sustainability

MDPI

Article

Global Ecolabelling Certification Standards and ASEAN Fisheries: Can Fisheries Legislations in ASEAN Countries Support the Fisheries Certification?

Sopha Lieng *, Nobuyuki Yagi and Hiroe Ishihara

Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo 113-8657, Japan; yagi@fs.a.u-tokyo.ac.jp (N.Y.); a-hiroe@mail.ecc.u-tokyo.ac.jp (H.I.)
* Correspondence: liengsopha@gmail.com; Tel.: +81-3-5841-7501

Received: 1 September 2018; Accepted: 15 October 2018; Published: 23 October 2018

Abstract: Fisheries, particularly small-scale fisheries, in the Association of Southeast Asian Nations (ASEAN) countries are an important source of food security, nutrition, and livelihood for people. However, high fishing pressure and other impacts have resulted in a decline of fisheries resources, questioning the future sustainability of fisheries. Ecolabelling is a tool developed based on the Code of Conduct for Responsible Fisheries and the Food and Agriculture Organization (FAO) Guideline for Ecolabelling of Fish and Fisheries Products from Marine/Inland Fisheries. In the past decades, only a few fisheries in ASEAN countries have been certified. This study particularly focuses on the legal frameworks of these countries and reviews the existing national fisheries legislation, including laws, acts, decrees, directives, rules, and regulations in ASEAN countries in relation to the requirement of the fisheries certification standards. The review reveals that although the legal frameworks in ASEAN member states generally provide a fair basis for their fisheries to meet the requirement of the fisheries certification standards, further improvements are required to incorporate the concept of adaptive management, precautionary approaches, and reference points on fishery management objectives. Monitoring, control, and surveillance of fisheries and other enforcement activities for fisheries legislations are other challenges to ensure sustainability of fisheries through fisheries certification.

Keywords: ecolabelling; certification; ASEAN; small-scale fisheries; GSSI; community fisheries

1. Introduction

In 2014, fisheries in Asian countries constituted nearly 53.0% of the global fishery production [1]. Millions of Asian fishers depend on fishing for livelihood needs and domestic food consumption [2]. The income from fishing is used as capital, which is invested in other economic activities to generate additional income [3]. In 2014, 84% of the world population engaged in capture fisheries and aquaculture was from Asia [2]. Southeast Asian countries supplied approximately 21.6% with the production ranging from 33.5 million metric tons in 2010 to 42.2 million metric tons in 2014 [1]. Vietnam, Myanmar, the Philippines, Thailand, and Malaysia are among the major marine capture producers in the world [4]. The ASEAN fisheries activities provide livelihood to millions of people. For instance, at least 869,225 fishing boats and 6,11,389 fishers were employed in Southeast Asian fisheries in 2015 (Table 1). The total fishery production of ASEAN fisheries in 2015 was 42,998,242 tons (Table 1). Fisheries and aquaculture activities in Asia as a whole provide livelihood to 11% of the global population [5].

Table 1. Number of fishing boats and gears in Southeast Asia in 2015.

Countries	Indo.	Cam.	Mal.	Myan.	Viet.	Thai	Phil.	Bru.	Lao	Sing.	Total
Number of fishing boats (1000)	625.708	98.69	56.21	28.46	28.72	25.00	6.371	0.036	N/A	0.03	869.225
Number of fishers (1000)	2724.69	N/A	170.4	3216.3	N/A	N/A	N/A	N/A	N/A	N/A	6111.39
Fishery production (1000 tons)	22,154.4	731.8	1998.4	5316	6549	2429	4645	4.35	158.6	8.16	42,998.24

Source: SEAFDEC (2017) [6]. Indo. = Indonesia; Cam. = Cambodia, Mal. = Malaysia; Myan. = Myanmar; Viet. = Vietnam; Thai = Thailand; Phil. = Philippines; Bru. = Brunei Darussalam; Lao = Lao PDR, Sing. = Singapore

In particular, small-scale fisheries contribute around half of global fish catch in developing countries and employ about 90% of the World's fishers [7,8]. More than 90% of small-scale fish catch are for direct human consumption [7,8]. Small-scale fisheries have a vital contribution to fish nutrition, income and livelihood needs, and employment to ASEAN people and the World. Furthermore, 80% of the Asian fishers are small-scale and artisanal fishers [9]. For instance, in Indonesia, 90% of vessels targeting tuna species are small-scale fisheries, <5 gross tonnage (GT) [10]. These small-scale Tuna fisheries are an important livelihood contribution to communities throughout Indonesia [10]. However, the future sustainability of fisheries raises the concern whether fish and fisheries products shall be obtained using responsible fishing practices [5].

Ecolabelling has become an increasingly well-known method for managing fisheries sustainably; various ecolabelling certification schemes have been established in the past decade, resulting in confusion among consumers on how to recognize a credible seafood certification scheme [11]. The Global Sustainable Seafood Initiative (GSSI) is a solution to this problem by providing a benchmark for certification schemes that involves a process of assessment by independent experts [11]. When a seafood certification scheme achieves the GSSI recognition through the benchmark process, it can be considered internationally credible. The GSSI global benchmark tool was developed based on the FAO Code of Conduct for Responsible Fisheries (CCRF), the FAO guidelines for Ecolabelling of Fish and Fishery Products from Marine/Inland Capture Fisheries, and the FAO Technical Guidelines for Aquaculture Certification [11]. The tool includes the essential and supplementary GSSI components that allow a certification scheme to have a diverse approach and the existence of different schemes [11]. The benchmark framework has the following four sections [11]:

A. GSSI Essential Components and GSSI Supplementary Components for Governance of a Seafood Certification Scheme
B. GSSI Essential Components and GSSI Supplementary Components for Operational Management of a Seafood Certification Scheme
C. GSSI Essential Components and GSSI Supplementary Components for Aquaculture Certification Standards
D. GSSI Essential Components and GSSI Supplementary Components for Fisheries Certification Standards

The requirements of A and B are not directly related to the producers (i.e., fishers) but to organizations that provide certification schemes or those of retailers and distributors; C addresses aquaculture produces. Since the focus of this study was ASEAN capture fisheries interested in receiving certification from existing scheme-owners benchmarked by GSSI, only essential component D is considered. Moreover, GSSI supplementary components are not required for GSSI recognition [7].

Until now, only a few ASEAN fisheries have received certifications from GSSI recognized schemes [12,13]. The Ben Tre clam fishery in Vietnam is granted with the certification by the Marine Stewardship Council (MSC) [12]. The certified fishery so far was established and managed by a cooperation of local and competent authorities, NGO and fishery communities or cooperatives. For instance, the Ben Tre clam fishery in Vietnam is a co-operative fishery capturing clam (*Meretrix lyrata*) by hand-gathering, the first MSC-certified fishery in Southeast Asia, established and managed by Ben Tre People Committee, Department of Agriculture and Rural Development Ben Tre Province (DARD Ben Tre), Fisheries Department of DARD Ben Tre, Department of Agriculture and Rural Development of Binh Dai, Ba Tri and Thanh Phu Districts, Clam Cooperatives and Clam Groups [12].

The Vietnam blue swimming crab (*Portunus pelagicus*) was initiated to establish blue swimmer crab processor companies in partnership with WWF-Greater Mekong who require overseas customers [14]. It is co-managed by the Vietnam Association of Seafood Exporters and Processors (VASEP) Crab Council, Processor Companies, WWF-Greater Mekong, Department of Agriculture and Rural Development (DARD), Department of Capture Fisheries and Resource Protection (DECAFIREP), the Research Institute of Marine Fisheries (RIMF), Ministry of Agriculture and Rural Development (MARD), Kien Giang Provincial People Committee (PPC), and Kien Giang Fishers Community [14]. With the decline of fisheries, the certified fisheries maintain their performance at the MSC standard, and improve it when it falls below the standard [14,15]. The Marine Stewardship Council (MSC) have issued the greatest number of 256 certified fisheries in 36 countries by March 2015 which represent about 10% of the total global capture fisheries production [16].

The establishment of fishery ecolabels must be in line with the existing fishery legislations according to the GSSI standard. However, the legislation alone does not justify that a fishery receives an ecolabel. The possibility of receiving the fisheries certification depends on numerous factors, such as the status of fisheries resources, institutional capacity and arrangement, national and regional fishery policies, and the legal framework [17,18]. A fishery which meets the GSSI requirement standard is granted with the certification. For instance, a fishery intends to get the certification from the MSC, submit a proposal to Marine Stewardship Council. A team of experts will conduct a fisheries assessment and evaluation according to the MSC principles and MSC Fisheries Certification Requirements [19].

So far, it is a challenge for small-scale fisheries to get the MSC certification. Small-scale fisheries are diverse characteristics, generally employ selective fishing gears and capture multi-species in the tropical region. Small-scale fisheries are differently defined according to each national fishery legislations. Small-scale fisheries are not easily accessed to the MSC standard and procedure [16]. The GSSI and MSC does not define different standards of the certification for small- and large-scale fisheries [11,20]. In past experiences, small-scale fisheries suffer financial constraints to pay for the certification process, and have insufficient data and information [21]. Many small-scale fisheries can operate without license, for instance in Cambodia. Therefore, there is no proper record of these fisheries and the information is very limited. Many small-scale fisheries rely on external subsidies to pay for the certification cost [21]. The sources of financial support can be from national and local government and NGO, for instance the World Wildlife Fund (WWF). In contrary, because of their influence, large-scale fisheries can get some extent of the assessment cost, such as for traveling, data collection and research, and this is not the case for small-scale fisheries [21]. The price premium was expected from the international market, such as Germany and Switzerland, but large-scale fisheries dominate the market and the small-scale fisheries could not access it [21].

The effectiveness of fishery management depends on how the fishery is legally enforced and the fishers follow the rules and regulations. In many cases, law enforcement is not fully effective [22–24]. The establishment of community fisheries is to promote the implementation of effective law enforcement, conservation effort, eliminating all types of illegal activities, strengthening fisheries management capacity to utilize fisheries resources in a sustainable manner [25]. Strategies are important to have the law effectively enforced. According to the law, activities that violate the law will be punished. Engaging in the fishery certification is to contribute to the improvement of fishery management to ensure sustainability of fishery resources [15].

Therefore, this study examined legislations in ASEAN countries relating to fisheries management to provide reviews for the provisions that are relevant to the required criteria of the GSSI benchmark tool. The study aims to elucidate the status of GSSI-related-fishery legal framework to ASEAN countries and help them adopt foreign experiences and opportunities for the future establishment of fisheries certification in the region.

2. Status of ASEAN Fishery Legislations

Numerous fisheries legislations of ASEAN countries, namely Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam, are available in the FAO database. Fisheries legislations include various laws, government ordinances, sub-decrees, and local rules and regulations. The national fisheries legislations were examined in relation to fisheries management requirement of the GSSI global benchmark tool (Table 2). For instance, the fisheries legislations of Vietnam were reviewed, revealing that the 2003 Vietnamese Fisheries Law 2003 was a decision on approval of program for protection and development of aquatic resources and an ordinance on management and conservation of aquatic resources [26].

2.1. Management Organization

The GSSI benchmark tool specifies governance and management standards for certified fisheries [11]. Specifically, the GSSI standard requires the existence of a fishery management organization or an equivalent arrangement [11].

Many ASEAN fisheries legislations support local fishing/communities to establish their fisheries management organizations. These legislations encourage community fishers to get involved, provide opinions, and share experiences in fisheries management. The capacity building of local community fishers is legally supported. In Cambodia, Indonesia, Laos, the Philippines, Thailand, and Vietnam, these fishery legislations support community fishery organizations at different levels.

In Cambodia, the Royal Decree on the establishment of community fisheries [27] allows local community fishers to establish their fisheries organization. The law on fisheries [28], sub-decree No. 25 OrNorKrorBorKor on community fisheries management [29] and guideline No. 316 on community fisheries [30] define the rights, roles, and responsibilities of a community fisheries organization to participate in fisheries conservation and management [28–30]. Community fisheries have the duty to formulate a working plan of their activities [29]. The state of the community fisheries management has been continuously monitored, evaluated, and reviewed [29]. The government has the function to not only facilitate the implementation process of community fisheries, but also provide assistance and capacity building to the communities [29].

In Indonesia, the government prioritizes poverty reduction, social welfare, and capacity building of local community fishers. Regulation No. 2/PERMEN-KP/2013 [31] supports the establishment of a guideline for strengthening fishery-related business of local community fishers, who are also encouraged to participate in the management of fisheries resources (Article 60) [32]; thus, the traditional culture and fishers' interests are respected and protected (Articles 17 and 60) [32]. Community fishers are allowed to participate in law enforcement (Article 60) [32].

In Laos PDR, the Fisheries Law of 2009 allows fishers to establish fisher communities (Article 48) [33]. The communities assume their specific roles and responsibilities (Article 48) [33], granting fishers the right to participate in fisheries management (Article 51) [33] and protecting and respecting their local tradition and culture (Article 28) [33]. The fisheries management organization is established at provincial and district levels (Article 43) [32]. Local fishers are legally permitted to participate in research surveys and the policy formulation process (Article 17) [33].

In the Philippines, Republic Act No. 8550 (1998) [34] allows the community fishers to establish a fisheries management advisory body at the local level with assistance of local non-governmental organizations and other concerned agencies (Section 69) [34]. A fisher representative is legally supported to provide comments and suggestions concerning fisheries management at local and national levels (Section 70) [34]. The Department of Agriculture and local authority is responsible for providing capacity building to community fishers, such as data collection, research, marketing, and livelihood activities (Section 24) [34].

In Thailand, the Royal Ordinance on Fisheries permits community fishers and encourages other stakeholders to participate in fisheries management, conservation, and utilization (Sections 8, 12 and 25) [35]. Local community fishers receive support and capacity building from the government (Section 25) [35]. In Vietnam, local community fishers are encouraged to participate in fisheries

monitoring, enforcement and conflict resolution by the Vietnamese Fisheries Law of 2003 [36]. The fisheries are authorized to be managed by local authority (Article 15(3)) [36].

2.2. Participatory Management

The GSSI standard requires a participatory and transparent fishery management system [7].

Fisheries legislations of Cambodia, Indonesia, Lao PDR, and Thailand encourage local community fishers to participate and employ their local knowledge and experience in fisheries management. In Cambodia, the 2005 sub-decree of community fisheries management encourages community fishers to use their local experiences; community fishers share their local knowledge through meetings, workshops, consultations, data collection, and actual application in fisheries management in their own community fishing grounds [29]. In Indonesia, Articles 17 and 21 of the 2014 amendment to Law No. 27/2007 on the management of coastal areas and small islands respect local community fisher's interest and their customary law [32]. Article 17 of the Wildlife and Aquatic Law of Lao PDR promotes the participation of local community fishers in data collection and surveys [37]. In addition, Section 25 of the Royal Ordinance on Fisheries of the Kingdom of Thailand encourages the contribution of local community fishers in policy formulation [35].

2.3. Small-Scale and/or Data Limited Fisheries

The governance and management of small-scale fisheries must be conducted in accordance with the GSSI standard, considering the data availability and limitations for different types and scales of fisheries [11].

Provisions in the fishery legislations of Cambodia, Indonesia, and the Philippines define different management systems for small-scales fisheries. According to the Cambodian Fisheries Law of 2006, the management system of small-scale fisheries is different from those of medium and large-scale fisheries. Small-scale fishers are not required to obtain fishing licenses and can fish in open access areas year-round (Articles 31, 32, 44, 45, 65, and 95) [28]. In Indonesia, small-scale fishers are legally empowered and the focus is on improving their livelihoods. Small-scale fishers in Indonesia can operate without a fishing license, are exempted from taxes, and can easily obtain loan for their fishing operation and fishery business (Articles 26, 48, and 62) [38]; their capacity is built through training and education (Article 60) [38]. In the Philippines, small and medium commercial fishing vessels are defined to operate in their own zone (Section 18) [34]; small-scale fishers are legitimately given incentives with loans for their business operation and receive capacity building (Section 34) [34]. Nevertheless, fishery management legislations in ASEAN countries do not provide clear statements on the treatment of fisheries with limited data; in particular, the management rules for fisheries with limited scientific data are not always well-established.

2.4. Management Objectives and the Best Available Scientific Evidence

The GSSI standard requires the existence of management objectives and seeks outcomes that are consistent with the long-term sustainable use of fisheries resources [11]. The standard also requires that management objectives consider the best scientific evidence available [11].

Fisheries legislation in Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Singapore, the Philippines, Thailand, and Vietnam promote fisheries data collection and research surveys and the use of the best available scientific information for the decision-making process in fisheries management. Fisheries legislations of Cambodia, Indonesia, Lao PDR, and Thailand encourage the integration of local knowledge of the community fisheries in fisheries management.

The promotion of fisheries data collection and research surveys and the use of the best available scientific information are a characteristic of fisheries legislation in many ASEAN countries. Article 64 of the 2009 Fisheries Order of Brunei Darussalam provides a legal ground for conducting fishery-related scientific research [39]. Similarly, Article 9 of the 2006 Cambodian Law on Fisheries grants legal support to conduct scientific fisheries research, providing basic fisheries information for considering fisheries management practices [24]. Articles 46, 47, and 52 of Fisheries Law No 31/2004

of Indonesia instruct to conduct fisheries research and development by gathering fishery information and statistics [38]. Article 18 of the 2007 Wildlife and Aquatic Law of Lao PDR encourages fisheries research to obtain fishery information and statistics [37]. Articles 6, 19, and 37 of the 1985 Fisheries Act No. 317 of Malaysia promote the use of fishery scientific information in developing management plans for turtles, inland fisheries, marine parks, and marine reserves [40].

Sections 14, 65, and 82 of the 1998 Fisheries Code of the Philippines define the function of institutions and institutional arrangements as collecting fishery data and information and research for management and development. Sections 9 and 12 of the 2015 Royal Ordinance on Fisheries of Thailand make it obligatory for the national government to collect fishery data and update fishery statistics timely using the best scientific information available in fishery management and conservation [35].

Articles 5 and 14 of the 2003 Fisheries Law of Vietnam provide encouragement to conduct fisheries research and fishery resource assessment for policy formulation to ensure sustainable fishery management of Vietnamese fisheries [36]. The Fisheries Act of 2002 in Singapore does not task or provide a legal base to conduct fisheries research; however, Article 25 of the Act presents a condition for scientific research on fisheries [41]. In Myanmar, instead of providing support to fisheries research, Article 17 of the Myanmar Marine Fisheries Law No. 9/90 regulates license holders who wish to conduct fisheries research in the exclusive economic zone of Myanmar [42]. License holders are required to obtain permission before conducting fisheries research in Myanmar waters [42].

In general, fishery resource management in ASEAN countries entails protection of certain endangered species, habitat conservation, closed fishing season, and restrictions on some fishing gears to ensure sustainability of fisheries resources, food security, and livelihood need of the people. Scientific information is essentially used to formulate fishery codes, rules, and regulations. The fishery sector is managed with the responsibility of provincial and local fishery divisions and governments. Fishery management decisions are based on the provisions in the legal framework.

2.5. Management System Compliance

In compliance with the management system, the GSSI standard requires fisheries to be operated according to national and international regulations enforced in an effective manner [11].

Fishery legislations of most ASEAN member states (namely, Brunei Darussalam, Cambodia, Indonesia, Lao PDR., Malaysia, the Philippines, Thailand, and Vietnam) have a law to promote and comply with their national jurisdiction and the implementation of regional and international law and agreement.

At the national level, Brunei Darussalam governs fishing and fisheries research under the provision of the 2009 Fisheries Order and the International Fishery Agreement, of which Brunei Darussalam is a member (No. 17, 18 and 19) [39]. Cambodia strengthens sustainable fishery management through compliance to national policy and the provision of the 2006 Fisheries Law (Article 6) [23]. In addition, Cambodia enforces the management of the aquatic environment in accordance with agreement, conventions, and international treaties in which the nation has participated (Articles 14 and 22) [23]. Indonesia has a legal support for cooperation framework with neighboring countries and regional and international organizations on conservation and development of fishery resources (Article 10) [38]. Lao PDR has a legal policy to promote the implementation of the provision of the 2009 Fisheries Law, agreement and international convention to which Lao PDR is a signatory (Articles 5, 8, 9 and 43) [33]. Malaysia complies mainly with the provision of the 1985 Fisheries Act and the international agreement in which Malaysia is a participant (No. 17) [40]. In the Philippines, fisheries are managed under the provision of the existing laws, rules, and regulation, and in compliance with international agreement, treaties, and conventions to which the Philippines is a signatory (Sections 26, 28, 65, 67, 74, 77, 86, and 119) [34]. Thailand commits to implement fisheries management and conservation in compliance with international laws, obligations, and standards to which Thailand is a signatory (Sections 4, 8, 21, 47, and 104) [35]. Vietnam manages fisheries mainly in accordance with the provision of the 2003 Fisheries Law and the agreement to which Vietnam is a signatory. Articles 1 and 49 of the Vietnamese Fisheries Law

2003 allow foreign fishing vessels to fish or conduct research in their national waters only with authorization and in accordance with the International Fishery Agreement [36].

2.6. Transboundary Stocks

The GSSI standard requires the existence of bilateral, sub-regional, or regional fisheries organization or arrangement, where the fishery stock is transboundary, straddling, or highly migratory stock [11].

As for the management of transboundary stocks, ASEAN countries have multiple bases for regional collaborations. The Southeast Asian Fisheries Development Center (SEAFDEC) is an autonomous inter-governmental body established in 1967; its' mandate is "to develop and manage the fisheries potential of the region through the rational utilization of resources to provide food security and safety to the people and alleviate poverty through transfer of new technologies, research, and information dissemination activities." At the regional level, ASEAN member states have adopted a Joint ASEAN-SEAFDEC Declaration to promote regional fisheries cooperation, including the strengthening of transboundary fishery management in 2016 in Bangkok, Thailand [43]. For the sustainable management of the Mekong River Basin, particularly transboundary fisheries resources, an inter-governmental organization of the four riparian countries (namely, Cambodia, Lao PDR, Thailand, and Vietnam) have jointly signed the agreement for the cooperation of management in 1995 [44].

2.7. Continuous Review

The GSSI standard requires that management measures and their relevant interactions shall be regularly reviewed by considering different uses of inland and marine resources [11].

Fisheries legislations of Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, and Thailand provide legal grounds to continuously review fisheries through regular reporting, consultation meeting with relevant stakeholders or the designated committee, and inspecting fisheries management implementation. The fisheries plan for fisheries management in Cambodia is consulted and reviewed by local and international stakeholders (including FAO), thereby encouraging consistency with the current national fisheries policy, the current status of fisheries, and the best available fisheries scientific information. Article 7 of the Cambodian Fisheries Law 2006 determines that the law enforcement have to be inspected [28]. The implementation of the community fisheries has also to be monitored and evaluated annually (Articles 61 and 62) [28].

Articles 45, 65, and 66 of Law No. 45/2009 Indonesia assign a responsible person and fishing port to monitor the Fisheries Law enforcement [45]. Article 50 of the 2009 Fisheries Law of Lao PDR provides the responsibility of fisheries management and enforcement to a committee comprised of a representative of fishers and local authority at district and provincial level [33]. Section 6 of the 1985 Fisheries Act of Malaysia advises that fisheries shall be continuously reviewed so that it is compatible with the best scientific information available, and the fisheries conservation and management principle [40]. Section 16 of the 1998 Philippine Fisheries Code advises that the management measures of the municipal/city government shall be consulted and reviewed to inspect the consistency with national fisheries policy and this Fisheries Code [34]. Section 5 of the Fisheries Order of Singapore defines that the fisheries activities plan has to be continuously reviewed so that it is consistent with the best scientific information available and the national government policy [41]. Section 24 of the 2015 Fisheries Ordinance of Thailand defines that Fisheries Management Plan shall be established in pursuant to fisheries management approach and current fishing capacity and scientific information [35].

2.8. Ecosystem Structure, Processes, and Function and Endangered Species

The standard requires data and information about the impact of the fishery on ecosystem structure, processes, function and endangered species to be collected and stored in accordance with international standards and practices [11].

Many Articles of fisheries legislations in ASEAN member states, particularly Brunei Darussalam, Cambodia, Lao PDR., Myanmar, Malaysia, Thailand, and the Philippines address the conservation of aquatic resources and protection of fisheries ecosystem. Fish stock enhancement is legally supported by establishing conservation areas and protection of brood stock and the conservation and protection of the ecosystem; in particular, the preservation of endangered species is stated in No. 31(a), 38, and 64(1) of the 2009 Fisheries Order and in the fisheries regulation 2002 of Brunei Darussalam; moreover, in Articles 1, 19, 20, 22–28, 48–52, 57, 76 of the 2006 Law on Fisheries in Cambodia [28]. Article 20 of the Cambodian Fisheries Law define the permitted mesh-size of at least 1.5 cm. The prevention of killing and capturing of endangered, threatened, or extinct species is stated in Article 50 of the Wildlife and Aquatic Law of the Lao PDR., in fisheries regulation 1999 and No. 26 and 61 of the 1985 Fisheries Act of the Government of Malaysia, No. 34 of the Freshwater Fisheries Law 1991 of Myanmar [46], and Section 66 of Royal Ordinance on Fisheries of Thailand [35].

In the Philippines, the fisheries ecosystem and function are maintained and protected by laws for the sustainability of the aquatic resources. A critical habitat or fisheries grounds where fish spawning and breeding is essential, is defined by laws to be designated for protecting and enhancing fish reproduction and growth (Section 81) [34]. Moreover, the capture or trade of a vulnerable and endangered species, particularly the conservation of which is of international importance, is not allowed (Section 11) [20], (Section 102) [47]. Fisheries related activities that may harm the ecosystem and function are not permitted (Sections 97 and 99) [32], (Sections 92 and 94) [48].

2.9. Enhanced Fisheries

According to the GSSI standard, the natural reproductive stock components of enhanced stocks are not overfished and not substantially displaced by stocked components [11].

Cambodia, Indonesia, the Philippines, Thailand, and Vietnam provide a legal basis to support the enhancement of fish stock through fish stocking. The Cambodian fishery legislation promotes the enhancement of wild fish stock through fish releasing events to raise awareness of the importance of fisheries and to encourage fish stocking in a closed waterbody (Article 17) [28]. This fish releasing event is held annually at national and provincial and also community fisheries levels. In Indonesia, the following laws are related to fish stocking: Article 7 of Law No. 45 grants a legal support for improving fish stock in the Indonesian waters [45]; Article 15 of Law No. 31 instructs to control the introduction of fish stock in Indonesian waters [45]; Article 14 of Law No. 45 provides a provision for the development and use of sperm plasma of fish resources in the context of ecosystem conservation and breeding to improve fishery resources in Indonesia [38]. In the Philippines, Section 65 of the 1998 Fisheries Code instructs to conduct research on finding ways to enhance fish stock [47]. Similarly, Section 24 of the Royal Ordinance on Fisheries of Thailand asks the Department of Fisheries to seek approaches for enhancing fisheries management [35]. In addition, Article 8 of the 2003 Vietnamese Fisheries Law encourages the production of fish fry to be released in a natural habitat for enhancing fish stock [36].

2.10. Precautionary Approach

A precautionary approach must be widely practiced to protect and manage aquatic resources and their environment [11]. The precautionary approach can be found in various international legal instruments, for instance, the 1995 Agreement on Fish Stocks in Article 6, and Article 5(c), the Convention on Biological Diversity, the FAO's Guidelines on the Precautionary Approach to Capture Fisheries and Species Introduction, and the Code of Conduct for Responsible Fisheries [49,50]. The precautionary approach recommended by the GSSI fisheries certification standard is addressed only in the 2015 Fisheries Ordinance of Thailand, which suggests that fisheries management measures shall be implemented based on the best available scientific information and in compliance with the combination of precautionary approach to achieve the maximum sustainable yield (Sections 4(5), 12, and 55) [35].

2.11. References Points and Stock Assessment

The GSSI standard requires that the fisheries management objectives of certified fisheries must define the target reference points or proxies for the stock under consideration, based on the best scientific information available [11]. The Target Reference Points (TRP) are defined as the level of fishing mortality which permit a long-term sustainable exploitation of the stocks with the best possible catch [51].

The standard further notes that reference points or proxies must be consistent with the maximum sustainable yield (MSY) [11]. The MSY is widely used in fishery management and stated as a target to achieve in the objectives of the FAO CCRF [50,52]. The CCRF also asks to consider the uncertainties relating to reference points in the implementation of the precaution approach [50].

Support for the application of total allowable catch (TAC) and MSY as a point of reference are addressed in the fisheries legislations of Indonesia, the Philippines, Thailand, and Vietnam. Article 7 of Law No. 45/2009 of Indonesia offers the legal grounds to define the status of fisheries resources and TAC in the fisheries management area of the Indonesian waters [45]. Rule 7.1 of the Philippines 1998 Fisheries Code stipulates the policy support to determine MSY and TAC of major fisheries of the Philippines through stock assessment [47]. In addition, Section 8 of the Philippines 1998 Fisheries Code asks to define TAC or catch ceiling limit at a specified time and area [47]. Section 30 of the Royal Ordinance on Fisheries of Thailand suggests a task to identify the points of reference for sustainable fisheries management [35]. In Vietnam, the application of TAC is stated in Articles 11(1) and 14 of the 2003 Fisheries Law [36]. Instead of determining the TAC or catch limit, Section 13(6) of the 1985 Fisheries Act of Malaysia asks to define the fishing effort [40].

Table 2. Status of ASEAN Fishery legislations.

Names of Countries	Provisions of ASEAN Fishery Legislations Support the Requirements of GSSI
	2.1. Management organization:
Cambodia	-Establishment of community fisheries (Article 1) [27] -The rights, roles, and responsibility of a community fisheries organization to participate in fisheries conservation and management 62 [14], (Article 13) [15] and (Article 19) [30] -Working plan (Article 28) [29] -Follow up and monitor the community fisheries (Article 23) [29] -Facilitate the implementation process, assistance and capacity building to the communities (Article 23) [29]
Indonesia	-Strengthening community fisheries, Regulation No. 2/PERMEN-KP/2013 [31] -Participate in the management of fisheries resources (Article 60) [32] -Traditional culture and fishers' interests (Article 17 and 60) [32] -Participate in law enforcement (Article 60) [32]
Laos PDR	-Establish fisher communities (Article 48) [33] -Roles and responsibilities (Article 48) [33] -Right to participate in fisheries management (Article 51) [33] -Respect their local tradition and culture (Article 28) [33] -The fisheries management organization established at provincial and district levels (Article 43) [33] -Participate in research surveys and the policy formulation process (Article 17) [33]
Philippines	-Allows the community fishers to establish a fisheries management advisory body at the local level with assistance of local non-governmental organizations and other concerned agencies (Section 69) [34] -Comments and suggestions concerning fisheries management at local and national levels (Section 70) [34] -Capacity building to community fishers (Section 24) [34]
Thailand	-Royal Ordinance on Fisheries permits community fishers and encourages other stakeholders to participate in fisheries management, conservation, and utilization (Sections 8, 12 and 25) [35] -Local community fishers receive support and capacity building from the government (Section 25) [35]
Vietnam	-Participate in fisheries monitoring, enforcement and conflict resolution [36] -The fisheries are authorized to be managed by local authority (Article 15(3)) [36]
	2.2. Participatory management
Cambodia	-Local experiences and local knowledge (Article 20) [29]
Indonesia	-Respect local community fishers' interest and their customary law (Articles 17 and 21) [32]

Lao PDR	-The participation of local community fishers in data collection and surveys (Article 17) [37] -Encourages the contribution of local community fishers in policy formulation (Section 25) [35]
2.3. Small-scale and/or data limited fisheries	
Cambodia	-Small-scale fishers are not required to obtain fishing license and can fish in open access areas year-round (Articles 31, 32, 44, 45, 65, and 95) [28]
Indonesia	-Operate without a fishing license, no taxes, and easily obtained loan (Articles 26, 48, and 62) [38]; -Their capacity, training and education (Article 60) [38]
Philippines	-Fishing zonation (Section 18) [34]; -Incentives with loans and receive capacity building (Section 34) [34].
2.4. Management objectives and the best available scientific evidence	
Brunei Darussalam	-Legal ground for conducting fishery-related scientific research (Article 64) [39]
Cambodia	-Legal support to conduct scientific fisheries research (Article 9) [29]
Indonesia	-Fisheries research and development, information and statistics (Articles 46, 47, and 52) [38]
Lao PDR	-Fisheries research, fishery information and statistics (Article 18) [37]
Malaysia	-Fishery scientific information (Articles 6, 19, and 37) [40]
	-Collect fishery data and information and research (Sections 14, 65, and 82) [48]
Thailand	-Collect fishery data, statistics, best scientific information (Sections 9 and 12) [35]
Vietnam	-Fisheries research and fishery resource assessment for policy formulation (Articles 5 and 14) [36]
Singapore	-A condition for scientific research on fisheries (Article 25) [41]
Myanmar	-Required to obtain permission before conducting fisheries research (Article 17) [42]
2.5. Management system compliance	
Brunei Darussalam	-The 2009 Fisheries Order and the International Fishery Agreement (No. 17, 18 and 19) [39]
Cambodia	-Compliance to national policy and the provision of the 2006 Fisheries Law (Article 6) [28] -Agreement, conventions, and international treaties (Articles 14 and 22) [28]
Indonesia	-Cooperation framework with neighboring countries and regional and international organizations (Article 10) [38]
Lao PDR	-2009 Fisheries Law, agreement and international convention (Articles 5, 8, 9, and 43) [33]
Malaysia	-Provision of the 1985 Fisheries Act and the international agreement (No. 17) [40]
The Philippines	-The provision of the existing laws, rules, and regulation, and in compliance with international agreement, treaties, and conventions (Sections 26, 28, 65, 67, 74, 77, 86, and 119) [34]
Thailand	-International laws, obligations, and standards (Sections 4, 8, 21, 47, and 104) [35]
Vietnam	-The provision and the agreement of the Vietnamese Fisheries Law 2003, International Fishery Agreement (Articles 1 and 49) [36]
2.6. Transboundary stocks	
ASEAN	-Joint ASEAN-SEAFDEC Declaration to strengthen transboundary fishery management [43]
Four Riparian Mekong countries	-The agreement for the cooperation of management in 1995 [44]
2.7. Continuous review	
Cambodia	-Law enforcement (Article 7) [28] -Monitor and evaluate community fisheries annually (Articles 61 and 62) [28]
Indonesia	-Monitor the Fisheries Law enforcement (Articles 45, 65, and 66) [45]
Lao PDR	-The responsibility of fisheries management and enforcement (Article 50) [33]
Malaysia	-Fisheries continuously reviewed (Section 6) [40]
Philippine	-Consult and review to inspect the consistency (Section 16) [34]
Singapore	-Continuously review to check consistency (Section 5) [41]
Thailand	-Pursuant to fisheries management approach and current fishing capacity (Section 24) [35]
2.8. Ecosystem structure, processes, function and endangered species	
Brunei Darussalam	-Preservation of endangered species (No. 31(a), 38, and 64(1) [39]
Cambodia	-Species preservation (Articles 1, 19, 20, 22–28, 48–52, 57, 76) [28]
Lao PDR	-The prevention of killing and capturing of endangered, threatened, or extinct species (Article 50) [37]
Malaysia	-Fisheries regulation 1999 and (No. 26 and 61) [40]
Myanmar	-No. 34 of Freshwater Fisheries Law 1991 [46]
Thailand	-Section 66 of Royal Ordinance on Fisheries [35]
Philippines	-Fisheries ecosystem and function (Section 81) [34] -Trade of a vulnerable and endangered species (Section 11) [34] and (Section 102) [47] -The ecosystem and function (Sections 97 and 99) [47] and (Sections 92 and 94) [48]
2.9. Enhanced fisheries	
Cambodia	-The enhancement of wild fish stock through fish releasing (Article 17) [28]
Indonesia	-Fish stocking, (Article 7) [45] -Control the introduction of fish stock (Article 15) [45];

	-Development and use of sperm plasma of fish resources in the context of ecosystem conservation and breeding (Article 14) [38]
The Philippines	-Enhance fish stock (Section 65) [47]
Thailand	-Approaches for enhancing fisheries management (Section 24) [35]
Vietnam	-Fish fry released in a natural habitat for enhancing fish stock (Article 8) [36]
	2.10. Precautionary approach
Thailand	-Fisheries management measures and precautionary approach to achieve the maximum sustainable yield (Sections 4(5), 12, and 55) [35]
	2.11. References points and stock assessment
Indonesia	-Legal ground to define the status of fisheries resources and TAC in the fisheries management (Article 7) [45]
the Philippines	-Policy support to determine MSY, TAC and stock assessment (Rule 7.1) [47] -Define TAC or catch ceiling limit (Section 8) [47]
Thailand	-Points of reference for sustainable fisheries management (Section 30) [35]
Vietnam	-The application of TAC (Articles 11(1) and 14) [36]
Malaysia	-Define the fishing effort (Section 13(6)) [40]

3. Discussions

3.1. Potentials and Current Gaps of ASEAN Fisheries to Meet the Requirements of GSSI

The above review reveals that the legal frameworks in ASEAN member states generally provide a fair basis for their fisheries to meet the requirement of the GSSI fisheries certification standards. Fisheries legislation is an essential foundation for the future establishment of ecolabelling in ASEAN countries. Evidence suggests that the fisheries legal framework is important for meeting the MSC fisheries certification standard [53]. Therefore, ASEAN fisheries have a fair potential to meet the requirements provided by the GSSI standards. At the same time, several gaps can be identified through the above reviews between the existing ASEAN legal frameworks and the GSSI requirements. As noted in the previous section, "precautionary approach" is not clearly mentioned in most of the legal frameworks in ASEAN countries. Furthermore, no specific provisions on "adaptive management" in fisheries were found in the legal systems for ASEAN member states.

In addition, "reference points on fisheries management objectives" that are consistent with MSY can be another problematic requirement for ASEAN fisheries. As noted above, the fisheries legislations of only four ASEAN countries (Indonesia, the Philippines, Thailand, and Vietnam) provide support in the application of TAC and MSY. Setting TAC based on MSY or equivalent prefixed reference points would be generally difficult for many ASEAN fisheries that are characterized as fisheries targeting multi-species using small boats. Moreover, insufficient number of scientists and lack of resources to calculate TAC or MSY for a wide variety of local fish species could be a limiting factor; many small boats and landing locations could make it difficult for management authorities to provide sufficient enforcement activities to cover them.

Eliminating these gaps through the efforts of local fisheries management bodies is one option to cope with this situation. Many ASEAN countries encourages participatory managements. If the resource users find incentives to introduce a higher level of management measures, the potential for receiving ecolabelling certification under the GSSI recognition would become higher. The past experiences show that many ecolabelling fisheries were established with an initiation of local communities, fishery associations, fish distributors, whole sellers, and fish retailers with support from NGOs [18,54]. Thus, there is a realistic chance of eliminating gaps for ASEAN fisheries.

A strong political will to modify the existing legal framework would be another option to eliminate the gaps between existing ASEAN legal frameworks and the requirements of GSSI. Although the participation in the ecolabelling scheme is on a voluntary basis [55,56], the possibility of its establishment in ASEAN countries could depends on fishery policies and government positions on whether to include it as a strategy for the sustainable management of fisheries. The roles and responsibility of a fisheries management authority have been stipulated in fishery jurisdiction. The ASEAN governments so far have promoted the implementation of the FAO CCRF in the ASEAN region. ASEAN Sectoral Working Group on Fisheries (ASWGFi) was formulated under the ASEAN

community; it meets at least once a year to discuss common fisheries issues and the strategic planning framework. SEAFDEC provides critical support in capacity building and technical assistance to ASEAN fisheries management and development. Thus, both ASWGFi and SEAFDEC play essential roles in facilitating and supporting ASEAN fisheries management. Concerted actions by ASEAN political leaders can further advance the possibility for their fisheries to receive ecolabelling certifications that are recognized by GSSI.

3.2. Cost and Benefit for ASEAN Fisheries to Receive Certification Based on GSSI Standard

Potential benefits for fisheries in ASEAN countries are discussed with respect to the relevance of GSSI standards on the following three aspects: Economic, social, and environmental aspects.

First, in the economic aspect, an advantage of ecolabelling is that it can introduce a price premium of the labeled products in the market. When the benefit of price premium is properly transferred from retailers to producers, it can be a source of finance to be used for sustainable fisheries management. A study on price premium for certified Alaska Pollock products in the UK seafood market shows that the premium provides fishery producers an incentive for sustainable fishing practices [56]. If proper arrangement and implementation are carried out, this certified fishery will provide a sustainable funding source to community fishers for managing fishery resources at the community level. The community fisheries established in ASEAN countries would provide participation opportunities to community fishers in responsible fishing practices. It is widely known that the participation of fishers in responsible fishery co-management is one of the key components for successful management in fisheries. The previous barrier in community participation is a lack of funding and incentives for implementing their activity plan. Ecolabelling can be a tool for attaining sustainable finance in community fisheries. Most small-scale fisheries gain no incentives from price premium in ecolabelling practices [16]. About 90–95% of small-scale fish catch are consumed locally [7]. Small-scale fisheries are also important for the international market [7]. FAO has introduced Voluntary Guidelines to promote small-scale fisheries to increase its important role to contribute nutritional food to local, national and international markets, a valuable source of income and employment in the sector [7]. In this context, certified fisheries may get the opportunity to access to international markets, particularly the European markets [18,54]. On the contrary, developing countries are skeptical that the fisheries ecolabels may limit market access for their fisheries [54]. The markets may be defined by consumer preference. A number of studies have shown that consumers preferred ecolabelled seafood such as Roheim et al. (2011) [56], Johnston et al. (2001) [57], Jaffry et al. (2004) [58], Johnston and Roheim (2006) [59], Brecard et al. (2009) [60] and Salladarre et al. (2010) [61].

Second, regarding the social elements of fishery management, many provisions of ASEAN fishery legislations support an establishment of community fishers or fisher associations. Most fishery legislations of ASEAN countries allow cooperation and participation of fishers in fishery research and surveys, including the integration of local fisher knowledge and experiences. Local fishers' ecological knowledge is an important practical information input in planning fishery management action [57–62]. Cooperation and assistance in fishery research, as well as partnership, enable fishers to better understand research results and assessment needs. Social participation is an important factor influencing the success of natural resource management [63]. This was seen in the case of the fishing cooperatives in Baja California Sur, Mexico, Fogo Island in the Canadian Province of Newfoundland and Labrador (NL) [64], and the red rock lobster MSC certified fishery in Mexico, the first MSC certified community-based fishery in a developing country [65]. In addition, the experiences of the lobster MSC certified fishery provide participation incentives, such as sharing a profit, decision-making, and rural community development [65].

The study on the red lobster fisheries in Mexico reveals that after receiving the MSC certification, the fisheries gained international recognition, negotiation power for government support, autonomous operation, and good relationship with local authority [65]. The study on stakeholders' perceptions and lessons learned from the MSC certified fisheries in Argentina suggests that the MSC certified fisheries has increased participation in implementing a bottom-up action plan and knowledge distribution among relevant stakeholders [66]. The positive changes brought by fisheries

certification are support in promoting community fisheries development and management in ASEAN countries.

Third, in the environmental aspect, a study on the improvement of the environment through fisheries certification [66] indicates that a single fisheries certification has marginal impact on the overall condition of the fisheries environment. The MSC was formulated in 1997 [17], and by December 2016, 306 of 389 fisheries that participated in the program have been certified [67]. In the ASEAN region, Ben Tre clam in Vietnam, Vietnam Blue Swimming Crab, Indonesian Pole and Line Tuna, and Indonesia Tuna were certified by the MSC. These fisheries target specific species. The other MSC certified fisheries are MEL-Japan, and the Indian clam fishery.

However, obtaining fishery certification involves costs. Foreign experiences indicate the requirement of high expertise, skill, capacity, and associated costs for the establishment and implementation of ecolabelling in fisheries. Ecolabelling in fisheries was implemented in Africa, the Nordic countries, Australia, and Japan. The experiences of MSC certified fisheries suggested several challenges in the establishment and implementation of fisheries certification [55]. The actual situation of ASEAN fisheries is that it is complex with multi-species, multi-types of fishing gear, and many landing sites [38,68,69]; moreover, a majority of small-scale fisheries involve transboundary fisheries management. Most fishers belong to the low-income group; they find it difficult to pay the fishery certification costs [53,69]. This is true for not only ASEAN fisheries, but also Japanese fisheries [18] and the shrimp exploitation co-op at Fogo Island, Canada [64]. It is also reported that even for Tungkang sergestid shrimp fisheries, which is regarded as a well-managed fishery in Taiwan, MSC ecolabelling may not yield benefits because of the potential high cost associated with the MSC certification [70]. Likewise, small-scale fisheries in many countries can hardly afford to pay for the certification process [16]. In some cases, fishers may receive support from NGOs or governments [38,53]; for instance, the Cambodian fishery legislation permits community fisheries to receive funds from governments, NGOs, charity, and other donors [29].

4. Conclusions

This study examined the fisheries laws and other relevant information in ASEAN member nations to identify current gaps between their existing legal frameworks and the GSSI benchmark requirements. The fishery legislation of ASEAN countries has fulfilled most of the GSSI requirements. The legislation allows an establishment of local fishery organization by local community, community fishers or fishery association and local authority with the support of NGOs and research institutions. The government has the function to coordinate, advise, and provide technical support to local fishery organizations.

The legislation provides direction to ensure optimal use of the available scientific information in fisheries management as well as local and traditional fisheries knowledge. Many Articles in the ASEAN fishery legislation addresses the conservation and protection of endangered species, fishery enhancement, and ecosystem protection. Transboundary fish stock is managed under the ASEAN-SEAFDEC fishery agreement for marine fisheries and under the 1995 Mekong Agreement for the management of water resource and fisheries among the Mekong Riparian Countries, namely Cambodia, Lao PDR, Thailand, and Vietnam.

Although some gaps are identified between the ASEAN fisheries legislation and the requirement of the GSSI benchmark tool, eliminating these gaps through the efforts of local fisheries management bodies and political wills of ASEAN leaders can be plausible options. The scientific information on fisheries and fishery management shall be updated for some of the fisheries, and the need for technical supports from experts in this area.

Author Contributions: Conceptualization, S.L.; methodology, S.L.; software, S.L.; validation, N.Y. and H.I.; formal analysis, S.L.; investigation, S.L.; resources, S.L. and N.Y.; data curation, S.L.; writing—original draft preparation, S.L.; writing—review and editing, S.L., N.Y. and H.I.; visualization, S.L.; supervision, N.Y.; project administration, N.Y.; funding acquisition, N.Y.

Funding: This work was supported by the Special Scheme Project on International and Domestic Research Network Utilization (the National Agriculture and Food Research Organization, Japan) [grant number 16802899].

Conflicts of Interest: The authors declare no conflict of interest.

References

1. FAO. Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication. 2015. Available online: http://www.fao.org/docrep/field/003/ab825f/AB825F00.htm#TOC (accessed on 27 July 2018).
2. FAO. Small-Scale Fisheries, Food Agriculture Organization United Nations. 2015; p. 4. Available online: http://www.fao.org/3/a-au832e.pdf (accessed on 1 September 2017).
3. *Fishery Statistics Summary 2014*; The Southeast Asian Fisheries Development Center: Bangkok, Thailand, 2014. Available online: http://www.seafdec.org/fishstat2014/ (accessed on 29 October 2017).
4. *State of World Fisheries and Aquaculture*; Food and Agriculture Organization: Rome, Italy, 2016. Available online: http://www.fao.org/3/a-i5555e.pdf (accessed on 20 June 2017).
5. *Southeast Asian State of Fisheries and Aquaculture (SEASOFIA)*; The Southeast Asian Fisheries Development Center: Bangkok, Thailand, 2017. Available online: http://www.seafdec.org/documents/49cm_wp06-3.pdf (accessed on 22 May 2017).
6. *Small-Scale Fisheries in Southeast Asia: A Case Study in Southern Thailand*; Food and Agriculture Organization: Rome, Italy, 2001. Available online: http://www.fao.org/3/a-ab384e.pdf (accessed on 8 May 2017).
7. Duggan, D.E.; Kochen, M. Small in scale but big in potential: Opportunities and challenges for fisheries certification of Indonesian small-scale tuna fisheries. *Mar. Policy* **2016**, *67*, 30–39.
8. SEAFDEC. *Fishery Statistical Bulletin of Southeast Asia 2015*; Southeast Asian Fisheries Development Center (SEAFDEC): Bangkok, Thailand, 2017. Available online: http://www.seafdec.org/download/fishery-statistical-bulletin-of-southeast-asia-2015/ (accessed on 29 June 2018).
9. Kurien, J. Behind the Label: Are Eco-Labels the Answer to Sustainable Fishing? Available online: https://newint.org/features/2000/07/05/label (accessed on 29 October 2017).
10. Lieng, S.; Yagi, N.; Mori, A.; Hastings, J.D. Savings Group Improvements Contribute to Sustainable Community Fisheries Management: A Case Study in Cambodia. *Sustainability* **2018**, *10*, 2905, doi:10.3390/su10082905.
11. Global Sustainable Seafood Initiative (GSSI). Available online: http://www.ourgssi.org/benchmarking/the-global-benchmark-tool/ (accessed on 29 October 2017).
12. Annual Surveillance Report February 2018 of Vietnam's Ben Tre Hand-Gathered Clam Fishery. Available online: https://fisheries.msc.org/en/fisheries/vietnam-ben-tre-clam-hand-gathered/@@assessments (accessed on 24 September 2018).
13. Wilkings, A. Fisheries and Aquaculture Certification: Implications for Southeast Asia. Available online: https://melissamarschke.files.wordpress.com/2012/02/certification-final-aug-2012.pdf (accessed on 28 March 2018).
14. New. The Vietnam Blue Swimming Crab. Available online: http://www.committedtocrab.org/projects/vietnam/ (accessed on 24 September 2018).
15. Blasiak, R.; Hsiang-Wen Huang, J.; Ishihara, H.; Kelling, I.; Lieng, S.; Lindoff, H.; Macfarlane, A.; Minohara, A.; Miyakoshi, Y.; Wisse, H.; et al. Promoting diversity and inclusiveness in seafood certification and ecolabelling: Prospects for Asia. *Mar. Policy* **2017**, *85*, 42–47.
16. Swartz, W.; Schiller, L.; Sumaila, U.R.; Ota, Y. Searching for market-based sustainability pathways: Challenges and opportunities for seafood certification programs in Japan. *Mar. Policy* **2017**, *76*, 185–191.
17. Agnew, D.J.; Gutierrez, N.L.; Stern-Pirlot, A.; Hoggarth, D.D. The MSC experience: Developing an operational certification standard and a market incentive to improve fishery sustainability. *ICES J. Mar. Sci.* **2014**, *71*, 216–225.
18. Davy, T.; Paul Chh Keothyda, K. *Situation of Marine Fisheries and the Establishment of Fishing Communities*; Parliamentary Institute of Cambodia: Phnom Penh, Cambodia, 2017; 11p.
19. MSC. MSC Fisheries Certification Requirements and Guidance. In Proceedings of the 11th Meeting of the ASCOBANS Jastarnia Group Stralsund, Germany, 10–12 March 2015; 12p.

20. Pomeroy, R.; Nguyen, K.A.T.; Thong, H.X. Small-Scale marine fisheries policy in Vietnam. *Mar. Policy* **2009**, *33*, 419–428.
21. Wakamatsu, M.; Wakamatsu, H. The certification of small-scale fisheries. *Mar. Policy* **2017**, *77*, 97–103.
22. Sok, S.; Yu, X.; Wong, K.K. Impediments to community fisheries management: Some findings in Kompong Pou commune, Krakor District in Cambodia's Tonle Sap. *Singap. J. Trop. Geogr.* **2012**, *33*, 398–413.
23. Royal Decree on the Establishment of Community Fisheries. Royal Government of Cambodia, 2005. Available online: https://www.learninginstitute.org/cambodian-laws-legislations/ (accessed on 21 August 2018).
24. Sebastian Mathew. *The Costs of Certification*; ICSF (International Collective in Support of Fishworkers): Chennai, India, 2011. Available online: http://base.d-p-h.info/en/fiches/dph/fiche-dph-8787.html (accessed on 28 September 2018).
25. De Graaf, G.J.; Grainger, R.J.R.; Westlund, L.; Willmann, R.; Mills, D.; Kelleher, K.; Koranteng, K. The status of routine fishery data collection in Southeast Asia, central America, the South Pacific, and West Africa, with special reference to small-scale fisheries. *ICES J. Mar. Sci.* **2011**, *68*, 1743–1750.
26. Law on Fisheries. Royal Government of Cambodia. 2006. Available online: http://extwprlegs1.fao.org/docs/pdf/cam82001.pdf (accessed on 6 December 2016)
27. Estepa, N.; Srey, S.; Lay, R.; Theang, V.; Kuch, P.; Khun, S.; Johnstone, G.; Poulin, P.; Ouch, K.; Simpson, V.; et al. *Trends, Opportunities and Constraints in the Contribution of Fish to the Welfare of Rural Communities in Cambodia*; Inland Fisheries Research and Development Institute (Fisheries Administration) and WorldFish: Phnom Penh, Cambodia, 2016; 34p.
28. Royal Government of Cambodia. Sub–Decree on Community Fisheries. No 25 OrNor Kror BorKor. 2005. Available online: https://www.ajne.org/sites/default/files/resource/laws/7210/sub-decree-80-on-community-fisheries-management.pdf (accessed on 16 August 2018).
29. *Prakas on Guidelines for Community Fisheries No 316 ProrKor KorSorKo*; Royal Government of Cambodia, Phnom Penh, Cambodia, 2007.
30. Guideline for Implementation of National Program on Empowerment of Independent Community of Marine and Fisheries No 2/PERMEN-KP/2013, Republic of Indonesia. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC128881/ (accessed on 29 October 2017).
31. Law No. 1/2014 Amending Law No. 27/2007 on the Management of Coastal Area and Isles, Republic of Indonesia. Available online: http://extwprlegs1.fao.org/docs/pdf/ins139269.pdf (accessed on 29 October 2017).
32. Fisheries Law No. 03/NA, Lao People's Democratic Republic. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC139169/ (accessed on 20 October 2017).
33. Philippine Fisheries Code of 1998 (Republic Act No. 8550), Republic of The Philippines. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC016098/ (accessed on 20 April 2017).
34. Royal Ordinance on Fisheries, B.E. 2558, Kingdom of Thailand. Available Online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC159730/ (accessed on 15 April 2017).
35. Fisheries Law No. 17/2003, Socialist Republic of Vietnam. Available Online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC040534/ (accessed on 15 April 2017).
36. Cadima, E.L. *Fish Stock Assessment Manual, FAO Fisheries Technical Paper 393*; Food Agriculture Organization United Nations: Rome, Italy, 2003; 200p. Available online: http://www.fao.org/docrep/006/X8498E/x8498e00.htm#Contents (accessed on 29 September 2018).
37. Wildlife and Aquatic Law, Lao People's Democratic Republic. Available online: https://www.ecolex.org/details/legislation/wildlife-and-aquatic-resources-law-no-07na-lex-faoc089478/ (accessed on 20 October 2017).
38. Fishery Law No. 31/2004 dated October 6, Republic of Indonesia, 2004. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC051065/ (accessed on 29 March 2017).
39. Fisheries Order, 2009, Brunei Darussalam. Available online: http://extwprlegs1.fao.org/docs/pdf/bru91888.pdf (accessed on 9 April 2017).
40. Fisheries Act 317, Government of Malaysia, 1985. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC001869/ (accessed on 29 March 2017).
41. Fisheries Act (No. 14 of 1966), Republic of Singapore. Available Online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC046830/ (accessed on 4 May 2017).

42. Myanmar Marine Fisheries Law 1990, Union of Myanmar. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC003461/ (accessed on 8 May 2017).
43. *Joint ASEAN-SEAFDEC Declaration on Regional Cooperation for Combating Illegal, Unreported and Unregulated (IUU) Fishing and Enhancing the Competitiveness of ASEAN Fish and Fishery Products*; Southeast Asian Fisheries Development Center: Bangkok, Thailand. Available online: http://www.seafdec.org/documents/hlc-joint-declaration.pdf (accessed on 1 June 2017).
44. Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, Mekong River Commission Secretariat, Vientiane, Lao PDR. Available online: http://www.mrcmekong.org/assets/Publications/policies/agreement-Apr95.pdf (accessed on 14 May 2017).
45. Law No. 45/2009 Amending Law No. 31/2004 Concerning Fishery, Republic of Indonesia. Available online: http://www.fao.org/faolex/results/details/en/c/LEX-FAOC097600/ (accessed on 5 May 2017).
46. The State Law and Order Restoration Council Law No 1/91, Freshwater Fisheries Law, Union of Myanmar. Available online: http://www.burmalibrary.org/docs15/1991-SLORC_Law1991-01-Freshwater_Fisheries_Law-en.pdf (accessed on 1 October 2018).
47. Republic Act No. 10654 Amending Philippine Fisheries Code of 1998, Republic of the Philippines. Available online: http://extwprlegs1.fao.org/docs/pdf/phi153082.pdf (accessed on 19 May 2017).
48. Implementing Rules and Regulations of the Philippine Fisheries Code of 1998 (Administrative Order No. 3 of 1998 of the Department of Agriculture), Republic of the Philippines, 1998. Available online: http://extwprlegs1.fao.org/docs/pdf/phi19575.pdf (accessed on 18 May 2017).
49. Towards Global Sustainable Fisheries the Opportunity for Transition, The Prince's Charities' International Sustainability Unit. 2012. Available online: https://www.pcfisu.org/wp-content/uploads/2012/01/ISUMarineprogramme-towards-global-sustainable-fisheries.pdf (accessed on 3 July 2017).
50. The Rio Declaration: Principle 15—The Precautionary Approach. Available online: https://www.gdrc.org/u-gov/precaution-7.html (accessed on 29 September 2018).
51. *Code of Conduct for Responsible Fisheries*; Food Agric. Organization United Nations: Rome, Italy, 2011. Available online: http://www.fao.org/3/a-v9878e/index.html (accessed on 3 March 2017).
52. Pérez-Ramírez, M.; Phillips, B.; Lluch-Belda, D.; Lluch-Cota, S. Perspectives for implementing fisheries certification in developing countries. *Mar. Policy* **2012**, *36*, 297–302.
53. Marine Eco-label Japan Established, ISARIBI No. 57. Available online: http://www.suisankai.or.jp/topics_e/isaribi/isaribi_57.pdf (accessed on 4 April 2017).
54. Gulbrandsen, L.H. The emergence and effectiveness of the Marine Stewardship Council. *Mar. Policy* **2009**, *33*, 654–660.
55. *Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries*; Food and Agriculture Organization of the United Nations: Rome, Italy, 2009. Available online: http://www.fao.org/docrep/012/i1119t/i1119t.pdf (accessed on 2 February 2017).
56. Roheim, C.A.; Asche, F.; Santos, J.I. The elusive price premium for ecolabelled products: Evidence from seafood in the UK market. *J. Agric. Econ.* **2011**, *62*, 655–668.
57. Johnston, R.J.; Roheim Wessells, C.; Donath, H.; Asche, F. Measuring consumer preferences for ecolabeled seafood: An international comparison. *J. Agric. Resour. Econ.* **2001**, *26*, 20–39.
58. Jaffry, S.; Pickering, H.; Ghulam, Y.; Whitmarsh, D.; Wattage, P. Consumer choices for quality and sustainability labelled seafood products in the UK. *Food Policy* **2004**, *29*, 215–228.
59. Johnston, R.J.; Roheim, C.A. A battle of taste and environmental convictions for ecolabeled seafood: A contingent ranking experiment. *J. Agric. Resour. Econ.* **2006**, *31*, 283–300.
60. Brécard, D.; Hlaimi, B.; Lucas, S.; Perraudeau, Y.; Salladarré, F. Determinants of demand for green products: An application to ecolabel demand for fish in Europe. *Ecol. Econ.* **2009**, *69*, 115–125.
61. Salladarré, F.; Guillotreau, P.; Perreudeau, Y.; Monfort, M.C. The demand for seafood ecolabels in France. *J. Agric. Food Ind. Organ.* **2010**, *8*. Available online: http://www.bepress.com/jafio/vol8/iss1/art10 (accessed on 1 October 2017).
62. Johannes, R.E.; Freeman, M.; Hamilton, R.J. Ignore fishers' knowledge and miss the boat. *Fish Fish.* **2000**, *1*, 257–271.
63. Torres-Guevara, L.E.; Lopez, M.C.; Schlüter, A. Understanding artisanal fishers' behaviors: The case of Ciénaga Grande de Santa Marta, Colombia. *Sustainability* **2016**, *8*, 549.

64. Foley, P.; McCay, B. Certifying the commons: Eco-certification, privatization, and collective action. *Ecol. Soc.* **2014**, *19*, 28, doi:10.5751/ES-06459-190228.
65. Pérez-Ramírez, M.; Ponce-Díaz, G.; Lluch-Cota, S. The role of MSC certification in the empowerment of fishing cooperatives in Mexico: The case of red rock lobster co-managed fishery. *Ocean Coast. Manag.* **2012**, *63*, 24–29.
66. Pérez-Ramírez, M.; Lluch-Cota, S.; Lasta, M. MSC certification in Argentina: Stakeholders' perceptions and lessons learned. *Mar. Policy* **2012**, *36*, 1182–1187.
67. Tlusty, M.F. Environmental improvement of seafood through certification and ecolabelling: Theory and analysis. *Fish Fish.* **2012**, *13*, 1–13.
68. Gardiner, P.R.; Viswanathan, K.K. Ecolabelling and Fisheries Management. *World Fish Cent. Stud. Rev.* **2004**, *27*, 1–43. Available online: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.199.8482&rep=rep1&type=pdf (accessed on 20 October 2017).
69. Sainsbury, K. Review of Guidelines for Ecolabelling of Fish and Products from Capture Fisheries, and Recommended Minimum Substantive Requirements. In Proceedings of the Expert Consultation on Eco-labelling Guidelines for Fish and Fishery Products, Rome, Italy, 3–5 March 2008.
70. Wang, Y.S.; Chang, S.K. Is MSC eco-labelling workable in Taiwan? Responses from various sectors of the Taiwanese sergestid shrimp fishery. *Mar. Policy* **2017**, *77*, 164–170.