

Sustainable Fisheries Business in Latin America: Linking in to Global Value Chain

Anand N. Asthana

Centrum Católica Graduate Business School, Pontificia Universidad Católica Del Perú

Abstract: During the last two decades cross-sector partnerships between businesses, nongovernmental organisations and scientists have accelerated in attempts to address complex social-ecological challenges. These collaborations have been particularly successful in global value chains, such as those of fisheries. A recent development in this field is adding on of social concerns to environmental challenges. This conjunction has widened the scope of sustainability beyond a buzzword. Sustainable fishing in Latin America offers a vehicle for systemically channelling the growing private sector interest in promoting certified sustainable products and has the potential to build unified sustainable approaches and the economies of scale necessary to bring about meaningful change at the continental level.

Key words: Fish • Fisheries • Sustainability • Voluntary standards • Certification • Standards markets

INTRODUCTION

It is a good time to be an 'overfisher' in Latin America. The global fish-price index (FPI) of the UN's Food and Agricultural Organisation (FAO) hit a record high in 2014. Over a period of 12 years, average yearly prices have gone up by two thirds. Changing consumer diets, particularly in developing countries, explain much of the sustained upward movement. Moreover, as Figure 1 shows, FPI shows less volatility than other food price indices including oils, cereals and dairy.

Commercial fisheries are a major source of food in Latin America, in some countries adding significantly to the national economy. The cold waters of Peru and Chile are rich in fish, especially anchovies. The cool Humboldt current, the most productive marine ecosystem in the world, ensures that vast shoals of anchoveta, a member of the Engraulidae anchovy family feed on upswelling algae and are themselves eaten by scores of other species of fish. The Peruvian anchoveta has yielded greater catches than any other single wild fish species in the world. Since the mid-20th century, Perú has developed its fishing industry into the world's second biggest after China. Chile, Mexico, Argentina and Northeastern Brazil have sizable fishing fleets as well. Major catch fishing countries in Latin America are described in Table 1.

Fish Average Price
100 = 2002-04

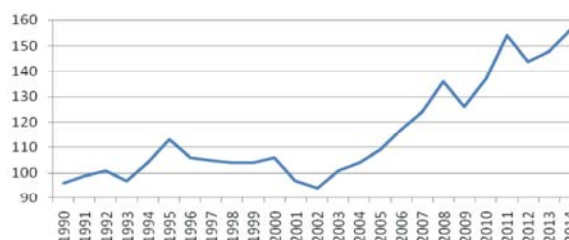


Fig. 1: FAO Fish Price Index [100 = 2002-04]

Excessive fishing over a long time has, however, affected the industry, which has seen a decline since the late 20th century due to reduced fish stocks. The proportion of assessed marine fish stocks fished within biologically unsustainable levels increased from 10 percent in 1974 to 28.8 percent in 2011 [1]. Stocks of the biggest predatory species, such as tuna and swordfish, may have fallen by 90% since the 1950s. Many studies, published in recent years suggest likely extinction for many species [2]. Fluctuations in effort towards combating overfishing combined with changing weather patterns, has resulted in wild fluctuations in yearly catch in some fisheries. In case of Peruvian anchoveta, one of the biggest fisheries in the world, the fluctuations are striking as shown in Figure 2.

Table 1: Major Fisheries producers in Latin America

Country	World rank	Annual production (tonnes)	Main fisheries
Perú	2	8.01	Peruvian anchovy, Chub Mackerel
Chile	6	4.35	Chub Mackerel, Peruvian anchovy
Mexico	17	1.32	Yellowfish tuna, Shrimp, Sardine
Argentina	19	1.04	Hake, Patagonian grenadier
Brazil	25	0.70	Hake
Venezuela	36	0.46	Yellowfish tuna, Sardine
Ecuador	37	0.45	Chub mackerel

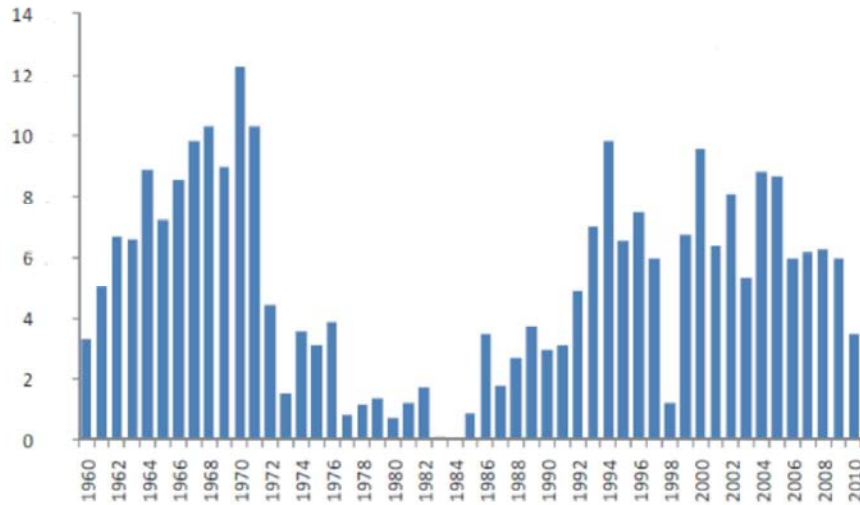


Fig. 2: Anchovy catches in Perú in million metric tons (Source: FAO)



Fig. 3: Impact of climate change and on fisheries (Source: FAO and IPCC)

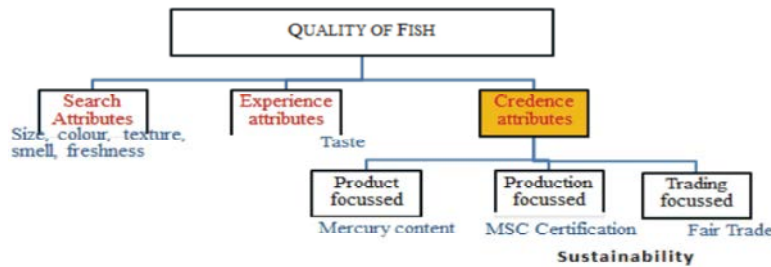


Fig. 4: Quality attributes of fish

In case of marine life direct destruction is perhaps less problematic than slow poisoning and selective extraction. The United States detonated 66 nuclear bombs in the water of reef ecosystems of Enewetak and Bikini destroying much of the habitat. Just four decades later, the reef fish were found to have fully recovered. On the other hand, ocean acidification and anoxia may retard or even arrest the intrinsic capacity of marine fauna to bounce back [3]. Simply put, for marine life chemical warfare is worse than nuclear warfare. The areas of particular concern in Latin America are marked in Figure 3. There is widespread concern that some of the systemic resilience of marine communities is being eroded on account of change in environment as also overfishing [4, 5]. Many over-exploited marine ecosystems have lost their natural populations of large predatory finfish and have become dominated by crustaceans and other invertebrates. Some of these ecosystems generate more economic value than earlier; but in many cases, the loss of large finfish has also triggered ecosystem shifts. Moreover, scientists have found that the stocks left remaining are prone to collapse from disease, invasion, eutrophication and climate change. Transition from multispecies fisheries to simplified invertebrate fisheries is causing a global decline in biodiversity and could also be bad economically [6]. However, defaunation in the oceans has not been as serious as on land [7]. While overfishing has badly damaged marine wildlife, these populations have a lot of resilience and the impact of overfishing (unlike that of ocean acidification and anoxia) is not irreversible if it is controlled now [8].

Capture fisheries have several features, the interaction of which make these not only intellectually challenging but analytically unique. Fish are renewable but exhaustible commodity and are mobile. Ecology, markets, law and political economy have shaped rights to extract a particular fish species in specified areas in various contingent ways [9]. From the consumers' point of view, fish not being a homogeneous product,

assessment of quality is very important. Quality can be judged through search attributes, which the consumer assesses before buying the product and experience attributes which are known after the purchase. In the recent years, credence attributes have become more important. The consumer is conscious about the food safety and is also concerned about whether fish has been brought to market in an ethical manner. These attributes are shown in Figure 4. Market surveys show that consumers are increasingly concerned about sustainability of fish. This article seeks to critically analyse the emerging trends towards sustainable catch fisheries in Latin America and its relationship with environment, the likely emergence of social sustainability as another complicating factor and future challenges that will shape the sustainable fisheries business in Latin America.

Quest for Environmental Sustainability: For a long time ocean navigation and fisheries resources were open to all. This arrangement largely held until the United States extended national jurisdiction to the continental shelf in 1945 and Chile, Ecuador and Perú declared similar ocean sovereignty [10]. In 1982, the United Nations Convention on the Law of the Sea enshrined State sovereignty over the 200 nautical mile exclusive economic zones in international law. Currently, the individual transferable quota (ITQ) is a common approach seeking to establish individual rights to specific quantities of fisheries resources. In general, fisheries access rights are difficult to monitor and enforce and are politically contested. Working with incomplete data on fishing vessel catches, fisheries scientists estimate the populations of uncaught fish and try to predict future fish stocks and calculate a sustainable yield, [11, 12]. Very few countries in Latin America undergo rigorous scientific assessment for the generation of management policies, even fewer have a participatory and transparent processes to convert scientific recommendations into policy and none provides for robust mechanisms to ensure the compliance with

regulations [13]. Recent arguments for a shift from government to governance have suggested a stronger role for civil society in managing the environment, particularly of voluntary and nongovernmental organisations (NGOs) and for new policy instruments to replace traditional command and control approaches [14]. The distinct functions of Voluntary Sustainability Standard (VSS) initiatives can be described [15] as:

- A regulatory function which entails setting the regulations, supplemented by effective monitoring and enforcement by associated bodies.
- An adequacy function which is carried out by NGO's and social movements which promote the adoption of the standards, often in conjunction with the labelling bodies.
- A trade facilitation function which encompasses the actual practice of trade between actors across the length of the value chains of products from producers at the bottom of the chain through exporters, processors, importers, wholesalers and distributors to the retailers at the top of the chain.

VSS initiatives in fisheries came into prominence much later than those in agricultural commodities and have followed a different trajectory. In case of agricultural commodities, the concern for the poor producers preceded concern for environment. Fairtrade coffee was already popular before Rainforest Alliance and Bird-friendly labels entered the consumer's conscience. In case of fisheries, ocean conservationists (like Greenpeace) and terrestrial environmentalists (like WWF) started paying attention to sustainability of fisheries and were supported by big business (like Unilever) which at the time wanted to remain in fisheries business for a long time with no fear of depletion of stocks. Concern for the fishers came later and NGO's promoting welfare of the fishers are small players as compared to those promoting conservation.

In the field of agricultural commodities, there is intense competition among labels. Fairtrade, Organic, Rainforest Alliance (RA), UTZ and shade grown/ bird friendly as also corporate programmes like C.A.F.E. (from Starbucks), AAA Nespro (from Nestlé) and 4C (the common code for the coffee community) have gained prominence in the field of certification for coffee. It is difficult to determine which certification is most profitable for producers and many producers incur substantial costs in obtaining multiple certifications. In Colombia, some estates have a certification from FNC (Federación

Nacional de Cafeteros de Colombia) and another four certifications -UTZ, RA, Organic and Fairtrade [16]. As a part of capitalist economy, the owners of labels see nothing unethical about running down the competition and indulging in mutual allegations. In case of fisheries, Marine Stewardship Council (MSC) has a virtual monopoly. The only other significant label in the field of capture fisheries is Friend of the Seas (FOS) which came into existence 8 years back. When Fair Trade USA enters the field, it will probably add on to MSC standards instead of supplanting them with its own.

MSC has managed to address supply concerns by successfully convincing suppliers to become certified under its own scheme rather than that of competitors like FOS and others. As many as 252 fisheries have been certified by this time and 100 are under assessment. MSC has addressed the demand concerns by convincing buyers - branded food processors, retailers, restaurants and consumers - that its label is better for the environment than competing labels. Worldwide number of seafood products bearing the MSC label is increasing. It is consistent with the ISEAL Code of Good Practice for Setting Social and Environmental Standards and the FAO Guidelines for fisheries certification. Keeping itself abreast of latest developments in science and business, it is implementing Fisheries Standards 2.0 with effect from April 2015 and will release a Chain of Custody programme in September 2015. During the last four years or so, a market for 'sustainable fish' has been put on a firm footing by MSC.

To a limited extent, MSC has also addressed the civic concern by portraying itself as promoting strict and serious forms of fishery and ecosystem management [17]. MSC's initial approach in managing the environmental concern relied mainly on having WWF as a co-founder. Soon, more aggressive environmental groups started criticising MSC's market-friendly approach and claimed that MSC certified fisheries were not being managed sustainably. Studies on this subject give conflicting reports regarding sustainability but generally agree that a price premium exists for the MSC label. With a view to expand its reach, MSC has had to compromise on its overall environmental concerns. Getting moral legitimacy from other NGOs, policy makers and the consumers simultaneously is a tight ropewalk. As an MSC official explained [18]:

If we're talking to a retailer, then yes, of course, WWF lends us credibility and gives a bit of weight to what we're doing. But if we're talking to an Icelandic fishery, we would try and distance ourselves as much as

possible from the WWF connection because of their anti-whaling campaigns and boycotts and things they promote. You know, we want to make sure that it is known that we do have that separation from WWF.

Another unaddressed civic concern is the neglect of Global South, including Latin America. MSC claimed that their scheme was voluntary and market neutral and they cannot impose it on reluctant fisheries. Civil society groups considered this attitude unfair. Till recently, the focus has been only on fisheries from developed countries. As of now there are only 8 certified fisheries in Latin America and 5 in the assessment process. Recently, however, MSC has appointed a Manager, Latin America based in Chile to engage more intensely with the region. FOS has done only slightly better in this regard. Out of 93 fisheries approved, only 10 are from Latin America. Though Anchoveta has the highest catch in the world, only 4 fisheries (3 from Perú and 1 from Chile) are approved by FOS. Recognising that developing country fisheries often face specific challenges in moving towards sustainable certification including lack of awareness, lack of government support, cost of certification or lack of data, recently MSC has started a Developing World Programme to address these issues. To tackle data deficiency MSC has operationalised an alternative set of assessment methods for fisheries that do not have quantitative data, called the Risk-Based Framework (RBF). The RBF allows Conformity Assessment Bodies to use semi-quantitative and qualitative information when evaluating fishery performance against the MSC Standard in case of data-limited fisheries.

Other civic concerns relate to socio-economic and labour issues as MSC explicitly avoids including these issues in its standards. The socio-economic niche in the sustainable fish market has remained unoccupied in the sea though FOS includes some labour and social provisions. After incorporating environmental concerns, fishing is viewed as a technical act of catching fish and fishing communities are viewed as subject for sustainable extraction of resources. This biologically and economically reductionist treatment of fishers appears to be the dominant theme of business and social science research in fisheries [19]. A small critical literature does exist in Biological Science [20, 21], Human Geography [22-24 Bradshaw], Economics [25, 26], Sociology [27] and Ethnology [28] that goes beyond the dominate framing of instrumental rationality of fisheries.

Quest for Fairness: The most popular of the VSS systems in the field of agriculture are those that emphasise fairness rather than environment. The modern version of fair trade

in the international context was born in Latin America in late 1980's when Nicaraguan and Colombian coffee was imported at above market price in U.S. and Europe as a way to make a political statement with a household item. Within a few years, various standards developed in different countries and in 1997 Fairtrade Labelling Organisations International was created which in 2004 was divided into two independent organisations: FLO International for setting standards and providing business support to producers and FLO-CERT for inspection and certification of producer organisations. Internal debate as to whom their labels should be available continued to rage. While Fairtrade International believes that certification should generally be restricted to small producers, its biggest adherent Transfair USA felt that large producers and plantations should also be certified. In 2010, Transfair USA withdrew its membership of Fairtrade International and renamed itself Fair Trade USA. Soon thereafter, Fairtrade International established Fairtrade America, as its new member organisation in the United States to compete against Fair Trade USA and persuaded many major U.S. companies to revert to the original Fairtrade mark. Fair Trade USA uses SCS Global Services to conduct compliance assessments. In case of fish, the market is likely to be dominated by Fair Trade USA because Fairtrade International is not entering the field. Fair Trade USA has adapted the agricultural certification model to create the Fair Trade Capture Fisheries Standard which is likely to be launched towards the end of 2015.

Labour Rights and Gender Issues: Competitive market pressures have made work in fisheries sector arduous and dangerous. Regulating workers' safety, especially on vessels is challenging [29]. Union organisation and strikes are rare in Latin American fishing boats except in industrial fishing boats where some processing is done on board in Argentina. On the land, wages and job security are particularly low among fish processing women workers. Perishability of fish and seasonal nature of catch creates cycles where some of the time these women are under pressure to process high volumes and some of the time there are no employment opportunities [30].

In 2007, ILO Work in Fishing Convention was adopted which addresses issues related to minimum requirements for work on board fishing vessels and living and working conditions, as well as the social security, of fishers. The convention was adopted with two-thirds of the votes in favour. While no one from Latin America voted against the motion, important fishing nation, Perú, abstained, along with Mexico, Colombia, Venezuela and

Uruguay. The convention has not come in to force as very few countries of the world have ratified it. From Latin America, only Argentina has ratified the convention and the ILO's instrument is unlikely to come in to force in the coming few years. This gives an opening to voluntary sustainability movement. Compliance with the convention could be the necessary (but not sufficient) condition for certification.

Poverty Alleviation and Risk Mitigation: The word 'sustainability' made its debut in the 1980's and has often been described as a buzzword created to avoid a choice between economic growth and a healthy environment [31]. Over the years, there has been a realisation that environmental protection is not antithetical to economic development or poverty alleviation. On the contrary, helping poor people may reduce some of the environmental damage that comes from desperation. The objects of the Fairtrade Foundation as set out in the Memorandum and Articles of Association [32] are relieving poverty, suffering and distress and promoting research and education concerning the causes and effects of poverty, particularly in relation to the conduct of trade and to the conditions of employment of poor people. The beneficiaries of Fairtrade activity are not persons or households pertaining to the lowest part in a country's income distribution configuration because Fairtrade's *raison d'être* is production for export and not subsistence production. This is not to suggest that Fairtrade is an elitist organisation. A large number of small farmers across Latin America are members of the cooperatives affiliated with Fairtrade and a large number of workers are employed in plantations affiliated with Fairtrade. With a view to compete against other standards in agriculture promoted by environmental NGO's, Fairtrade has included environmental standards in its requirements for certification, though primary concern remains fair price to the poor.

Questions have been raised as to whether Fairtrade benefits anyone at all. By providing a minimum price, Fairtrade will encourage fishers to increase production when market demands that production should decrease to maintain price. This market distortion could harm the poor fishers who are not certified by Fairtrade as also trap the Fairtrade fishers. It has also been argued that guarantee of a minimum price is an inefficient way to get money to poor producers [33]. These arguments fail to take into account the incapability of fishers to effectively respond to market signals by diversifying their activities. Geography is not the only factor constraining production options. Most fishers in Latin America are in a lock-in

because of inability to get alternative employment. There are many factors that can explain the emergence of specialization traps at the micro level including lack of information, financial support and local markets. Furthermore, there are cultural aspects involved in the specialization trap. In many Latin American countries, fishing is not only a productive activity, but also a way of life with a very old tradition [34].

Trading relationships in fisheries: In the field of marine export from Latin America, there is increasing concern about the low share of the final product price reaching the producers. As a part of its campaign against "the injustices of conventional trade", Fairtrade claims to seek greater equity in international trade by challenging market competitiveness based solely on price. However, only a small proportion of the premium paid by the consumers can go to the producers because of mark-ups to cover for the Fairtrade certification fees that wholesalers and traders pay to the Fairtrade organisations and other administrative costs. Fairtrade cannot control margins in the rest of the supply chain; it would be illegal for Fairtrade to intervene in price fixing discussions between retailers and importers under the competition laws of EU and the US Antitrust laws which are converging [35]. Being a part of the free trade regime, Fairtrade cannot change the trade regime that exists today. Fairtrade needs to be viewed as a successful promotion of a VSS that emphasises fairness and touches the conscience of the affluent consumer.

Terms of Endearment: Business and NGOs: Business and NGOs were seen by many to be locked in a perpetual war of values and ideologies two decades back; but the war has since moved on. This has been evident in cases where paralysed intergovernmental processes have caused havoc in management of global environment. WWF was one of the first to realise that addressing only the supply side of the problems – badgering national governments and intergovernmental bodies -is not enough and management of demand side is called for in collaboration with businesses and consumers. In collaboration with DIY retailers like B&Y, WWF created Forest Stewardship Council in 1993. Encouraged by its success, WWF encouraged its Endangered Sea Campaign staff to learn from experience of Forest Stewardship Council and investigate the potential for its replication in the sea. About the same time, Unilever, at that time the largest buyer of frozen fish in the world, produced its statement on sustainability and declared that its long term business success depends on carrying out business in an environmentally sustainable manner. It committed itself to

purchase all its fish from sustainable sources by 2005. This was an unrealistic but probably a sincere commitment. Between 1996 and 2005, sourcing of sustainable fish by Unilever rose from 4% to 44% and in 2006, Unilever sold its frozen fish business. In any case, at the time, partnership between WWF and Unilever seemed like a marriage made in heaven and MSC was born. In 1999 MSC became independent of its two funding partners.

Fish is a highly differentiated product. In some big fish markets like Tsukiji in Tokyo or La Nueva Viga in Mexico City up to 300 varieties of fish are sold each day; and within each variety there is differentiation on the basis of size and freshness. Wholesalers, processors, retailers, restaurateurs and even discerning consumers jostle to examine the fish themselves or get agents to do so. Many such markets operate as much for traditional reasons as for commercial ones and are tourist attractions as well. Modern trade logistics in general has shifted away from marketplaces and towards retail outlets, most seafood worldwide is now sold to consumers through these venues like supermarkets, like any other foodstuff. Consumer surveys indicate that many consumers would not mind paying a little more for fish or a fish product if they are assured that it is environmentally sustainable. Fairtrade is betting that consumers will get more value for money if their purchase is also socially sustainable. Retailers may even sell sustainable products without raising the price if they are assured of higher sales and good public image. In 2007, Sainsbury's in UK switched to Fairtrade bananas without raising prices benefiting farmers in Magdalena and Urabá region of Colombia. Quite often, instead of going whole hog like Sainsbury's Fairtrade bananas, businesses hedge their bets on NGOs. Walmart's requirements for wild-caught seafood was that the source fishery must be certified sustainable to the MSC standard *or equivalent* or, if not certified, *actively working toward* certification. As if this was not flexible enough, last year, Walmart went one step further with a view to sell salmon from a source not certified sustainable to MSC standard. It modified its policy to include fisheries managing a program in accordance with the Principles of Credible Sustainability Programs developed by The Sustainability Consortium as also any fishery involved in a fisheries improvement programme.

Enter Fair Trade: In the U.S., Fair Trade USA is due to launch its label this year. Safeway has already entered into an agreement with Fair Trade USA and will be the

first retailer to launch sustainable seafood certified by it. Unless the compliance costs are high, the businesses stand to gain by using Fair Trade USA label for seafood through:

Differentiation: Beyond food safety, consumers, increasingly demand more information about the origins of food products and the conditions under which they were produced. By introducing socially responsible seafood, Fair Trade USA is the first to offer industry and consumers a holistic choice in sourcing responsible wild caught seafood by addressing social, economic and environmental criteria.

Improved Traceability and Supply Chain Stability: Today, traceability is a useful tool for companies to advance sustainability and prove claims and attributes of sustainable products. Companies undertake traceability programmes to improve their supply chain management in various ways. Some companies who have a strong understanding of their supply chain and know their main suppliers well have instituted their own traceability programmes and schemes for certain commodities, often when those commodities are a critical resource for their products [36]. Companies in industries with complex supply chains, like retail industry, rely on global multi-stakeholder initiatives operated by NGO's like MSC in order to trace commodities collaboratively. Fair Trade Certified fish will be traceable through the entire supply chain, helping to improve business practices. Fishermen that are registered with the Fair Trade program are likely to be more committed to selling directly to registered Fair Trade buyers – securing a more stable, mutually beneficial supply chain over the long term.

Leveraging the Fair Trade Label: Surveys show that the Fair Trade USA certification label is now recognized by over 55% of North Americans. Consumers who prefer Fair Trade Certified products throughout the grocery aisle including coffee, chocolate and produce, are likely to prefer Fair Trade label seafood as well.

Business collaboration with NGO's like MSC and Fair Trade could deliver competitive advantage to a business in many ways as shown in Figure 5.

It remains to be seen how Fair Trade USA while promoting its label as that of environmental as also social sustainability will impact other labels which are concerned with mainly environmental sustainability.

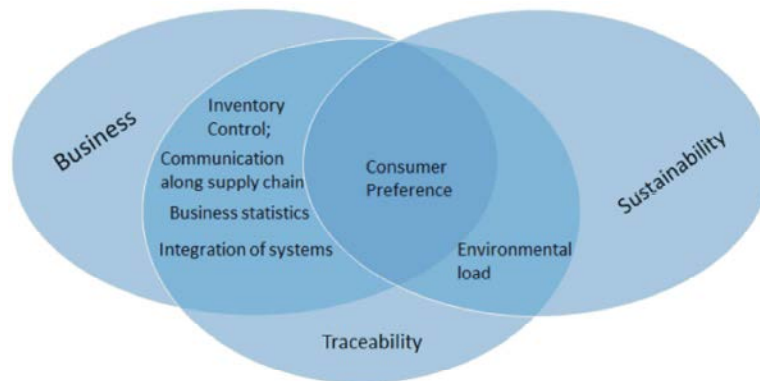


Fig. 5: Competitive advantage to fisheries business through alignment with sustainability NGOs

Fair Trade USA is an offshoot of Fairtrade International whose policy has been to establish a monopoly by debunking other VSS systems. Though Starbucks through compression of the supply chain pays higher prices to the farmers than what they can get from Fairtrade, the latter through its supporter Global Exchange organised demonstrations against Starbucks and pressurised it to purchase Fairtrade coffee. In the UK, Fairtrade has persuaded many parishes, schools, universities and towns to adopt Fairtrade label as the only acceptable standard. It also seems to have persuaded the Dutch government that Fairtrade label is the only ethical label. The Dutch government procurement policy announced in 2008 contains certain elements (like minimum price, liveable income/wage and pre-financing up to 60%) that give a virtual monopoly to Fairtrade products. This policy is being copied by the municipal governments in their tendering procedure that could make a market exceeding 100 million per year a Fairtrade monopoly. Roasters like Sara Lee (which uses UTZ certification) as also the Dutch Industry Association of Coffee and Tea protested in vain. On the other side of the Atlantic Fair Trade USA and UTZ have started to collaborate, beginning with Cocoa. For compliance assessment Fair Trade USA uses SCS Global Services who are also the first MSC accredited certifiers. This adds to the possibility that Fair Trade will build on MSC certification (which has no social component) rather than trashing it. This combination may save compliance costs for the producers resulting in lower costs for businesses and consumers.

CONCLUSION

Fisheries offer both a challenge and an opportunity for economic development, poverty reduction and

environmental stewardship in Latin America where despite growth inequalities persist. As fishing pressure has imposed significant problems on fisheries across Latin America, gaps in understanding of the issues is becoming apparent [37]. Problems associated with evaluation are common in most Latin American countries where fisheries institutes were created way back in the 1960s but have not achieved sufficient technical capacity due to limited financial support [38]. Inter-disciplinary research is virtually non-existent.

Increasingly, consumers are valuing fish produced in an environmentally responsible manner and soon enough they will insist on social sustainability as well. Currently, the focus is on consumers in rich countries. With increase in incomes and consciousness regarding sustainability, Latin America will also figure prominently as a market for sustainable fish as well. Multiple competing standards will increase the production costs of fishers. Even so, economic and welfare gains are possible from credible certifications that provide consumers with information about the production and trading practices. Partnerships between businesses and NGOs can make internationally constructed norms fit local institutions in Latin America for standard setting and certification while opening up spaces for co-creation through research and extension. This would require closer interaction between fish and marine scientists and business scholars.

REFERENCES

1. FAO, 2014. The State of World Fisheries and Aquaculture Opportunities and challenges. FAO.
2. Myers, R. and B. Worm, 2003. Rapid Worldwide Depletion of Predatory Fish Communities. *Nature*, 423: 280-283.

3. McCauley, D.J., M.L. Pinsky, S.R. Palumbi, J.A. Estes, F.H. Joyce and R.R. Warner, 2015. Marine defaunation: Animal loss in the global ocean. *Science*, 347(6219): 247.
4. Jackson, J.B.C., M.X. Kirby, W.H. Berger, K.A. Bjorndal, L.W. Botsford, B.J. Bourque, R.H. Bradbury, R. Cooke, J. Erlandson, J.A. Estes, T.P. Hughes, S. Kidwell, C.B. Lange, H.S. Lenihan, J.M. Pandolfi, C.H. Peterson, R.S. Steneck, M.J. Tegner and R.R. Warner, 2001. Historical Overfishing and the Recent Collapse of Coastal Ecosystems'. *Science*, 293(5530): 629-37.
5. Barange, M., G. Beaugrand, R. Harris, R.I. Perry, M. Scheffer and F. Werner, 2008. Regime shifts in marine ecosystems: detection, prediction and management. *Trends in Ecology & Evolution*, 23(7): 402-409.
6. Howarth, L.M., C.M. Roberts, R.H. Thurstan and B.D. Stewart, 2014. The unintended consequences of simplifying the sea: making the case for complexity. *Fish and Fisheries*, 15: 690-711.
7. Koch, P.L. and A.D. Barnosky, 2006. Late Quaternary Extinctions: State of the Debate. *Annual Review of Ecology, Evolution and Systematics*, 37: 215-250.
8. Worm, B., R. Hilborn, J.K. Baum, T.A. Branch, J.S. Collie, C. Costello, M.J. Fogarty, E.A. Fulton, J.A. Hutchings, S. Jennings, O.P. Jensen, H.K. Lotze, P.M. Mace, T.R. McClanahan, C. Minto, S.R. Palumbi, A.M. Parma, D. Ricard, A.A. Rosenberg, R. Watson and D. Zeller, 2009. Rebuilding Global Fisheries. *Science*, 325: 578-585.
9. Campling, L., E. Havice and P.M. Howard, 2012. The political economy and ecology of capture fisheries: market dynamics, resource access and relations of exploitation and resistance. *Journal of Agrarian Change*, 12(2-3): 177-203.
10. Loftas, T., 1981. FAO's EEZ Programme: Assisting a New Era in Fisheries. *Marine Policy*, 5(3): 229-39.
11. Botsford, L.W., J.C. Castilla and C.H. Peterson, 1997. The Management of Fisheries and Marine Ecosystems. *Science*, 277(5325): 509-15.
12. Beddington, J.R., D.J. Agnew and C.W. Clark, 2007. Current Problems in the Management of Marine Fisheries. *Science*, 316(5832): 1713-16.
13. Mora, C., R.A. Myers, M. Coll, S. Libralato, T.J. Pitcher, R.U. Sumaila, D. Zeller, R. Watson, K.J. Gaston and B. Worm, 2009. Management Effectiveness of the World's Marine Fisheries'. *PLoS Biology*, 7(6): 1-11.
14. Jordan, A., R.K. Wurzel and A.R. Zito, 2013. Still the century of 'new' environmental policy instruments? Exploring patterns of innovation and continuity. *Environmental Politics*, 22(1): 155-173.
15. Asthana, A.N., 2014. Voluntary Sustainability Standards in Latin American Agribusiness: Convergence and Differentiation. *American-Eurasian Journal of Agricultural & Environmental Sciences*, 14(11): 1262-1274.
16. FNC (Federación Nacional de Cafeteros de Colombia), 2012. Sustainability that Matters. FNC.
17. Ponte, S., 2012. The Marine Stewardship Council (MSC) and the Making of a Market for "Sustainable Fish". *Journal of Agrarian Change*, 12(2-3): 300-15.
18. Eden, S. and C. Bear, 2010. Third sector global environmental governance, space and science: Comparing fishery and forestry certification. *Journal of Environmental Policy & Planning*, 12(1): 83-106.
19. Jentoft, S., 2007. In the Power of Power: The Understated Aspect of Fisheries and Coastal Management. *Human Organisation*, 66(4): 426-437.
20. Davis, A., 1996. Barbed Wires and Bandwagons: A Comment on ITQ Fisheries Management. *Reviews in Fish Biology and Fisheries*, 6(1): 97-107.
21. Roberts, C.M., 2007. *The Unnatural History of the Sea*. Island Press.
22. Mansfield, B., 2004. Neoliberalism in the Oceans: "Rationalisation", Property Rights and the Commons Question. *Geoforum*, 35(3): 313-326
23. Pontecorvo, G., 1988. The Enclosure of the Marine Commons: Adjustment and Redistribution in World Fisheries. *Marine Policy*, 12(4): 361-372.
24. Bradshaw, M., 2004. The Market, Marx and Sustainability in a Fishery. *Antipode*, 36(1): 66-85.
25. Kurien, J., 1978. The entry of Big Business into Fishing – Its Impact on Fish Economy. *Economic and Political Weekly*, 13(36): 1557-1565.
26. Hanesson, R., 2004. *The Privatisation of the Oceans*. MIT Press.
27. Steinberg, P.E., 2001. *The Social Construction of Ocean*. Cambridge University Press.
28. Durrenberger, E.P. and G. Pálsson, 1987. Ownership at Sea: Fishing Territories and Access to Sea Resources. *American Ethnologist*, 14(3): 508-22.
29. Windle, M.J.S., B. Neis, S. Bornstein, M. Binkley and P. Navarro, 2008. Fishing Occupational health and Safety: Comparison of Regulatory Regimes and Safety Outcomes in six countries. *Marine Policy*, 32(4): 701-10.

30. Nadel-Klein, J. and D. Davis, 1988. Introduction: Women in the maritime era. In *To Work and To Weep: Women in Fishing Economies*. Eds., Nadel-Klein, J. and D. Davis. St. John's, pp: 1-17.
31. McKibben, B., 1996. Buzzless Buzzword. *New York Times*. April 10.
32. Fairtrade International, 2014. Annual Report and Financial Statements for the year ended 31 December 2013. Fairtrade Foundation.
33. Collier, Paul, 2007. *The Bottom Billion*. Oxford University Press.
34. Salas, S., R. Chuenpagdee, A. Charles and J. Seijo, 2011. Coastal fisheries of Latin America and the Caribbean region: Issues and trends. In *Coastal fisheries of Latin America and the Caribbean*. Eds., Salas, S., Chuenpagdee, R., Charles, A. and J.C. Seijo. FAO, pp: 1-12.
35. Bartalevich, D., 2013. EU Competition Policy since 1990: How Substantial is Convergence towards US Antitrust? *Journal of CENTRUM Cathedra: The Business and Economics Research Journal*, 6(2): 273-294.
36. UN Global Compact, 2014. *A Guide to Traceability*. UN.
37. Chuenpagdee, R., S. Salas, A. Charles and J.C. Seijo, 2011. Assessing and managing coastal fisheries of Latin America and the Caribbean: underlying patterns and trends. In *Coastal fisheries of Latin America and the Caribbean*. Eds., Salas, S., Chuenpagdee, R., Charles, A. and J.C. Seijo. FAO, pp: 385-401.
38. Agüero, M. and M. Claverí, 2007. Capacidad de pesca y manejo pesquero en América Latina: una síntesis de estudios de caso. In *Capacidad de pesca y manejo pesquero en América Latina y el Caribe*. Eds., by M. Agüero. FAO, pp: 61-72.