all consumers know exactly what it means and therefore demand specifically for certified products is lower than the demand for seafood in general. By allowing the price to be comparable to the market price for seafood in general, the need for demand specific to certified product can be eliminated and demand would be uniform across all seafood products (whether it has a seal or not). The second limitation can be surmounted if the price premium can be subsidized because in that case, those that would like to choose a certified product can do so without exceeding their budget constraints, making it more equitable. Additionally, it will increase the likelihood that a consumer ignorant to what the seal means will inadvertently choose a certified product strictly because it does not exceed their budget constraint. Identifying who serves to benefit the most from the actions of the fishery can help target third parties that would be the most willing to help subsidize the Fair Trade program.

Figure 1 demonstrates the Fair Trade supply chain, and as previously mentioned, the end price to consumers is a reflection of the FTP and the 2% service fee to Fair Trade. Eliminating, or subsidizing these costs could have two major benefits. The first being that the end price to the consumer could reflect market values of the same products in general. Secondly, by subsidizing these costs, it could incentivize supply chains to get certified leading to more widespread provision, and therefore, greater impact. While it is the consumers that largely limit the provision of certified goods, it is the different value chain members that are strategizing business operations according to consumer demand that may need an incentive to get certified. Without a means to guarantee that product differentiation and niche marketing are enough to entice consumers to pay a premium price for these products, risk averse businesses may be deterred from seeking certification.

In consideration of the good that Fair Trade certification can do, not only for the fishery and adjacent community, but also for society as a whole (as demonstrated), public and private sector solutions to incentivize Fair Trade certification can help improve the potential impact the Fair Trade program can have globally. In order to determine where these opportunities may exist, it is imperative to identify the key beneficiaries of each indicator.

The primary beneficiary for many of the indicators is the fishery's country of origin. Forgone taxes from illegal profits and underpayment of wages, along with losses associated with IUU fishing all represent losses, and therefore potential benefits, for the domestic government. Costs of coercion represent potential benefits for the citizens of a country, whether it's the country they migrate from or their respective country. Finally, the costs associated with occupational safety can represent costs in both the public and private sector of the country of origin. In addition to the potential benefits for the country of origin, the aid money spent by OECD countries to eradicate human trafficking and forced labour singles out countries that import a lot of these products that could potentially benefit. There may be public sector solutions that could help subsidize costs of the Fair Trade program to increase the provision of certified goods and therefore increase the scope of the impact.

4.3.1 Fishery's country of origin

Support in the public sector targeted at the industry itself may help incentive more widespread certification of fisheries across the globe and therefore, promote more widespread impact. As the primary beneficiaries of the social benefits incurred on society through compliance with the CFS criteria, the domestic country of an operation may benefit from policies that encourage industry to seek Fair Trade certification. The potential multiplying effect of legislation that encourages certification could have multifaceted benefits for a country. The CFS criteria deal with multiple buckets of issues, each of which is largely addressed through their own respective legislative measures. There is legislation against human trafficking and forced labour, legislation about workplace safety, legislation about wages, and all are set in place to focus on their respective goals and are exclusively driven by the objectives of the public sector with little integration. Having legislation directed at incentivizing something like Fair Trade certification of private entities could accomplish a number of goals through a single action. Subsidizing costs of industries that attain Fair Trade certification in a respective country could

help address a number of policy issues: reduce child labour, forced labour, human trafficking, improve occupational safety, etc. Traditionally, legislative action to deal with labour issues is a reactionary response, prosecuting illegal activity after it has already happened (Andrees and Belser 2009). Encouraging Fair Trade certification would take a more proactive approach, aligning industry incentives with political goals. Independent of the potential economic benefits revealed through this research, this kind of policy could cover a lot of political ground. If more operations within the country are certified by Fair Trade, not just fisheries, it could help accomplish legislative goals while realizing private benefits and stimulating the economy. That is not even considering the multiplying effects of the FTP and how investments could help support policy objectives as well. This would then all be supplemented by the external benefits that could potentially be realized by the state, namely those that could increase state revenues.

Hypothetically speaking, an upfront investment to support Fair Trade certification of operations could end up paying itself back. Suppose a country invests \$1 million to subsidize the certification of a number of operations. Indicators A and E (see Table 5), as the only two that show direct benefits associated with state revenues, represent about US\$1,600 per individual to fall under the scope of a certificate. Assuming the certificate could cover operations to address a 10% non-compliant rate, that would mean 6,250 people would need to be certified by Fair Trade in order to cover the costs. With a maximum audit cost of \$20,000 per operation, that investment would be able to support 50 operations (i.e. 125 individuals per operation).

While the previous scenario encourages operations to get certified, it does not consider other costs within the value chain. Policy to help entice buyers to source products from certified operations is a key step towards more widespread provision of Fair Trade Certified goods. It is the FTP and the 2% service fee to Fair Trade that manifest as the greatest costs to different players in the supply chain. Governments could help support some of the costs to buyers by supplementing the FTP of products. That would mean that if the premium represents an increase in price for the buyers, the government could agree to front some of that value so the price to end consumers need not reflect the entire brunt of the FTP.

In addition to contributing to a number of political goals in one fell swoop, the Fair Trade program could inadvertently help with the limited capacity of labour inspection that is largely facilitated by the public sector. Andrees and Belser (2009) discuss the limitations of inspection services in many countries and how associated weak labour market regulations are central to the

public sector's capacity to deal with labour issues in both the formal and informal sector. While encouraging Fair Trade as a complete replacement for domestic labour inspection is not a good solution, it could act as a support system when it comes to upholding standards of labour where these systems may fall short. As Fair Trade would also be offering benefits to an operation in the form of a FTP, there is positive reinforcement for industry which could encourage compliance, rather than taking a punitive approach.

4.3.2 Importing policy

The products sourced under Fair Trade standards are largely destined for North American markets, not the country they are produced in. As the US is the largest consuming country in the world, the potential impact of certifying operations producing goods destined for the US is immense. It is worth mentioning that they are not the largest consumer of seafood specifically, however legislation targeted at certification in general would include seafood and all other certified products. While the primary third party beneficiaries of the Fair Trade programs are the domestic country of primary production, the success of the supply chain is largely dependent on the US market. In many cases the importer may support the costs of the FTP and US companies primarily benefit from the use of the seal, and therefore, front the 2% service fee to Fair Trade. While it is the domestic countries that benefit most from certifying supply chains, the pressures of the US market facilitate human rights abuses in the developing world (Preuss and Brown 2012). The incessant need to reduce production costs to maintain competitive standing in the US market incentivizes operations to reduce costs anywhere they can. This does not necessarily mean that corporations that buy from these operations allow and/or are aware of the issues, however there currently lacks an incentive to ensure corporate social responsibility. Providing this incentive through targeted policy and legislation in the importing country could help alleviate these pressures and facilitate better labour and production practices throughout supply chains.

The concept of enacting legislation to deal with human rights abuses in foreign countries from which products are sourced is not unfamiliar in the US. Section 1502 on Conflict Minerals in the Dodd-Frank Wall Street Reform Act of 2010 is a great example of legislation harnessing business incentives to minimize human rights abuses in foreign countries at the expense of manufacturing for products to be sold in the US (Whitney 2015). The idea was that by enforcing

transparency of US companies sourcing from these regions it would pose a reputational risk to these companies and diminish the capacity of African black markets that were facilitated by their finances. This reform forced manufacturers to disclose whether or not their sourcing of materials was funding armed forces in Central Africa, namely the Republic of Congo (Taylor 2015). It is believed that this piece of legislation has been successful in reducing the scope of the minerals black market (Whitney 2015). In addition to this piece of legislation, the Clinton administration signed Executive order 13126 in 1999 which ensures federal agencies do not procure goods from forced labour or indentured child labour (Clinton 1999). While these are valuable contributions towards incentivizing good behaviour, the scope is limited relative to the scope of the issue. It also lacks positive reinforcement for good social and environmental responsibility and therefore may not be as effective at incentivizing good practices and accountability as they largely take an indirect approach. There are also federal policies that exist specific to seafood to address IUU fishing specifically. The US Seafood Import Monitoring Program, overseen by NOAA Fisheries, requires reporting and recordkeeping of certain seafood products imported to the US targeted at ensuring that products of IUU fishing do not enter US commerce. This includes recording information about the vessel (license, gear type, etc.), the fishing event (when, where, what, how much, etc.), and the importing record. It applies to thirteen species (which includes shrimp and five species of tuna) imported to the US and is set to be implemented in January 2018 (NOAA 2017). While this does help towards addressing IUU fishing and can help environmental sustainability of fisheries resources, it does not directly address human rights abuse. Recording a vessel name does not require a statement that all fishermen are being paid minimum wage or that safety standards are being met. Therefore, legislation targeted directly at human rights abuse in production supply chains would beneficially support this policy.

As previously mentioned, the CFS, along with all the other Fair Trade Standards, addresses a number of issues all at once. Therefore, targeting legislation towards incentivizing something like Fair Trade can help accomplish a number of goals. This can be in the form of both federal and state-level legislation. At the federal level, incentives for importers sourcing from certified operations could help encourage more widespread provision of certified goods, and therefore, impact. This could be tax reform to shift how taxes are spread out based on the source of the products they are importing. For example, increasing taxes on products that cannot confirm the reliability of their sources with respects to social and environmental responsibility

and reducing taxes for those that can. This need not be exclusive to Fair Trade certification, however some mechanism to ensure credibility would be ideal. For example, the ISEAL Alliance is a third party to certification schemes that seeks to improve the impacts, define credibility, increase the uptake, and improve the effectiveness of sustainability standards (ISEAL Alliance 2016). Therefore, having the federal government partnering with an organization like this facilitating restructuring of taxation on imported product to provide benefits to companies who are certified under standards verified by the ISEAL Alliance could help encourage companies to adopt these standards.

In addition to federal-level legislation, state-level legislation may be more easily facilitated, but on a smaller scale. For example, the state of California enacted the Transparency in Supply Chains Act which operates similarly to the federal-level Dodd-Frank Wall Street Reform. This legislation requires any company operating in the state of California with worldwide gross receipts greater than US\$100 million to disclose “efforts to eradicate slavery and human trafficking from [their] direct supply chain for tangible goods offered for sale” and must be readily available on their website (Harris 2015). This Act does not directly mandate that companies take an active role in mitigating these issues, but relies on public scrutiny to nudge companies in the right direction. This approach, once again, takes a punitive approach, threatening the reputation of companies, rather than positively reinforcing efforts towards social and environmental responsibility and ultimately, does not guarantee systemic change. Many certified products are sold at a higher price to compensate costs associated with achieving certification with little to no guarantee that these products will sell better than the alternative through product differentiation and niche marketing. For a risk averse business, procuring goods from reliable sources can, therefore, manifest as a risk that they may seek to avoid. Restructuring sales tax to enforce tax exemptions for businesses and retailers who sell products certified according to a standard recognized by the ISEAL Alliance could encourage increased procurement and sale of these products that counters the potential associated risks and would also allow businesses to quantitatively forecast what it would mean for their business.

Both state-level and federal-level legislative support for certified products that encourage social and environmental responsibility can offer two main benefits towards increasing impact. Firstly, it can help incentive companies to source their products from supply chains that are certified in order to realize these benefits. Secondly, it can encourage companies to take actions

to get the supply chains that they already source from certified in order to realize these benefits. This would mean that not only would there be more widespread provision of certified goods from existing sources, but there would also be more operations that are meeting these standards of production.

4.3 Data assumptions and reliability

In order to quantify variables, existing data was used. This was a key factor when selecting indicators, as quantifying other aspects of the CFS were out of scope for this research. There are a number of methods that could be used to quantify just about any of the criteria of the CFS, but would need to be approached from the bottom up. For example, contingent valuation of any of the criteria could provide a more specific quantification of the issues the criteria seek to address. This could be a valuable exercise for Fair Trade in order to provide a quantifiable indicator of the impact their standards have toward their mission. However, for the scope of this research, conducting authentic Fair Trade specific quantification of CFS criteria was not feasible. The existing data that was used to quantify indicators was derived from a number of sources, which will be discussed for their reliability.

Fundamental Human Rights

A. Forgone taxes from illegal labour

This indicator was hypothesized drawing on Faure (2015) as a contributing factor resulting in lower state revenues as a result of undeclared taxes on profits generated from human trafficking and forced labour. The ILO (2014) conducted research in an attempt to quantify the profits that are generated by illegal labour which ultimately evades the tax system. The data pertained to a survey conducted in 2012 which estimated a total of 20.9 million victims of human trafficking and forced labour globally. These estimates were broken down into three categories: forced labour exploitation, forced sexual exploitation, and state imposed forced labour. The fishing industry falls under forced labour exploitation, which was further broken down by sector, with the agricultural sector including fishing. Considering the entire agricultural sector includes roughly half of the total working population on Earth, in addition to the sector's high risk of

forced labour, the ILO (2014) designated the 3.5 million victims of forced labour exploitation in this sector as “conservatively estimated”.

It is also worth noting that there is a lack of specificity of estimates in the fishing industry. Literature surrounding labour abuses in the fishing industry is largely unable to provide a reliable estimate of the scope of the issue. Estimates specific to the fishing industry could provide more reliable values in this model. However, in using an indicator that encapsulates the entire agricultural sector, it allows for the model to be applied to other Fair Trade Standards.

B. OECD aid money spent on human trafficking

This research conducted by Ucnikova for the Anti-Trafficking Report (2014) provides an estimate of aid money spent on human trafficking and modern slavery for 12 OECD countries that were selected as major contributors. The author was able to verify directly with governments of eight of the countries considered and therefore the credibility of the information is quite reliable. The author did mention that in many cases money spent towards eradication of modern slavery could not always be disaggregated from other similar expenses which might result in an overestimation. The scope of this research only considered OECD support and therefore largely omitted any government spending in countries of origin of production that help to eradicate modern slavery. This estimate is quite valuable, however, to exemplify potential benefits for countries that are not the origin of production and can demonstrate what many of these large consumer countries serve to gain from improving corporate social responsibility in the supply chains of products they import.

This research referred directly to the Global Slavery Index (GSI) which estimated 29.8 million victims of modern slavery. Therefore, it was this estimate that was used to scale this indicator. Gallagher (2017) assessed the methodology of the GSI in estimating modern slavery. The author highlighted how surveying was used for 25 of the 167 countries considered, and out of 29,000 survey respondents, only 470 affirmed that they themselves or their immediate family fell victim to modern slavery. For the United Kingdom (UK) and the Netherlands, existing data calculated using a methodology referred to as ‘multiple systems estimation’ was included into the GSI estimate. This method uses a number of different available data and overlays these data to provide an estimate. The remaining countries were then divided into groups based on their estimated vulnerability and adjustments were made if experts did not feel as though estimates

were reflecting reality. Therefore, it is unclear as to the reliability of this estimate and it cannot be determined whether or not this is an over or underestimate. It is imperative to note that the GSI began in 2013 and is attempting to quantify a very difficult variable and as such, this methodology serves a preliminary image of the problem and methods will likely improve over time.

C. Costs of trafficking coercion

The data which estimates the costs of trafficking coercion also came from the ILO (Vinogradova et al. 2009). This estimate was based on data from known cases which suggest recruitment costs can vary from 2007 US\$150 in poor regions to 2007 US\$5,000 in some cases. An average of known recruitment costs was used in order to generate the estimate of US\$1.4 billion each year. This also took into consideration that on average, recruitment costs tend to be about 3 months in wages. As it is clear this value was derived based on a number of assumptions, the authors (Vinogradova et al. 2009) describe this value as a “guess-estimate”, which leaves room for much interpretation. Therefore, there is no indication as to whether or not this value may be an over or underestimate.

The estimates of victims of forced labour were those from a 2005 report by the ILO as one of the first attempts to quantify the issue. It is accepted that the estimates obtained from this report represent the minimum scope of the issue (Belser et al. 2005). There is a separate report by the ILO (2009) that discusses some of the challenges of providing reliable estimates of human trafficking and forced labour. For the most part, the ILO estimates come from surveys conducted and information about known incidents. This report highlights the difficulty providing broad-level estimates of the scope of the issue in addition to potential issues with the reliability of the data. Random surveying could largely omit incidence of human trafficking and forced labour and it is unsure whether or not those surveyed are even willing, or able to, admit their experiences (ILO 2009). This report also distinguishes two specific challenges with surveying methods, including the difficulty to ensure representative sample sizes at the national level and how to make sure the information coming from surveyed individuals is accurate and/or useful (ILO 2009). As previously stated, there is a lack of specificity of the scope of the issue in the fishing industry which has been designated at high risk of labour exploitation (ILO 2012).

D. Workers' compensation due to poor occupational safety

This estimate was provided by the ILO (2006) as well. The report largely quotes the provided estimate as an underestimate. The ILO supplements its data with other sources that show similar results, with other estimates suggesting 5% of all diseases and injury are attributed to work related incidents. While the report does provide estimates of how common these incidents are (affecting a total of 432.2 million people annually), it does not provide any sort of indicator for how many of these incidents truly could have been avoided with better workplace safety. Due to the nature of the fishing industry holding a reputation as one of the most dangerous industries, it is possible that the per capita costs associated with fishing might be higher than for the regular work force. For example, it is estimated that there are 24,000 work related deaths in the fishing industry each year (Lucas et al. 2014), which represents 1% of the ILO's (2006) estimated 2.2 million work-related deaths annually. Therefore, more specific data concerning the degree to which these accidents could be avoided could help improve the reliability of this indicator in the model. Once again, there is value in the general expression of this economic burden as it could be applied to any operation that is certified by Fair Trade.

E. Forgone taxes from underpaid wages

The information about the underpayment of wages came from the same ILO publication (Vinogradova et al. 2009) that measured the costs of coercion of workers in forced labour. In addition to the money spent by victims to their traffickers, the report measures additional costs in the form of underpaid wages to victims of forced labour (Vinogradova et al. 2009). This was calculated by comparing the difference between actual wages paid and what an individual would have earned in a free labour situation. The report looks at the share of profits allocated to labour for different sectors. As a general rule this report took the difference between the labour share and actual payments to forced labourers who are assumed to be receiving 80% of the regional minimum wage, which they describe as a "conservative assumption" (Vinogradova et al. 2009). An additional number of assumptions were made relating this information to the estimated number of victims. This report drew on one of the first estimates the ILO provided for human

trafficking and forced labour in 2005 (Belser et al. 2005). These were divided into regions rather than individual countries, therefore the authors approximated regional averages.

Resource Management

F. Losses due to IUU fishing

The value used to quantify this indicator was an average taken from a range provided by Agnew et al. (2009). The authors used a number of different data sources and integrated them to come up with the lower and upper estimates of the losses due to IUU fishing. The data included information sourced from surveillance, trade agreements, stock assessments, and expert opinion. The data used had varying degrees of reliability for which the authors attempted to account for. While there is uncertainty about the values generated in this study, in providing a range it can be inferred that the lower limit estimation represents a minimum loss due to IUU fishing annually. It is important to note that discards and unregulated artisanal catches were not included in this evaluation which could mean the results represent an underestimation. This study did however mirror findings in other research which ranged from US\$9-25 billion annually (Agnew et al. 2009). While the data are good representative values, this research is nearly ten years old now and more recent information that also includes data regarding discards could improve the reliability of this indicator value.

CHAPTER 5: CONCLUSION & NEXT STEPS

This research attempted to quantify the external benefits of production in compliance with the CFS criteria in order to demonstrate the value of Fair Trade independent of direct monetary benefits to the fishing industry (i.e., private benefit). It is evident that if the many Fair Trade Standards were the norm of seafood supply chains, society would be better off.

The factors limiting the provision of Fair Trade Certified products ultimately fall on the consumer. Consumers drive the market through demand and demand is closely linked with consumers' budget constraints which ultimately drives their purchasing behaviour. While Fair Trade appeals to niche markets and can realize private benefits through product differentiation, there will always be a barrier to encouraging businesses to participate if they are largely operating based on consumer demand and willingness to pay. Finding ways to reduce the costs associated with the Fair Trade program for those involved is the best way to encourage more widespread provision of certified products as evidence suggests that incentives for businesses to participate are lacking.

Based on the results of this research, as the local governments in the country where production occurs are the main third party beneficiaries of the Fair Trade program, obtaining government support to help subsidize costs of the program would be the ideal place to start. This research provides evidence that there would be a return on investment in the Fair Trade program which could then help the government achieve policy objectives. A combination of fronting audit costs and subsidizing the FTP to buyers would not only encourage operations to get certified, but would also help reduce the cost to end consumers.

While US companies could not be definitively identified as a key third party beneficiary of the Fair Trade program, it is suggested that policy designed to simply restructure the taxation of goods based on where they are sourced could help promote a systemic shift towards more normalized corporate social and environmental responsibility. This would mean increasing taxes for companies' whose products fail to meet recognized standards and decreasing taxes for companies that do meet recognized standards. This could target the import of products through federal legislation, with similar objectives to that of Section 1502 in the Dodd-Frank Wall Street Reform Act 2010, or the sale of certified products through state-level legislation.

It is clear that putting sole responsibility on businesses to agree to pay the costs associated with the Fair Trade program can hinder more widespread provision of certified goods. While this research is aimed at quantifying the external benefits specific to the CFS, it would be useful to be able to quantify the benefits businesses serve to gain by agreeing to the Fair Trade requirements. This would mean quantitatively measuring what businesses can gain through product differentiation and niche marketing in monetary units. This would allow businesses to include this into the business strategy to streamline decision making about the Fair Trade program.

In addition to quantifying the benefits of product differentiation and niche marketing for businesses, quantifying the multiplying effects of FTP investments could be beneficial for Fair Trade. While Fair Trade has currently identified means by which to assess the impact of the Fair Trade program, it is largely qualitative and providing quantitative assessment could demonstrate the impact Fair Trade contributes towards global development. While demonstrating how Fair Trade can improve the well-being of producers and their communities is important, assessing the economic benefits and the multiplying effects of the Fair Trade program could be valuable.

While this research serves to provide quantitative evidence of the external benefits of Fair Trade certification, the ethical incentives should not be ignored. In an ideal world, there would not be need for certification if social and environmental responsibility was the norm in production supply chains. The profit-centric nature of the market has facilitated human rights abuses and environmental degradation in the developing world under pressure to produce at the lowest possible cost. Production of goods in the developing world can help stimulate the local economy and encourage development but must be met with accountability and enforcement to ensure that consumerism does not come at the expense of human rights and the quality of the environment. The CFS helps to align business incentives and corporate social and environmental responsibility and through more widespread certification of production supply chains, can help counter market incentives that lead to human rights abuses and environmental degradation around the world.

LITERATURE CITED

- Acharya, K. K. (2015). Community governance and peacebuilding in Nepal. *Rural Society*, 24(1), 65-84.
- Agnew, D. J., Pearce, J., Pramod, G., Peatman, T., Watson, R., Beddington, J. R., & Pitcher, T. J. (2009). Estimating the worldwide extent of illegal fishing. *Plos one*, 4(2), e4570.
- Allison, E. H., Ratner, B. D., Åsgård, B., Willmann, R., Pomeroy, R., and Kurien, J. (2012). Rights-based fisheries governance: from fishing rights to human rights. *Fish and Fisheries*. 13(1): 14-29.
- Andrees, B., & Belser, P. (2009). *Forced Labour: Coercion and exploitation in the private economy*. Geneva: International Labour Office.
- Bacchetta, M., Ernst, E., & Bustamante, J. P. (2009). *Globalization and informal jobs in developing countries*. Geneva: International Labour Organization.
- Bailey, M., Bush, S., Oosterveer, P., and Larastiti, L. (2016). Fisheries, Fair Trade, and finding middle ground. *Fisheries Research*. 182: 59-68.
- Belser, P., M. de Cock, and F. Mehran. (2005). An ILO Minimum Estimate of Forced Labour in the World, International Labour Office, Geneva.
- Belser, P. (2005). Forced labour and human trafficking: Estimating the profits. Special Action Programme to Combat Forced Labour. United Nations ILO. Retrieved from: <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1016&context=forcedlabor>
- Cameron, J., Hunter, P. R., Jagals, P., & Pond, K. (Eds.). (2011). *Valuing water, valuing livelihoods*. Iwa Publishing.
- Clinton, President William Jefferson. (1999). Executive Order 13126 on the “Prohibition of Acquisition of Products Produced by Forced or Indentured Child Labor.” [Online]. Available: <http://www.dol.gov/ilab/about/laws/#eo13126>
- Costello, C., Ovando, D., Clavelle, T., Strauss, C. K., Hilborn, R., Melnychuk, M. C., Branch, T. A., Gaines, S. D., Szuwalski, C. S., Cabral, R. B., Rader, D. N., and Leland, A. (2016). Global fishery prospects under contrasting management regimes. *PNAS*. 113(18): 5125-5129.

- De Groot, R., Brander, L., van der Ploeg, S., Costanza, R., Bernard, F., Braat, L., Christie, M., Crossman, N., Ghermandi, A., Hein, L., Hussain, S., Kumar, P., McVittie, A., Portela, R., Rodriguez, L. C., ten Brink, P., and van Beukering, P. (2012). Global estimates of the value of ecosystems and their services in monetary units. *Ecosystem Services*. 1: 50-61.
- Dyck, A. J., & Sumaila, U. R. (2010). Economic impact of ocean fish populations in the global fishery. *Journal of Bioeconomics*, 12(3), 227-243.
- Environmental Justice Foundation. (2015). Pirates and Slaves: How overfishing in Thailand fuels human trafficking and the plundering of our oceans. Retrieved from: https://ejfoundation.org/resources/downloads/EJF_Pirates_and_Slaves_2015_0.pdf
- Faure, J. (2015). Forced labour: Does it make economic sense? UNU/SIPA Junior Research Fellowship Paper Series.
- Fair Trade USA. (2014). Capture Fisheries Standard Version 1.0, December. 21. http://fairtradeusa.org/sites/default/files/wysiwyg/filemanager/fish/FTUSA_CFS_Standard_1.0_EN_121914_FINAL.pdf
- Gallagher, A. T. (2017). What's Wrong with the Global Slavery Index? *Anti-Trafficking Review*, (8).
- Grafton, R. Q., Arnason, R., Bjørndal, T., Campbell, D., Campbell, H. F., Clark, C. W., Connor, R., Dupont, D. P., Hannesson, R., Hilborn, R., Kirkley, J. E., Kompas, T., Lane, D. E., Munro, G. R., Pascoe, S., Squires, D., Stainshamn, S. I., Turriss, B. R., and Weninger, Q. (2006). Incentive-based approaches to sustainable fisheries. *Can. J. Fish. Aquat. Sci.* 63: 699-710.
- Harris, K. D. (2015). The California Transparency in Supply Chains Act: A Resource Guide. *California Department of Justice*. Retrieved from: <https://oag.ca.gov/sites/all/files/agweb/pdfs/sb657/resource-guide.pdf>
- Hauzer, M., Dearden, P., and Murray, G. (2013). The effectiveness of community-based governance of small-scale fisheries, Ngazidja island, Comoros. *Marine Policy*. 38: 346-354.
- Hodal, K., C. Kelly and F. Lawrence. (2014). Revealed: Asian slave labour producing prawns for supermarkets in US, UK. *The Guardian*. Retrieved at: <https://www.theguardian.com/global-development/2014/jun/10/supermarket-prawns-thailand-produced-slave-labour>

- ILO. (2006). Occupational Safety and Health: Synergies between security and productivity. Geneva, Switzerland: ILO Publishers. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/meetingdocument/wcms_110380.pdf
- ILO. (2009). The cost of coercion, Global Report under the follow-up of the ILO Declaration on Fundamental Principles and Rights at work. Geneva, Switzerland: ILO Publications. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_106268.pdf
- ILO. (2013). Caught at sea: Forced labour and trafficking in fisheries. ILO Special Action Programme to Combat Forced Labour; International Labour Office; Sectoral Activities Dept. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_214472.pdf
- ILO. (2014). *Profits and Poverty: The Economics of Forced Labour*. Geneva 22, Switzerland: ILO Publishers. Retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_243391.pdf
- ISEAL Alliance. (2016). About us. Retrieved 2017, from ISEAL Alliance: <https://www.isealliance.org/about-us>
- Jacquet J., J. Hocevar, S. Lai, P. Majluf, N. Pelletier, T. Pitcher, E. Sala, R. Sumaila, D. Pauly. (2010). *Oryx*. 44(1): 45-56.
- Kearns, M. (2016). Mexican shrimp fishery nabs Fair Trade certification. *Seafood Source*. Retrieved from: <https://www.seafoodsource.com/news/environment-sustainability/mexican-shrimp-fishery-nabs-new-fair-trade-certification>
- KPMG. (n.d.). Tax Rates Online. Retrieved 2017, from KPMG: <https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online.html>
- Lucas, D. L., Kincl, L. D., Bovbjerg, V. E., & Lincoln, J. M. (2014). Application of a translational research model to assess the progress of occupational safety research in the international commercial fishing industry. *Safety Science*, 64, 71-81.
- Mai, N., Bogason, S. G., Sigurjon, A., Àrnason, S. V., and Matthíasson, G. Benefits of traceability in fish supply chains – case studies. *Bradford*. 112(9): 975-1002.

- Marine Stewardship Council. (2017). Global Impacts Report 2017. Retrieved from:
<https://www.msc.org/documents/environmental-benefits/global-impacts/msc-global-impacts-report-2017>
- Naku, D. W. C., & Afrane, S. (2016). Local Community Development and the Participatory Planning Approach: A Review of Theory and Practice.
- Newenham-Kahindi, A. (2015). Managing sustainable development through people: Implications for multinational enterprises in developing countries. *Personnel Review*, 44(3), 388-407.
- NOAA. (2017). Compliance Guide for the: U.S. Seafood Import Monitoring Program. *NOAA Fisheries*. Retrieved from:
<http://www.iuufishing.noaa.gov/Portals/33/SIMPCComplianceGuide2017.pdf>
- Nunn, P. D., Aalbersberg, W., Lata, S., & Gwilliam, M. (2014). Beyond the core: community governance for climate-change adaptation in peripheral parts of Pacific Island Countries. *Regional Environmental Change*, 14(1), 221-235.
- Overbeek, A. (2014). Examining the efficacy of Fair Trade eco-labeling on environmental sustainability and human rights in developing countries. *The Journal of Sustainable Development*. 13(1): 165-179.
- Ponte, S. (2012). The Marine Stewardship Council (MSC) and the making of a market for 'sustainable fish'. *Journal of Agrarian Change*. 12(2,3): 300-315.
- Preuss, L., & Brown, D. (2012). Business policies on human rights: An analysis of their content and prevalence among FTSE 100 firms. *Journal of business ethics*, 109(3), 289-299.
- Rani, U., & Belser, P. (2012). The effectiveness of minimum wages in developing countries: The case of India. *International Journal of Labour Research*, 4(1), 45.
- Raphael, A. J. (1981, March 26). Responsive community planning in developing countries: The Kota Bharu, Buluh Kubu case study (T). Retrieved from:
<https://open.library.ubc.ca/cIRcle/collections/ubctheses/831/items/1.0095301>
- Rogers D. S., Duraiappah, A. K., Antons, D. C., Munoz, P., Bai, X., Fragkias, M., and Gutscher, H. (2012). A vision for human well-being: transition to social sustainability. *Current Opinion on Environmental Sustainability*. 4(1): 61-73.
- Ruscetta, B. (2016). Anova Food's Fair Trade Certified™ Indonesian handline tuna fishery program continues to grow. *Cison PRWeb*. Retrieved from:
<http://www.prweb.com/releases/2016/03/prweb13248371.htm>

- Sampson G. S., J. N. Sanchirico, C. A Roheim, S. R. Bush, J. E. Taylor, E. H. Allison, J. L. Anderson, Ban, N. C., Fujita, R., Jupiter, S., and Wilson, J. R. (2015). Secure sustainable seafood form developing countries. *Science*. 348(6234): 504-506.
- Taylor, C. R. (2015). Using securities disclosures to advance human rights: A consideration of Dodd-Frank Section 1502 and the Securities and Exchange Commission Conflict Minerals Rule. *Journal of Human Rights*, 14(2), 201-217.
- Ucnikova, M. (2014). OECD and Modern Slavery: How much aid money is spent to tackle the issue? *Anti-Trafficking Review*, (3).
- United States Department of State. (2016). Trafficking in Persons Report 2016 – Country Narrative T-Z. Retrieved from:
<https://www.state.gov/documents/organization/258882.pdf>
- Vinogradova, A., M. De Cock, and P. Belser. (2009). Measuring the costs of coercion to workers of forced labour. United Nations International Labour Organization. Retrieved from:
http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_106409.pdf
- Whitney, T. (2015). Conflict minerals, black markets, and transparency: The legislative background of Dodd-Frank Section 1502 and its historical lessons. *Journal of Human Rights*, 14(2), 183-200.