

NGO and Global Voluntary Standards in Sustainable Seafood: The Case of Aquaculture Stewardship Council (ASC) in Indonesia

The Journal of Environment & Development
2023, Vol. 0(0) 1–27
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DOI: 10.1177/10704965231158568
journals.sagepub.com/home/jed


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Abstract

This article examines the role of non-governmental organisation in supporting the implementation of global voluntary certification. This article investigates how World Wildlife Fund (WWF) helps implement the Aquaculture Stewardship Council (ASC) ecolabel standard in Indonesia. As the world's second-largest aquaculture fish-producing country, many Indonesian seafood products are rejected in the international market due to quality problems. This makes Indonesia an ideal country for implementing sustainable aquaculture practices. Using transition theory as a framework, we find that WWF has played a key role in three areas: (1) harmonisation of national regulations with ASC principles, (2) establishment of a campaign program to advocate for the public on sustainable seafood consumption behaviour, and (3) creating a special agency to assist to fishery industry players in obtaining ASC certificates. Our finding sheds lights on the importance of strong collaboration between business actors, states, and non-governmental organisations (NGOs) to implement global voluntary standards.

Keywords

Aquaculture, Indonesia, sustainable seafood, voluntary standards, sustainability

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Introduction

Globally, the aquaculture sector is one of the fastest growing commodity sectors due to its great potential in meeting the food needs of the world's eight billion people (Lester et al., 2018). Statistics from the UN Food and Agriculture Organization (FAO) show that global aquaculture production in 2018 reached 114.5 million tons, of which 52% was traded internationally as a commodity for human consumption (FAO, 2018). However, despite the significant benefits aquaculture offers to global seafood supply, the expansion of the aquaculture industry in the world has created environmental problems, specifically ecological and fishery ecosystem damage, due to inadequate rearing practices (Martinez-Porchas & Martinez-Cordova, 2012) and the use of chemicals toxic to animal and human health (Mavriganis et al., 2020).

Increasing global awareness on aquaculture's environmental impact has sparked advocacy for reductions in unsustainable production and consumption patterns in order to achieve a better quality of life for everyone. Consumers, especially from developed countries, are becoming more aware of social and environmental issues and are increasingly purchasing sustainable products (Potts et al., 2016). Consumer demand for sustainable seafood products is a strong factor to encourage producers to comply with codes of ethics for sustainable fisheries governance.

Various national and international regulatory frameworks have been developed, but regulatory frameworks established by national governments are often ineffective because of the prioritisation of economic growth over environmental protection. As a result, it is necessary to establish demand-side-oriented policies to promote sustainable fisheries products (Howes et al., 2017). In this case, non-state actors initiate eco-certification systems that emphasise a non-state market-driven mechanism in the form of voluntary sustainability standard. This mode of governance is seen as an alternative form of regulation that uses market power to control safety, traceability, transparency of production processes, and standardisation of products from international suppliers (Washington & Ababouch, 2011).

In Indonesia, global voluntary standard in the form of certification has been widely used in governing sustainability in sectors such as palm oil. However, many argue that such governance might privilege business interests in general and export-oriented palm oil companies and downstream industries while implementing such voluntary sustainability standards is relatively ineffective for smallholders (Brandi et al., 2015; Pichler, 2013). This article is interested in understanding to what extent such dynamics occur in the aquaculture sector.

The application of the Aquaculture Stewardship Council (ASC) certification mechanism by the World Wildlife Fund (WWF) illustrates such dynamics. Aquaculture Stewardship Council was founded in 2010 as a result of the Aquaculture Dialogues by WWF and the Sustainable Trade Initiative and aims to manage the world seafood market with global standards through certification and an ASC logo labelling program. These methods send a clear message to consumers about the environmental and social integrity of the products they buy (ASC, 2021a).

Before the implementation of ASC certification, Indonesia was already known as the world's second largest producer of aquaculture such as shrimp, lobster, and seaweed, with production increasing year upon year, from 2.16 million tons in 2005 to 15.46 million tons in 2020 (BPS, 2020). Despite this great potential, many Indonesian seafood products are rejected by international markets due to quality problems (Suadi & Kusano, 2019). This makes Indonesia a very appropriate country for ASC's mission to improve sustainable aquaculture practices.

However, it is important to note that several studies have found that ASC certification is difficult to apply to a typical fishing environment in a developing country such as Indonesia. This is due to a lack of knowledge about better fisheries practices among smallholder producers, limited infrastructure, and low levels of funding to obtain certification, which is often too expensive for many (Gutiérrez et al., 2012; Schouten et al., 2016). Thus, the only way for smallholders to gain certification is to work with third-party support, such as from non-governmental organisations (NGOs). Non-governmental organisations in many situations function as instruments for empowering social groups (Nikkhah & Redzuan, 2010; Palmer, 2014). But despite their important role in improving aquaculture governance, there has been limited study examining how NGOs can assist certification bodies such as ASC in promoting sustainable seafood practices.

This article examines WWF's efforts, with the funding from a private sector, to help implement the ASC ecolabel standard to create sustainable seafood practices in Indonesia. To explore this, we mobilise transition management theory as a conceptual framework. The analysis was carried out using a four-phase cycle process in understanding ASC implementation by WWF in Indonesia, looking at the strategic, tactical, operational, and reflexive phases.

This article examines WWF's progress and level of engagement in ASC implementation in Indonesia. In the strategic phase, the WWF initiated Aquaculture Dialogues by involving the Government of Indonesia as the host for setting standards for shrimp commodities. In the tactical phase, the NGO engaged the government in harmonising Indonesian fisheries governance regulations with ASC principles and built networks to introduce sustainable seafood through various campaign activities. During the operational phase, WWF created a special platform named Seafood Savers to provide assistance to fishing industry players in obtaining ASC certificates through the Aquaculture Improvement Program (AIP) and Better Management Practices (BMP). Finally, in the reflexive phase, WWF Indonesia carried out a series of monitoring, evaluation, and assessment activities against its strategic plan.

Our article contributes to the broader debate regarding the role of NGOs in enhancing global voluntary standards in aquaculture. Most studies on Aquaculture certification in Southeast Asia primarily focus on tension between different levels of governance that shape voluntary standards and certification that aim to promote sustainable aquaculture products (Anh et al., 2011; Samerwong et al., 2017) and the emergence of homegrown sustainable aquaculture governance (Sun & van der Ven, 2020). Indeed, one study has engaged in the discussion of how NGOs take a role in localising global norms in best practice of aquaculture by depoliticising social and

environmental issues around shrimp aquaculture (Kusumawati & Bush, 2015). Our study contributes to such debate by focussing on NGO efforts to enhance global sustainable standard at the strategic, tactical, and operational levels.

This article is organised as follows. The next section explains the theory of transition management and how it is applied within the WWF and ASC frameworks. In the third section, we analyse the role of WWF Indonesia in improving ASC implementation. Finally, we discuss the limitations of WWF's role as well as possibilities for future research.

Transition Theory and the Role of NGOs

There have already been presented a wide array of arguments on how to make the seafood industry more sustainable. The majority of the literature focuses on arguments about the importance of market-based initiatives (Barclay & Miller, 2018; Cooke et al., 2011, van Putten et al., 2020). Market-based initiatives are formed due to the emergence of a demand-shapes-supply mode of political consumerism that affect production practices and retailers' commitment to only supply sustainable seafood (Bush & Roheim, 2019). As a result, the idea of a sustainable seafood movement is realised through the development of voluntary sustainability standards as a tool to create a system of trust and verification between consumers and producers on a global scale.

Indeed, it is difficult to define what sustainability means given different actors have a different understanding of sustainability. As suggested by Cléménçon (2021), there are at least four distinct tensions in defining sustainability: (1) the tension in understanding sustainability between human versus eco-centric understanding of sustainability; (2) global versus national understanding of sustainability; (3) sectoral understanding of sustainability; (4) and temporal understanding of sustainability. In our article, sustainability is situated within understanding how the environmental impact of productivity of a particular sector can be minimalised by mitigating the ecological decline to an acceptable level (Cléménçon, 2021, p. 4).

As observed by Kong et al. (2002), NGOs essentially conduct three key elements when designing labelling schemes and launching independent certification bodies to demonstrate a high level of commitment to sustainability. First, creating green market demand for business entities regarding the importance of sustainability as a long-term business strategy. Second, enabling a sustainable supply by encouraging business entities to change methods of harvesting. Third, initiating green market demand at the household level by empowering consumers through a series of disparate and sustainable choices.

In the fisheries sector, the most successful certification program is the Marine Stewardship Council (MSC) label. This label is applied to sustainable capture fisheries industries. As of May 2017, 312 fishing industries in 30 countries have been certified as meeting MSC standards (Lajus et al., 2018). Studies on MSC certification have found that the MSC label positively affects consumer preferences worldwide (Alfnes et al., 2018). However, the MSC label is only used for capture fisheries. This has led to

aquaculture stakeholders creating their own sustainability labels, one of which is the ASC.

Although sustainability certification for farmed seafood is a relatively new practice, research has found that the ASC scheme results in significantly lower environmental impacts, including global warming, acidification, and ocean eutrophication, due to better agricultural efficiency and nitrogen emission management (Nhu et al., 2016). Although successful in reducing environmental impacts, certification schemes may have limitations to their wider application. Large-scale farmers are most likely to join and participate in the schemes because small and medium-scale farmers often lack written documentation and audit fees, and fail to meet technical requirements (Marschke & Wilkings, 2014).

Encouraging more smallholder producers to join aquaculture certification schemes requires government support and wider collaboration with other actors. This is because smallholders usually lack the information and the degree of organisation that certification demands (Brandi et al., 2015). Not to mention that certification is arguably seen as a hegemonic force underpinned by a neoliberal political economy favouring industrial interests that prefer weaker regulations (Bloomfield, 2012). Kusumawati and Bush (2015) see that NGOs such as WWF have an important role in translating global norms into local knowledge and practices. In their research, Kusumawati and Bush pointed out the important role of WWF's collaboration with Indonesia's Ministry of Marine Affairs and Fisheries to implement the BMPs program in shrimp farming in Indonesia. However, their research does not go into detail about how NGOs such as WWF can assist the Government of Indonesia and industry players in implementing ASC certification.

To identify WWF's involvement in the implementation of ASC certification in Indonesia, we use transition management theory as a conceptual framework to support the study. As argued by Halbe and Pahl-Wostl (2019), transition management theory is very suitable to be applied to a sustainable food system because it involves many stakeholders who work together in the value chain. Transition theory was developed based on a multi-level perspective (Loorbach, 2010). The transition emerges when the dominant structures in society (regimes) are challenged by external changes and endogenous innovation. Multi-level perspective assumes transition is the result of interactions between processes at three levels of analysis: (i) niche, which refers to new innovations, including policy instruments driven by individual ambition, entrepreneurial skills, or promising innovations; (ii) regime, which refers to the coordination between all institutions, such as regulations, organisations, and networks that operate within the societal system as 'system innovation' for specific purposes such as technology, policy, market, and consumption. Generally, strategies at this level have a medium term of around 5–15 years; and (iii) landscape, which refers to an arena where regimes are pressured for change, thereby creating opportunities for specific innovations. Loorbach further asserts the following four different types of governance activities to understand how actors confront complex societal issues and develop and implement strategies to create change:

1. Strategic. The initial phase of the transition process is the development of a shared vision of the desired future state of the system. This phase involves many different actors, such as government bodies, companies, NGOs, knowledge institutions, and local communities. They will formulate the vision, strategic objectives, long-term development plans, collective goals, and norm setting.
2. Tactical. The tactical phase is when the transition agenda is formed, with a focus on resolving structural barriers to the desired developmental outcome. These barriers include regulatory, institutional, and economic conditions. At the government level, these activities create an integrative and sufficient political space to realise innovative experiments with the development of a harmonisation framework of regulations or institutional rules to be in line with the transition vision. The same is true for other actors, such as NGOs, who negotiate changes by developing campaign programs to change consumer behaviour in the transition arena that will affect the activities of business entities.
3. Operational. The operational phase is the stage of implementing the transition agenda or innovation. The main actors involved here are decision makers, practitioners, and civil society organisations. All actors conduct transition experiments through cooperation or coalitions so that new arrangements can be developed. During the transition process, the vision and program of action becomes increasingly specific, with the focus of attention shifting to 'regime' actors who represent particular interests in the situation at hand. The effort here focuses on creating a portfolio of transition experiments that contribute to sustainability goals that can be scaled up significantly and measurably (Loorbach, 2010).
4. Reflexive. In the reflexive phase, all aspects of the experiments carried out in the operational phase go through monitoring activities, divided into two different aspects. First, monitoring the transition process, which focuses on macro issues, including assessing the roles of individual and collective actors are at the regime level. Second, monitoring the transition management, which focuses on monitoring the behaviour and responsibilities of various actors involved in the transition agenda in mobilising activities, projects, and the instruments they have created. The results of the evaluation will lead to the adjustment of the transition vision with the development of new insights and strategies (Loorbach, 2010).

Methodology

This article uses a qualitative methodology to understand the dynamics of WWF in encouraging the implementation of ASC in Indonesia. At the early stage, we conducted documentary reviews from available official reports from the Ministry of Marine Affairs and Fishery as well as reports from WWF. We then conducted semi-structured interviews with individuals who had been involved in ASC implementation ($N = 9$) to further understand their narrative regarding the issue surrounding the implementation. Indeed the study face limitation of the number of interviewees, however, we select

interviewees that have knowledge and first-hand experience in dealing with the ASC implementation. Three informants represent the government mainly from the Ministry of Marine Affairs and Fisheries, three represent aquaculture business associations while the other three are NGOs, and environmental activists are the major stakeholders in the implementation of ecolabel standards. We ask 10 questions related to their perception of challenges in implementing aquaculture certification programs ranging from government capacity to certification cost. For the government interviewees, we specifically ask how the government adopts or harmonises the ASC principles and indicators into national legal arrangements and technical policies as the legal basis for operations. For interviewees from the industry, we probe their perception of the role of industry players in integrating the parties involved in the entire supply chain to meet various indicators and criteria for sustainable aquaculture governance and seafood processing. As for the interviewees from NGOs, we asked about the role of NGOs, especially WWF in an effort to collaborate with the government in the success of the aquaculture ecolabel program. All interviews are transcribed and analysed by focussing on finding repeated challenges mentioned by different stakeholders. We then applied process tracing and thematic analysis to conceptualise the ASC implementation process in Indonesia. Process tracing is a data analysis method to identify, validate, and test causal mechanisms in case studies in a specific way and based on a theoretical framework (Reilly, 2010). As suggested by Reilly (2010), in order to use this method, researchers need to state their theory of causality.

Then, the researcher can reconstruct the explicit chronology of the events studied, where this chronology generally takes the form of a narrative by telling stories to reveal the causal mechanism. The power of process tracing lies in its ability to examine how things happened through the use of qualitative data sources. To compliment the process tracing, we apply thematic analysis. As suggested by Braun and Clarke (2006, p. 79), thematic analysis is a method for ‘identifying, analysing and reporting patterns (themes) within data’. The thematic analysis allows us to make sense of our interviews data and how such data enable us to provide convincing evidence for our theoretical framework.

The Role of WWF Indonesia in the Implementation of ASC Certification

The World Wide Fund for Nature (WWF) is recognised as the world’s largest and most experienced independent institution committed to the conservation of the environment and endangered species. World Wide Fund was founded in Switzerland on April 29, 1961 with the main vision to harmonise human life with nature, including the ecosystem in it. To achieve its vision, WWF has several missions, including efforts to preserve the world’s biodiversity, ensure the sustainable use of natural resources, and promote the reduction of pollution and consumptive patterns (WWF, 2021a). Since the beginning, WWF has illustrated how transnational environmental group engaged in hand-on type of politics by devoting its energy to a particular environmental project targeting particular areas of the world (Wapner, 1996, p. 74).

In 1962, WWF International established its Program Office in Indonesia in collaboration with the Ministry of Forestry for a mission to conserve the Javan rhino population, which at that time counted just 20 rhinos (WWF, 2021a). Then in 1996, WWF International established an organisation in the form of a Foundation in accordance with the provisions of Indonesian law, which transformed into a National Office in 1998 under the name WWF Indonesia. This is in line with the WWF mobilises approach that engages in the local issues that attempt to empower local communities (Wapner, 1996). This made WWF Indonesia an independent institution that is flexible in conducting program development and fundraising at the national level with its own organisational structure (WWF, 2021b). The establishment of WWF's Indonesian office aims to expand the field of work and raising funds, to ensure that funding does not only come from the WWF International headquarters in Switzerland (Chairunnisa, 2018). World Wide Fund Indonesia's funding sources come from 40 donors, aid agencies, philanthropy, and 100,000 WWF supporters throughout Indonesia (WWF, 2021b).

The ASC is an independent international non-profit organisation that was founded in 2010 by WWF Netherlands and the Sustainable Trade Initiative IDH to manage a responsible aquaculture certification and labelling program. Aquaculture Stewardship Council was developed in 2004 through the WWF Aquaculture Dialogues, as a series of roundtables involving a large number of stakeholders to develop quantitative indicators and standards that can minimise or eliminate negative impacts on globally traded aquaculture species. Aquaculture Dialogue activities involve more than two thousand NGOs, scientists, farmers, retailers, and other stakeholders in the aquaculture industry which are carried out transparently and inclusively in various cities around the world to ensure the process involves multi-culturalism. The dialogues resulted in 12 standards for each group of aquaculture species, including: salmon, shrimp, tilapia, pangasius, trout, abalone, bivalves (oysters, mussels, mussels, and clams), amberjack, and black kingfish (ASC, 2021).

To address environmental and social impacts, the ASC standard establishes seven principles or criteria as assessment indicators. Aquaculture Stewardship Council requires legal compliance with national and local laws and regulations; preservation of natural habitats, biodiversity and local ecosystems; preservation of water resources and quality; responsible use of feed and other resources; preservation of the diversity of wild populations; improving fish health and controlled and responsible use of antibiotics and chemicals; and agriculture to be socially responsible for their workers and local communities (ASC, 2021).

By using a multi-level perspective as the initial basis for the development of the framework in Transition Theory, ASC represents an innovative sustainability tool situated at the regime level. Regime here refers to the coordination between all institutions such as regulations, organisations, and networks that operate within the societal system as 'system innovation' for specific purposes, such as technology, policy, market, and consumption. This is relevant to the ASC formation process, as ASC was developed in an open forum which involved a wide array of participants from different backgrounds. Crucially, participants included industry actors themselves, who became the main information intermediaries for NGOs in measuring environmental problems, as industry representatives were able to provide production data to be used in

negotiations on setting standards. In addition, all ASC principles, criteria, and implementation mechanisms must refer to the technical guidelines for ecolabelling of fish and fishery products established by the FAO, as well as basic normative procedures from the World Trade Organization (WTO), International Organization for Standardization (ISO), World Organization for Animal Health (OIE), and International Social and Environmental Accreditation and Labelling (ISEAL) (FAO, 2009).

Figure 1 illustrates the application of the transition management cycle in the case of ASC implementation by WWF in Indonesia.

Strategic Phase

At the strategic level, actors may set a vision to mobilise potential and encourage actors to commit to transition planning goals. To do so, issue framing becomes important,

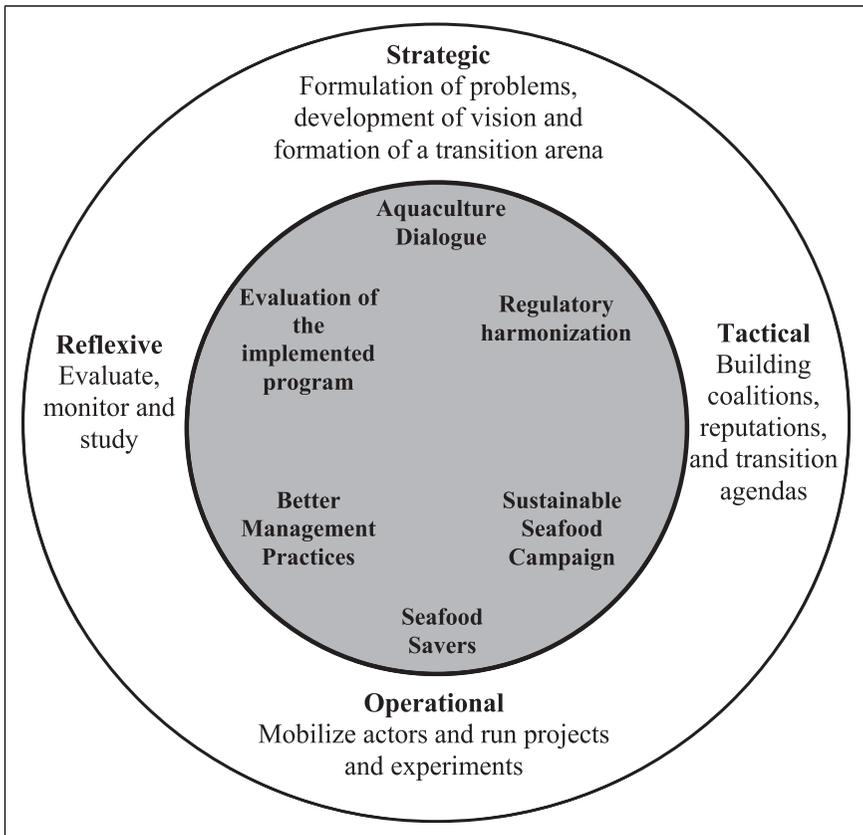


Figure 1. WWF's transition management cycle framework for ASC in Indonesia. Source: Developed by the authors.

where NGO actors would draw attention to their vision by engaging with strategic framing toward their stakeholders (Joachim, 2003). In our case, framing is a process where WWF convinces other stakeholders and the general public that specific policy proposals constitute acceptable solutions to pressing problems (Campbell, 1998, p. 382). Such framing starts in the formulation of a vision. Before formulating a vision, all actors need to agree on a new joint approach to handling problems that occur at the system level. In the aquaculture system, it is necessary to first identify the problems in the current system before beginning to make changes. Therefore, this paper's discussion of the strategic level phase will begin by briefly discussing the main features of the Indonesian aquaculture system, highlighting its challenges, then presenting a new vision of aquaculture transition.

The size of Indonesia's landmass makes aquaculture a potentially highly profitable agricultural sub-sector for the country. Using just a small amount of land, in 2018, Indonesia's total aquaculture production reached 17.25 million tons, increasing 3.36% per year since 2014. This figure exceeds the increase in capture fisheries production, which grew 2.82% per year over the same period (KKP, 2019). In fact, Indonesian aquaculture has the potential to produce over 100 million tons per year, with a production value of US\$210 billion (Oktopura et al., 2020), although the Government of Indonesia is targeting a more achievable intermediate target of 22.65 million tons by 2024 (KKP, 2020). This ambition reflects Indonesia's status as a developing country which remains oriented towards increasing agricultural production. In practice, however, there is an imbalance in the fulfilment of production carrying capacity, physical carrying capacity, ecological carrying capacity, and social carrying capacity. This is a huge challenge for aquaculture sector stakeholders, as they must work hard to balance all aspects of the environment, the economy, and social sustainability.

In terms of the environment, decline in water quality is a major problem. It increases vulnerability to disease outbreaks and causes death in the ecosystem. Many fish and shrimp commodities in brackish water have gill damage, causing mass death due to severe soil acidification in ponds with acid-sulfuric soil types in lowland coastal areas of Indonesia (Rimmer et al., 2013). Second, the contamination of aquaculture commodities can affect the quality of seafood sold for human consumption. Recently, international concern has emerged over the use of imported fish meal as feed for aquaculture commodities because it is believed to contain microplastics. Indonesia's aquaculture sector uses large amounts of fish meal products, with an average of 74 thousand metric tons used annually for fish feed. Third, aquaculture development can clash with the surrounding environmental ecosystems, such as mangrove ecosystem degradation due to land modification activities for aquaculture infrastructure, especially ponds (KKP et al., 2010).

Economically, Indonesia is faced with the situation of high fish feed prices, which on average represent 40–70% of operational costs. This is because most raw materials for fish feed, which is soybean cake flour, are purchased from other countries primarily Peru and Chile, resulting in an imbalance between high feed prices and relatively low selling prices for cultivated commodities. Although low prices can increase fishery products' competitiveness in national and international markets, this does not provide

significant benefits for farmers. This is especially true for small-scale businesses, which currently dominate fish farming, but have limited capital and financial management capabilities (Kementerian Kelautan dan Perikanan, 2021). Cost pressures that are difficult to contain due to limited capital can create instability or even a decrease in the quality of fish farming, especially if farmers are forced to do so to avoid bankruptcy. In addition, domestic raw materials primarily come from the eastern part of Indonesia, while the fish processing industry is located in the western part. This further complicates the allocation of fish farming logistics because Indonesia's infrastructure development is not evenly distributed between the western and eastern regions (KKP et al., 2019).

With regards to social sustainability, knowledge about sustainable fisheries quality management and security is not yet understood by Indonesian fish farmers. Efforts to implement best practices are also difficult because of the minimal availability of sustainable management technology, meaning that most fish cultivators in Indonesia continue to apply traditional or semi-intensive systems (Bappenas, 2014). Due to limited finances, small-scale fish cultivators are also more concerned with the profitability and efficiency aspects of technology. If they do not have a significantly positive effect on product profits, many farmers are simply not interested in applying the latest technological innovations (Suriyani, 2020).

In summary, the problems experienced at the domestic level are affecting the trade performance of Indonesian aquaculture products at the international level, which is increasingly tightening standards for the entire fishery production chain to ensure the quality, quality, and safety of fishery products while having minimal impact on the environment.

In working to transform Indonesia's aquaculture sector and overcome the complex array of problems identified, WWF introduced a strategy called the Market Transformation Initiative. The initiative's goal is to involve the private sector in improving the environment and natural resources by creating demand from a large number of commercial buyers to promote sustainability in commodity supply chains (Chipeta et al., 2014). The increasing market demand for sustainable products affects the production practices carried out by business units. So that in the long term, it is hoped that sustainability practices will not only meet demand but become industry norms. This is done by creating a standard setting mechanism or certification system that applies at global, regional, and national levels by involving key players throughout the commodity supply chain. In aquaculture, this mechanism is ASC.

The first stage of transition was carried out through the Aquaculture Dialogue process. In 2010, WWF held a Shrimp Aquaculture Dialogue (ShAD) at which Indonesia was made the host, supported by the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia. The dialogue was held on 9–10 March 2010 in Jakarta, and participants reviewed the first draft of a list of social and environmental standards (WWF, 2010). The ShAD was attended by 96 people from 10 countries; most were Southeast Asian countries, including actors from small to large-scale shrimp businesses, academics, company representatives, and social and environmental interest groups. Shrimp Aquaculture Dialogue was organised by a voluntarily elected

representative decision-making body to set social and environmental standards, the ShAD Global Steering Committee (GSC). The ShAD GSC developed an overview of each of the seven principles based on the criteria, indicators, and standards proposed during ShAD. All participants could constructively review the material, provide suggestions for remaining unresolved questions, and ask for further input from the public. Feedback was to be used by the ShAD GSC to further review and revise drafts of the standards before being posted for the public comment period (WWF, 2010).

There were several challenges in implementing the Aquaculture Dialogue series. First, WWF had difficulties in maintaining multi-stakeholder participation. Non-governmental organisations were more interested in attending dialogues for aquaculture species that require more intensive treatment, while industry players preferred to attend dialogues that focus on species relevant to their own businesses. This resulted in large gaps in the number of participants in each species. For example, the dialogue on the rule-making for shrimp and salmon producers was attended by more than 600 participants due to the species' high productivity and profile. Yet, the dialogue focussing on 'smaller' species such as tilapia was only attended by 200 participants. Furthermore, WWF generally faced difficulties in ensuring a representative range of participants from developing countries despite much aquaculture production in the global south. Not to mention that most of the rule-making were driven by the steering committee members who are responsible for doing the work (Havice & Iles, 2015). This gap in involvement, especially from representatives of developing countries, raises the image that ASC is a Western aquaculture standard, not a global regulation (Schouten et al., 2016).

Second, the view from smallholder farmers that ASC seems to be more oriented towards big business. This can be seen in the substantial resources needed to attend the dialogue. For example, at the 2010 ShAD in Jakarta, out of 96 participants, only two were smallholder farmers. This led to criticism by one of Indonesia's main fisheries NGOs, the People's Coalition for Fisheries Justice (KIARA), which stated that certification scheme is not effective in overcoming negative social and environmental impacts because the process seems to side with the industry and does not take into account the interests of smallholder farmers. In an interview conducted with the Ministry of Maritime Affairs and Fisheries, officials put forward similar views:

"ASC as a private standard is actually business-to-business because ASC is part of the retail chain where [businesses] aim to improve their connections, their networking, [so that] they get a big enough bargaining position or market position. So for example if they [are located] in Europe or say, America, and their retail chain only accepts ASC certification, well then [producers] must have it. So ASC - even though it's big - it's actually just part of the retail chain. And like I said before, it's about being business competitive. So they try to build their brand and expand their supply chain so that others join with them while their competition is reduced." (Informant 1, interview, 2021).

As a result, the Aquaculture Dialogue has not met the requirements of a good transition process. Although the dialogues are inclusive and open to all stakeholders, in

reality, participation is mostly limited to groups who are able to maintain their negotiating agendas due to the strength or availability of their resources. This might result in the lacks of legitimacy for standard making within the ASC.

However, the theory of transition management states that through an integral problem assessment, ‘a certain level of agreement can be reached at least on the question of whether there is an urgent problem or not. From transition theory, transitions can be realised if in fact the actors involved have felt the urgency to change in the pre-development phase’ (Loorbach, 2002, p. 7). Thus, in the case of the Aquaculture Dialogue, regardless of each actor’s interests, continuing unsustainable aquaculture practices in the midst of increasing seafood consumption by humans will have a very serious negative impact, not only on the environment but also on health and food safety. These factors are a point of urgency for all actors, so the development of strategies in this transitional arena can be considered the result of collective and mutually agreed development.

Tactical Phase

After establishing the vision, the next step is to create a transitional agenda by negotiating, networking, and building coalitions with other actors involved in the governance of the aquaculture sector to meet objectives at the tactical level. The first step that WWF took was to harmonise the regulations governing Indonesian fisheries with the ASC principles because regulations are the main foundation that guide all aquaculture actors. However, this is not easy to do, as Indonesian fisheries regulations do not refer to private standards:

“In our Ministry, national regulations do not refer to private standards but to international standards, regional agreements, and national regulations. Examples are the rules from FAO including those in the CCRF [Code of Conduct of Responsible Fisheries], then the Food Safety Act, and also the rules in our Ministry. So, we break down [the standards] from the CCRF, then FAO, if I’m not mistaken, has Good Hygiene Practices, then Food Hygiene Practices, and there are several other documents. Now that is what is broken down into policies at the Ministry nationally.” (Informant 2, interview, 2021).

Despite the challenges, WWF continued to work to harmonise the ASC criteria into the technical framework of Indonesian aquaculture governance. This is important because transition management theory advises to ‘not only to choose a specific transition scenario, but to create as many options as possible remain open’ (Loorbach, 2002, p. 8). For this reason, the main objective of WWF was to create a national interpretation of the ASC principles and criteria by relying on guidelines established by the FAO because both the ASC and Indonesian regulations refer to FAO. World Wildlife Fund was also involved in the design of Ecosystem Approach to Fisheries Management (EAFM) and Ecosystem Approach to Aquaculture (EAA) guidelines, working together with the Ministry of Marine Affairs and Fisheries. These two ecosystem approaches are the result of FAO’s 1995 Code of Conduct for Responsible

Fisheries, so their adoption into national regulations is a form of Indonesia's commitment as a member of FAO. Thus, ASC principles match the principles in the ecosystem approach, as illustrated in [Table 1](#).

As an example, efforts to preserve natural habitats, biodiversity, and local ecosystems, as identified in ASC principle number 2, are realised by WWF in Indonesia through a mangrove rehabilitation program. Indonesia has experienced mangrove degradation by more than 50% over the last three decades, with one of the main causes being the conversion of mangrove land into ponds for aquaculture activities, especially shrimp. Since 2009, WWF Indonesia has been working with nine partners to periodically restore 55.25 hectares of coastal land with mangrove trees. With a wider mangrove coverage, the population of animals and plants in the area will increase (Post, 2017). These efforts are in line with EAFM Principle number 2, which is to ensure ecological well-being, through efforts from the Ministry of Marine Affairs and Fisheries, Ministry of Environment and Forestry, and Mangrove and Peat Restoration Agency to support the rehabilitation of 600,000 mangrove forests across all provinces in Indonesia.

The process of harmonising Indonesian sustainable fisheries regulations assisted by WWF can be seen in [Figure 2](#).

The transition process conducted by WWF began in 2004 with Law no. 31/2004 concerning Fisheries. However, the law is lacking in terms of law enforcement in the arena of sustainable fisheries resources, particularly limited law enforcement when it comes to illegal, unreported, and unregulated fishing (IUU fishing) activities. This has resulted in reductions in Indonesia's fishery stocks ([Adam & Surya, 2013](#)). The

Table 1. Harmonisation of ASC Principles with EAA and EAFM Principles.

ASC Principle	EAA and EAFM Principles
Socially responsible agriculture for workers and local communities (Principle No.7)	Ensuring human well-being (Principle No.1)
Conservation of natural habitats, biodiversity and local ecosystems (Principle No. 2)	Ensuring ecological well-being (Principle No.2)
Conservation of water resources and quality (Principle No. 3)	
Responsible use of feed and other resources (Principle No. 4)	
Conservation of wild animal population diversity (Principle No. 5)	
Improving fish health and controlled and responsible use of antibiotics and chemicals (Principle No. 6)	
Legal compliance with national and local laws and regulations (Principle No. 1)	Facilitate the achievement of both, through effective policies of developed fisheries and aquaculture sectors/areas (Principle no.3)

Source: Compiled by the authors.

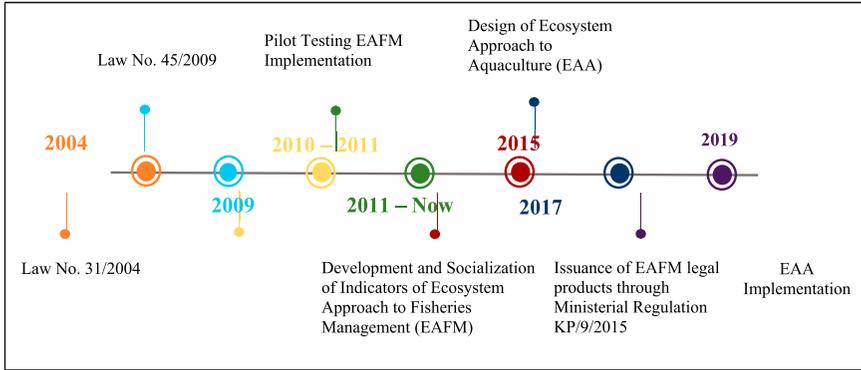


Figure 2. The transitional phase of Indonesian fisheries policy assisted by WWF. Source: Compiled by authors.

government has made improvements to the law by passing Law no. 45/2009, which recognises a paradigm shift from fisheries management to an ecosystem approach (Muawanah et al., 2018). The aim is to improve the situation of Indonesian fisheries, which remain more concerned with increasing production than ecosystem health. This legal shift is also part of Indonesia’s commitment to the international community because the ecosystem approach is the result of an FAO initiative.

In 2010, WWF joined National Working Group II to take part in a national workshop on determining EAFM indicators. Other participants included the Ministry of Marine Affairs and Fisheries and the Centre for the Study of Coastal Marine Resources from the Bogor Agricultural University, as well as other national and regional fisheries stakeholders (KKP et al., 2010). The indicators were designed and then disseminated to 11 Fisheries Management Areas in Indonesian marine waters, so all three dimensions of the ecosystem approach can be adopted properly to ensure the resources and welfare of coastal communities. The EAFM is relevant for Indonesia given that such an approach is in line with FAO Convention on Biodiversity especially in complying with Aichi Target 6: Sustainable management of marine living resources.

In 2011, the results of the national workshop were followed by a meeting of experts, including WWF, to create a method for assessing each indicator as well as the condition and status of each Fisheries Management Area to enter the management stage. After the EAFM indicators were successfully refined, WWF collaborated with the EAFM Learning Center and academics from multiple universities to pilot the indicators’ implementation. One pilot was a shrimp commodities trial in Berau District, East Kalimantan, facilitated by WWF and Mulawarman University. As a result of such trials, EAFM indicators can be used to assess fisheries management performance (Irawan, 2012).

Following the EAFM performance assessment trials, the Government of Indonesia began to enforce the implementation of EAFM through the ratification of the Minister of Marine Affairs and Fisheries Regulation No. 9/PERMEN-KP/2015 concerning

Competency Standards for Specific Work Fisheries Management with the EAFM Approach. This standard was created to improve human resources capacity, as implementing the EAFM approach requires personnel who can integrate ecological aspects into the achievement of socio-economic goals. World Wildlife Fund was a member of the competency standards formulation team (Irawan, 2012).

Between 2015 and 2017, WWF developed an EAA guideline plan through a cooperation agreement with the Ministry of Marine Affairs and Fisheries. The aim was to develop a broader and more comprehensive framework for aquaculture, as the EAFM focuses solely on the management of marine waters and coastal zones. Ecosystem Approach to Aquaculture has three strategic principles:

1. Aquaculture development must consider all ecosystem functions and not threaten the community.
2. Aquaculture practices must be able to empower human welfare and other stakeholders.
3. Aquaculture practices should be developed in other sectors with adjustments through policies and objectives (Brugere et al., 2018).

One of the results of WWF's technical consultation with the Ministry was the issuance of Director General Decree No. 154/Per-DJBP/2019 by the Director General of Aquaculture, Ministry of Marine Affairs and Fisheries, for the first implementation of EAA in Pinrang District, South Sulawesi, as an EAA pilot project to improve aquaculture management. Pinrang was selected following assessment, as it has a range of different aquaculture activities that have been deemed to provide added value in improving the welfare of the local community. In addition, the Pinrang District Government's concern for the environment is comparatively high.

Altogether, WWF's efforts can be considered as having succeeded in meeting the main priorities at the tactical level. Institutional barriers were removed and challenges that hindered the transition agenda were overcome. In addition, WWF generated a significant amount of energy and interest among aquaculture actors in Indonesia, successfully mobilising new initiatives and experiments.

Despite being seen as a western-driven environmental standard, the Indonesian government seems to support utilising such a standard. Unlike in the palm oil sector, where the state promotes its national standard, in the case of aquaculture, the Indonesian government primarily focuses on the product's quality and safety. Hence, ASC is a certification standard for Indonesian producers to access the global market. Furthermore, in the aquaculture sector, there are more than 250 Indonesia national standards on aquaculture. Many standards were designed to prepare domestic players to meet requirements from all existing international standards.

Parallel to WWF's effort to harmonise government regulation with ASC principles, since 2017, the Indonesian government has started to prepare to unify hundreds of aquaculture certifications into one certification, namely, Indonesian Good Aquaculture Practices (IndoGAP). This certification is expected to guarantee the quality of fishery products, both for domestic and foreign markets. Indonesian Good Aquaculture

Practice is expected to become a standard for aquaculture products circulating in Indonesia and increase product competitiveness for local, regional and global markets. Arguably, this initiative was highly linked with the WWF efforts. However, this standard is seen as less credible by foreign buyers. As a result, Indo-GAP certification cannot be used directly by business actors to export aquaculture products to destination countries but only as an initial requirement to take care of the certification required by the buyer.

Operational Phase

The focus of the operational phase is to develop experimental results using new ideas, insights, and knowledge to realise the transition agenda. In this phase, WWF created a business-to-business platform called Seafood Savers. Seafood Savers is a membership program for producers, buyers, and financial institutions in Indonesia. Seafood Savers membership can be obtained through three main stages: initial stage, planning stage, and membership stage. Figure 3 provides an overview of the mechanism that producers need to go through before becoming members of Seafood Savers.

Companies which become Seafood Savers must go through the stages of compliance testing and identification in advance to assess how the company’s fisheries activities are performing in comparison to sustainable minimum standards. This process is carried out through interviews and field observations, including interviews with the companies themselves, government agencies, local NGOs, communities, and other stakeholders in the company’s operational areas. There are several main indicators in the compliance test, including that companies are not involved in corruption cases nor with political parties, do not have violate human rights or conservation values, and are not on the WTO and Ministry of Finance black lists (Seafood Savers, 2017).

After passing the assessment stage, prospective members will sign a Memorandum of Understanding (MOU). The MOU must be signed by the leaders of both the

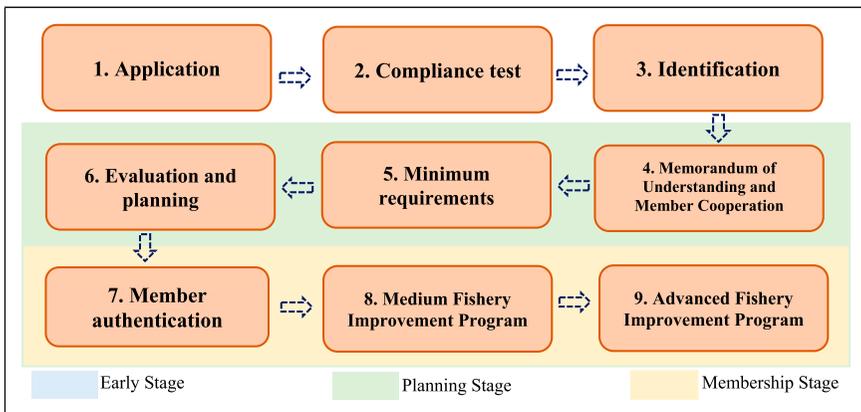


Figure 3. Seafood savers membership stages. Source: (Seafood Savers, 2017).

company applying for membership and WWF Indonesia. Then, Seafood Savers provide recommendations for fishery activities that need to be implemented by the company for a period of 1 year, accompanied by technical assistance from WWF to meet the minimum standards of sustainable fisheries. The implementation of these recommendations will be monitored and evaluated by Seafood Savers every 3 months. Companies that meet the minimum standards will become members through the signing of a Cooperation Agreement (Seafood Savers, 2017). For example, in 2017, a senior PT Bogatama Marinusa official and the CEO of WWF Indonesia signed an MOU, followed by a cooperation agreement, which was signed by company representatives and the Director of WWF Indonesia's Coral Triangle Program.

After officially joining the membership, Seafood Savers members are obliged to fulfil the steps in the Fishery Improvement Work Plan prepared by WWF. The work plan includes legal requirements that must be met, alongside requirements for the implementation of environmentally friendly aquaculture programs, sustainable fisheries management, research, and social responsibility activities. These measures are in line with ASC standards (WWF Indonesia 2015).

As of 2021, there are nine aquaculture companies in Indonesia that have become members of Seafood Savers. They are Celebes Seaweed Group, PT Mega Marine Pride, PT Bogatama Marinusa, PT IAMBEU Mina Utama, PT Iroha Sidat Indonesia, PT Bumi Menara Internusa, PT Mustika Minanusa Aurora, PT Surya Alam Tunggal, and PT Ika Nusa Windutama. In the 2017–2019 period, three of these companies succeeded in obtaining the ASC ecolabel certification: PT Mustika Minanusa Aurora, for two tiger shrimp ponds covering an area of 115 hectares in Bulungan District, North Kalimantan; PT Bumi Menara Internusa, for 18 whiteleg shrimp (king prawn) ponds covering nine hectares in Probolinggo District, East Java; and PT Mega Marine Pride, for 68 intensive ponds covering 23 hectares under (WWF Indonesia 2018).

Before Seafood Savers members implement the improvement activities suggested by WWF, WWF provides them with a guidebook the organisation compiled for each aquaculture species, called Better Management Practices (BMP). The BMP guidebook comprehensively lists the methods that can be applied to control environmental and ecological conditions, including land preparation, procurement of quality seed, maintenance and management of aquaculture feed, water quality control, pest and disease control, harvesting process and post-harvest handling, recording cultivation activities, conservation of the cultivation environment, and the social aspects of cultivation. The BMP led to the development of the AIP, which was designed by the WWF Indonesia Aquaculture Team to be implemented by Seafood Savers in aquaculture locations. For example, in efforts to improve tiger shrimp cultivation in Pinrang District, WWF provided training on water quality management through the use of RICA probiotic bacteria (Seafood Savers, 2019). In East Java, with the help of Seafood Savers, PT Mega Marine Pride established a wastewater treatment plant which can convert aquaculture pond wastewater into cleaner water to reduce environmental pollution. This plant was achieved by allocating nine hectares of land to accommodate waste water from aquaculture ponds (Seafood Savers, 2019). World Wildlife Fund has also conducted intense awareness raising on mangroves, helping farmers rehabilitate

mangroves because of the damaging impact of converting mangroves into shrimp ponds. In Probolinggo District, for example, WWF and PT Bumi Menara Internusa planted 10,000 mangrove seedlings, in line with the second ASC principle on conserving natural habitats (Seafood Savers, 2017).

Unfortunately, ecological regeneration activities in Indonesia have been hampered by the lack of modern tools that can support sustainable fishing practices. Most aquaculture cultivation is dominated by smallholders who do not have sufficient funds to purchase new technology. World Wildlife Fund does provide technological facilities, but they are limited, as stated in an interview with representatives of tiger shrimp farmers, such as the Aceh Aquaculture Cooperative:

“WWF itself does have a laboratory [it provides to us] as a form of service. However, their services do not have much to do with the technical elements of shrimp disease, only simple equipment to measure water saltness and Ph. That’s what WWF facilitates for the farmers.” (Informant 4, interview, 2021).

This is because WWF is a non-governmental organisation that does not receive funding from the Government of Indonesia. Nevertheless, WWF is looking for ways to continue to provide support to smallholders so that they can have the tools they need to improve the quality of their production.

World Wildlife Fund also collaborated with a multilateral initiative agency called AgResults to run the Indonesia Aquaculture Challenge Project 2021–2025 program. This project is a competition with a Pay-for-Results prize scheme that encourages cultivation technology entrepreneurs to sell as many technological products as they can to smallholders at low prices. The project aimed to support increased adoption of auto-feeder and aerator technologies that can increase the productivity of small-scale farmers, while strengthening relationships between equipment providers, farmers, and financial services. The competition will run for 4 years with prizes for participants who are successful in selling the most technology during that period. World Wildlife Fund will monitor project activities in six provinces: West Java, East Java, Central Java, West Nusa Tenggara, South Kalimantan, and South Sulawesi (Suriyani, 2020).

World Wildlife Fund’s efforts in implementing ASC certification are limited by the high financial costs that must be paid by business actors to become certified. The average cost for such certification is around IDR 500,000,00 or about USD 33,000. This means that ASC certification remains limited to being adopted in the aquaculture sector in the Global South, especially in Indonesia. These high costs are especially significant for smallholder aquaculture producers. The cost is influenced by several factors, with a representative of the Ministry of Marine Affairs and Fisheries saying:

“ASC does not have a local auditor to assess the businesses, so it is necessary to bring in auditors from abroad, which of course requires a large amount of money. Not only that, the costs incurred are also weighted based on the percentage of production. So the higher the percentage of production, the higher the costs, which even for one scheme can cost hundreds of millions of dollars.” (Informant 5, interview, 2021).

From the quote above, we can see that realising ASC certification at a large scale requires a very long development path, especially in terms of mobilising business actors who operate based on the profit and loss principle. Smallholders may thus feel that the high cost of becoming certified is not financially profitable. Moreover, from our interviews with shrimp business actors, we found that several farmers have already carried out the ASC pre-certificate process but did not see any increases in the retail price of their shrimp. Certification costs then are still not worth the incentives (product premium prices).

Further complicating the situation is that, as an NGO dependent primarily on donors, WWF cannot provide sufficient direct financial support to farmers. There are limitations from the government to help financially in the framework of this certification process. In addition, international funding such as the Global Environmental Facility (GEF) does not specifically have a program that is directly related to assisting the ASC certification process. Transition management theory states that the main actor who has the capability in financial and managerial incentives is of course the government. Nevertheless, WWF should be able to implement other supporting activities, such as building the capacity of local auditors for all commodities that want to achieve ASC certification. At the time of writing, there has so far only been training for assessors and auditors for the ASC Shrimp ecolabel certification. If this training could be expanded to cover all aquaculture commodities in Indonesia, it may reduce the costs that must be incurred for certification.

Reflexive Phase

In the reflective phase, WWF Indonesia carried out a series of monitoring, evaluation, and assessment activities against the strategic plan. This is to support the change and development of strategies in the next agenda. For membership of industry players in Seafood Savers, WWF conducts special monitoring through six monthly work plan evaluations. Monitoring results are in the form of compliance reports on the implementation of the AIP program, the results of which must be in line with the companies' action plans and refers to the criteria set by the ASC. This improvement progress report acts as proof of how committed the company is in implementing sustainable fisheries practices. This also serves as a lesson for other Seafood Savers members in the future. World Wildlife Fund also provides easy access to the AIP Program Report for all parties including the public by uploading it on the Seafood Savers website (WWF Indonesia 2019).

The reflexive phase can be seen as an instrument to maintain the legitimacy of the process in light of criticism. This is in line with many arguments that the legitimacy of global value standards requires political trust and accountability (Fouilleux & Loconto, 2017; Johansson, 2012). As suggested by the literature, trust in the global voluntary standard can be achieved through the creation of shared norms and values and third-party mechanisms ensuring the legitimacy of the process (Fouilleux & Loconto, 2017; McDermott, 2012). We suggest that such legitimacy can also be achieved by providing a mechanism that incorporates the evaluation into the certification process. In this

phase, the importance of the actors engaging in feedback and criticism toward the global voluntary standard legitimises the transition process.

In our case, in addition to monitoring Seafood Savers members, every year WWF holds a Seafood Savers Annual Meeting to pursue such legitimacy. At this meeting, Seafood Savers members, WWF Indonesia, and government parties gather to hold collective discussions to provide input, submit criticism and suggestions, and plan steps to take improvement measures for the Seafood Savers program (Khairani et al., 2019). If there are new sustainability issues faced by the Indonesian fisheries sector, WWF will hold an ad hoc meeting as stipulated in the Seafood Savers work plan. This will provide comprehensive substance for all parties involved in the transition process to consider the extent to which the implementation of the transition process has been satisfactory, and what has been learned from the innovative experiments that have been carried out. Thus, it is crucial to carry out a systematic, documented evaluation.

Conclusion

This study shows the importance of taking a transition management approach through observing the activities undertaken by WWF to transform Indonesian aquaculture by implementing a new mechanism: ASC certification. Starting with the formation of a comprehensive strategy through the Aquaculture Dialogue process, involving various stakeholders to achieve a common vision and mission, the ASC principles were then interpreted into national regulations with WWF's involvement in the formation of the EAFM and the EAA. In particular, WWF provided assistance for business actors engaged in the aquaculture sector through the Seafood Savers program, helping them to conduct the AIP in order to obtain ASC certification.

Overall, the activities carried out by WWF to transform the Indonesian aquaculture system can be considered to have been successful, as evidenced by the number of companies that have obtained ASC certification with guidance from WWF. However, the conservation gains appear to remain relatively small due to the growing gap between NGOs like WWF's intended visions and actions that are permitted in an environment that is always more restrictive. In the case of ASC certification, WWF's governance capacity in Indonesia is not yet comprehensive or fully developed. This is due to obstacles in encouraging the adoption of ASC principles into national regulations because of the current aquaculture law does not refer to private standards. Thus, there seems to be an inconsistency between the two actors – WWF and the Government of Indonesia – who should be able to create a network of cooperation to fulfil the same goal.

Although ASC certification promotes a collaborative strategy, the mechanism relies on business competition to ensure both value for businesses and reasonable (yet increased) costs for consumers. However, in the Indonesian context, there remain challenges because of lack of finances for aquaculture producers, especially smallholders who dominate the Indonesian aquaculture sector. This is in line with findings regarding private-led voluntary standards in other sectors, such as palm oil, where private-led voluntary standards are due to a lack of robust organisation that certification

demands (Brandi et al., 2015; Watts et al., 2021). Nevertheless, the findings also suggest that the government's involvement and support from non-government help the smallholders achieve voluntary sustainability certification. In the case of aquaculture, the role of WWF in supporting the capacity building of smallholders allows them to have greater information regarding sustainability standards.

Furthermore, in the case of Indonesia's palm oil sector, there is a growing discontent toward private governance models resulting in rival governance with the state-led certification standard (Wijaya & Glasbergen, 2016). In the aquaculture sector, the private-led certification scheme is compatible with the national regulation in which the national standard becomes an initial requirement to take the global voluntary certification required by the foreign buyer. Moreover, despite the limitation at the cost of certification, NGOs' effort to harmonise the private certification system has encouraged some improvement in government regulation that incorporates many provisions stipulated by private certification.

Thus, the application of the transition management approach reveals several recommendations in dealing with the limitations experienced by WWF. These include (1) becoming more inclusive by reconsidering the role of multi-actors at various levels; (2) conducting an international dialogue to consider reducing the cost of certification for aquaculture producers in developing countries, which are dominated by smallholders; (3) improve the bureaucracy with institutional structures to be able to adopt ASC criteria into national regulations; and (4) build the capacity of local auditors for all aquaculture commodities to minimise costs for business actors, especially smallholders.

This research is based on the transition management framework. Future research should be directed towards an in-depth analysis of each stage of the transition phase. For example, how can this transitional agenda be carried out on one aquaculture commodity at the local level, considering that each commodity and each region must have creative diversification of different instruments and methods to meet sustainable needs. Furthermore, it would be interesting to further study the interaction between private-led certification standard with national certification standard in aquaculture sector.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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