Perspectives for implementing fisheries certification in developing countries

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ABSTRACT

This paper discusses the future of the Marine Stewardship Council (MSC), a market-based certification program, in developing countries and exposes the challenges and opportunities for fish producers. The MSC needs to attract the interest of more fishing enterprises from these regions to increase its global presence. Because most fisheries in developing countries cannot meet the MSC standards, or afford the certification process costs, we suggest that there is a need for developing different levels within the MSC system and additional third-party assessing organizations. MSC certification may mean adoption of improvements in fisheries management and approving fishing regimes in developing countries. However, post-certification benefits may decrease as more fisheries become certified.

Keywords: fisheries, MSC certification, developing countries, eco-labeled seafood, certification levels

1. Introduction

The latest FAO State of World Fisheries and Aquaculture report [1] states that half the fish stocks are fully exploited and 30% is either overexploited or depleted. Several mechanisms have been introduced by governments at the national, regional, and international levels to face sustainability. However, and in spite of some cases of success [2], the results of those initiatives remain modest and frequently criticized for their pitfalls [3, 4], including the lack of individual and collective incentives [2]. Market based approaches, such as fishery certification and seafood eco-labeling, have emerged as an independent and private policy, developed by nongovernmental organizations (NGOs) in association with industrial or commercial enterprises in fisheries. They promote and reward sustainable fishing through economic incentives, encouraging producers to meet prescriptive standards, and consumers to choose products supplied by them.

Today, certification created by the Marine Stewardship Council (MSC) is the most widely used, with 104 certified fisheries accounting for about 7% of the global catch, and 144 are under assessment [5]. MSC was founded in 1996 by WWF and Unilever, based on the Forest Stewardship Council model. Since 1999, it has been independent of financial contributions from its founding members. The MSC standard consists of three Principles: (1) Matters relating to the target species, (2) Ecological and environmental impact of the fishery, and (3) Management systems with which the fishery operates [6]. Recent research has revealed contrasting opinions about the MSC certification process; on one hand considered the most stringent and transparent [7], but on the other, the process and standards have been strongly criticized because the same evaluation methodology for fisheries in developed and developing countries is used [8] and its failures to protect the marine environment [9]. Certification involves an elaborate process of third-parties in a confidential phase (pre-assessment) when opportunities to meet the standard are defined. The second stage is a full assessment with involves input from stakeholders and open public consultation. If the fishery meets

the standard, its user becomes certified and it can use MSC's eco-label. To ensure that the MSC eco-label is displayed only on fish products from certified fisheries, there is the chain of custody certification. Fishery certification lasts five years, but the chain of custody certification lasts three years. Both are subject to annual audits.

The MSC has faced several criticisms regarding the existence of a bias towards developed countries and industrial fisheries [10] and using the same assessment methodology for fisheries in developed and developing countries [8]. Even though the number of fisheries certified by the MSC has grown in recent years (Figure 1), few fisheries in developing countries have been certified and there is considerable debate about whether economic benefits from the certification will reach small fisheries communities. Developing countries harvest almost half of the world fish catch, mostly shipped to markets in developed regions. Their fisheries are mostly aimed at meeting national needs for food security and usually comply with fish management schemes. Many fishermen in developing countries often consider certification and eco-labeling as a strategy for marketing their products in developed countries, because they worry about the lack of MSC eco-label becoming a trade barrier [11–13] because all seafood products are now sold to a global market place that is becoming increasingly concerned with eco-labeled products, hence certification offers fish producers access to specific niche markets. Some retailers that sell eco-labeled seafood are Carrefour, Tesco, Sainsbury's and Wal-Mart; nevertheless, consumer participation remains limited. For these reasons, MSC needs to attract more fisheries from developing countries to increase its credibility and acceptance. This article examines the various factors that are preventing certification of additional fisheries in developing countries and how these fisheries could overcome the obstacles if they decide to seek MSC certification.

Figure 1 here

2. Global trend of MSC certification

Kaiser and Edwards-Jones [14] noticed that some form of property rights over the fishery are a prerequisite for participation in the MSC program. The main features of currently certified fisheries are selective target species, limited access, and usually include co-management schemes between government, industry, and fishermen. Most certified fisheries are found in the United States (23), United Kingdom (17), Canada (15), and Norway (10). In general, industry plays the client role and is the source of funds to pay certification costs. Annual landings are highly variable, ranging from 7 tonnes (north-eastern sea bass, UK) up to one million tonnes (Bering Sea pollock, US, which is the world's largest fishery). Blue fish (herring, salmon, sardine, and tuna) claim about 57% of production and white fish (cod, hake, hoki, and pollock) claim about 30% of the certified catch.

From the producers' perspective, the motivations for seeking MSC certification are related to enhancing market competiveness and new markets access, but no less important are non-market based incentives as prestige from an environmentally-oriented image [15–17]. From a market perspective, demand for MSC products is increasing as retailers and food processors in the European Union and the US purchase these products, even though there is a general lack of general consumer concern for sustainable products [18–19]. For example, after certification, sale of Alaska pollock to Unilever rose from 4% to 46% [20][1]. Similar results occurred with the New Zealand hoki fishery [21][2].

The certification experience shows that the fisheries enterprises have obtained non-market benefits, irrespective of the development status of the countries. These benefits are international recognition [22, 23] and offer negotiation power [8, 24–26]. In

[1] Corporate policies of social responsibility and environmental concern of Unilever, the world's largest buyer of frozen fish, lead to active promotion of purchasing certified products. This ensures a supply of fishery products.

[2] The certification of the New Zealand hoki fishery is controversial because environmental groups disputed the resolution, arguing that there is excessive by-catch of sea birds.

some cases, certification is becoming an important regional and national political tool, as seen in certified fisheries in developing countries (Table 1). In South Africa, certification is used to prevent reallocation of catch quotas [8][3]; in Mexico, the organization that operates certified rock lobster has negotiated to obtain the government's economic support [25]. Other fisheries in full assessment in Mexico are seeking similar results [13].

Table 1 here

3. Limitations and opportunities of MSC implementation

The economic and political aspects related to fisheries in developing countries and summarized in terms of limitations and opportunities of MSC implementation in these regions.

3.1. Fish production, management, and market in developing countries

3.1.1. Production, consumption, and governance

Developing countries provide about 60% by volume and about 50% by value of the global fish and fishery products. Low to medium fish consumption from 2 to 20 kg per year per capita occurs except in China and Southeast Asia, where it ranges from 20 to 60 kg [1]. Governance is not shared among countries in general. Weak governance often fails to control overfishing, but also is related to high undernourishment regions (e.g. Central Africa) [27]. Weak governance in fisheries does not necessarily means the absence of management institutions, but rather the result of the inability of these institutions to address the problems.

[3] An interesting effect of certification involves racial and community conflicts. In the exploitation of hake with trawlers (owned by white people) and longliners (owned by native people), only trawlers is MSC-certified. In this case, and elsewhere, certification has been used to prevent redistribution of quotas away from the largest and most economically powerful owners.

Limitations: Fish production in most developing countries is directed toward subsistence consumption and to generating foreign exchange. These countries mainly face problems of poverty and governance; controlling fishing is not a priority.

Opportunities: There are cases of governance among major fish producers (China and Chile) and other countries that have institutional capacity [27]. Effective governance of fisheries is basic to seeking MSC certification.

3.1.2. Key features of fisheries in developing countries

(a) Small-scale and data-deficient. Small-scale is the dominant regime of marine and inland fishing in developing countries. Although small-scale fisheries receive lower subsidies, use less fuel, and generate smaller catches [28], the lack of infrastructure, surveillance, and technical information are disadvantages when competing with industrial fisheries [29].

Limitations: Lack of reliable scientific data about fish resources, because the MSC standard requires verifiable and auditable information that generally implies infrastructure, research, and monitoring. In addition, the financial inability to pay for expenses during the process.

Opportunities: Few small-scale fisheries can participate in the MSC program, but appropriate assessment methods need to be developed for data-deficient fisheries. The MSC has developed a pilot scheme (Risk-Based Framework) for these cases, but no evidence has been presented to evaluate its success. Regarding certification costs, there are opportunities for fishers to seek financial support from NGOs and governments.

(b) Fish management. In most developing countries, legal frameworks and institutions exist to regulate fisheries. Traditional management based on intervention of centralized government intervention and co-management arrangements have been

successful. Focus objectives include preventing stock overexploitation, increasing profitability, solving user-group conflicts, and promoting social development [30]. However, open access in many fisheries is a key weakness in fisheries management. The usual management tools are size limits, closed areas and seasons, gear restrictions, licenses and fishing permits [29].

Limitations: Open access is the major limit to seeking certification, only those fisheries that have property rights over the fishery may participate in the MSC program. Open access conditions have contributed world-wide to the overexploitation of fishery resources.

Opportunities: To counter open access, fishermen could encourage agreements with local organizations or cooperatives and seek well defined access rights. Strong local associations improve the negotiation capacity of producers with governments to demand services, such health and education, and also offer support for defining trade arrangements [12]. Current certified fisheries (Table 1) have clearly defined access rights and strong local associations. The case of a Mexican local lobster fishery, with sustainable harvesting practices long before it achieved certification, illustrates how institutions can be challenged to improve the conditions of the fishing community. MSC certification may generate empowerment [25]. Existing experiences cannot be exported to every case, but some local communities could benefit from successful stories.

(c) Fish trade. Developing countries usually have fish trade surplus [1]; about 30% of their total fish production is exported mainly to the USA, Japan, and the EU to generate hard currency. The export trade is composed of high-value species, such as shrimp, lobster, prawns, and tuna. Most seafood caught in developing countries is sold in domestic markets; future export trade will be develop in these regions with a rise in local per capita consumption [31].

Limitations: Local markets usually have little or no interest in eco-labeled seafood. In Asia, of the world's largest consumers of fish products, only Japan has shown interest for the MSC program and certified products in general [32–33].

Opportunities: MSC certification may provide fisheries in developing countries to enter or maintain international markets and add value to their products [12]. As concern for sustainability increases in developed countries, their markets are looking toward developing nations to supply fisheries resources, but they want confidence mechanisms to identify sustainable sources as part of MSC certification [10].

3.2. MSC features

3.2.1. Standards

The MSC standards were developed through open discussion and are based on a single-species fishery concept. Most fisheries in developing countries harvest several species. The standards are recognized as the most robust assessment of performance [7], but its Principle 2 has been criticized[4] [34]. In 2005, the FAO accepted the MSC standards as a framework to design its guidelines for fisheries and aquaculture certification. However, only a few fisheries can meet the MSC standards.

Limitations: MSC standard are not appropriate for small-scale fisheries [8–10].

Opportunities: Development of new risk-based methodologies. NGOs, such as the WWF, have started community programs to promote the certification of small-scale fisheries, particularly in developing nations. Since environmental improvement is one of many high-priority factors in developing countries, it could be useful for the MSC to design equivalent standards that are applicable to these nations. This implies that the effectiveness of standards for developing nations would be different [35].

[4] The criteria in Principle 2 involving conservation issues have been criticized because interpretation and application are not consistent among certified fisheries.

3.2.2. Cost of certification

When fisheries decide to participate in the MSC program, they must consider the financial costs of assessment and meeting conditions and recommendations[5]. Costs are variable depending on the size of the fishery and the improvements needed to meet the standards. Certification is mainly industry-funded; some authors [14, 35] consider the high cost of certification an impediment for fisheries in developed and developing world.

Limitations: Small fisheries cannot afford the costs. If producers have to bear the costs of certification, they have no guarantee of a market (see below).

Opportunities: Other funding mechanisms exist (NGOs, governments). Fisheries may seek their participation, based on potential costs and benefits. Total costs for certification need to be controlled within a range that allows the inclusion of small-scale fisheries. One suggestion is to certify groups of fisheries and keeping audit costs low to small-scale producers and producers in developing countries [7]. Accreditation by more third-party organizations may create competition and lead to lower certification costs.

3.2.3. Current market for MSC-labeled products

The main markets for fish products are the USA and some European countries [10, 17, 35]. The MSC market is driven by retailers that recognize eco-labeled seafood as a marketing tool to improve their corporate image and maintaining their sources supply. These retailers are the most effective participants in creating the international trade of eco-labeled seafood because they can influence suppliers and customers. Nevertheless, market advantages have yet to be demonstrated for MSC-labeled

[5] The third-party body is a group of experts in the fishery who evaluate the local fishery and express their conclusions as conditions and recommendations that are intended to improve the fishery.

products. There is current demand for species, such as pollock, herring, and cod that are not the main species traded by developing countries [1].

Limitations: Market demand for MSC products is not uniform. Neither Asia, the major world market has little interest, nor does Southern Europe. These are the major destinations for developing country fish exports. Not all species are preferred or have sufficiently high value to become certified. Large retailer participation has caused concern that MSC certification may be used to restrict market access for small producers or it could also give them an opportunity to get into the global market.

Opportunities: Demand patterns are likely to remain in the future; but, most retailers may grow rapidly and fisheries in developing countries that export to these markets may become interested in seeking certification to avoid boycotts and closed markets [13, 26]. Several authors [18, 19] recommend consumer education to promote markets for MSC products.

4. MSC in or out of developing countries?

Fisheries in developing regions have the potential to generate economic prosperity for communities, but many countries do not have successful management schemes that generate the global concern to affect long-term sustainability of their fisheries. Fisheries stakeholders often have different objectives; apparent failures in management could be interpreted as success for social objectives [2]. Although voluntary certification programs encourage sustainable fisheries, they focus on aquatic ecosystems rather than on local communities and do not address the immediate needs of food and income in developing countries [30]. Therefore, economic, political, and cultural differences among developed and developing countries prevent the MSC program from becoming accepted in poor regions. However, there are exceptions. Fisheries that meet the standard and have been certified are listed in Table 1; at least eleven more are seeking certification.

MSC certification and eco-labeling intend to reward sustainable fishing through market-based incentives that depend on creating markets and consumers' willingness to buy eco-labeled seafood. In developing countries, markets and consumers are more sensitive to price rather than sustainability aspects. Moreover, the priority for exporting producers in these regions is to meet the standards required by major importers and MSC certification is not yet mandatory. Although sustainable seafood production is advisable to reduce pressure on wild stocks and considering that market conditions were ideal for create incentives, it may be risky to develop "two worlds of fish". According to FAO [1], this means one standard for the richer consumers (sustainability labeled) and a second, less-demanding standard for the poorer consumers.

However, fish producers catching for with local/regional markets could be interested in certification for non-market benefits. MSC certification does not guarantee benefits to fishermen, but it creates the possibility of providing worldwide recognition and better image in addition to generating a benchmark for their fisheries regimen. In some developing countries, such as Mexico and South Africa, fisheries see certification as international approval that may confer a stronger negotiating position with other governments and stakeholders, such as NGOs and fisheries with whom they compete [8, 13]. These potential benefits have led some fishery managers to participate in the MSC program [35]. However, as more fisheries become certified, the non-market benefits of post-certification may decrease.

Moreover, MSC certification may take on new dimensions as globalization of fish supply chains prevent the renaming and mislabeling of species through chain-of-custody certification [36]. Large retailers dominate the food market and are the most interested in adopting certification schemes as a strategy to ensure seafood supply [15]. Additionally, the cost of chain-of-custody certification is a low cost. Retail chains in developing countries could demand MSC eco-label or similar schemes that transform the organization of fish procurement systems, as happened with the agricultural sector in these regions [37]. Fish producers that sell their products to supermarket chains

must be prepared to meet private requirements or develop the capacity to change their distribution channels.

Cost-of-certification is a factor that is preventing certification of additional fisheries. To reduce costs and avoid the criticism mentioned above, the MSC may encourage accreditation of more third-party certifiers, thus, creating competition and lowering costs. Still the recommendations and conditions that are suggested have expenses that must be covered by the fisheries. Third-party certifiers could be regional, with careful selection and training that enable professional and ethical performance, which in turn generate confidence in all levels of the chain from producer to consumer and also eliminating language barriers. Since the certification process is imperfect, producers may decide to seek certification if its costs are low enough [7]. Small scale and industrial fisheries may negotiate funding support to cover certification costs from governments and NGOs, as some Mexican and Argentinean fisheries under MSC assessment are currently doing.

Fishery certification initiatives need the active involvement of public authorities [10]; to make this happen, governments in developing countries should understand what certification is about. Experiences learned (Table 1) show that government participation during the process of certification was low but instruments of government remained essential to meet the standard. Today there exist concern about private efforts to evaluate the national fisheries regime, but MSC certification does not affect national sovereignty; alternatively it may validate the effectiveness of sustainable regimens in developing countries. Because of the bad reputation of fishing in developing countries, many governments would like to receive international recognition.

Considering the limitations of small-scale and data-deficient fisheries to meet the MSC standard, existing national or regional certification systems could be adopted, but they are not based on broad stakeholder consensus and acceptance for the MSC. We do not advocate national certification systems in developing countries because

they could create confusion among consumers and fisheries. Also, the reputation of fish management will still be questioned. Instead of national certification systems, we considered the need to develop certification levels within the MSC system. These levels, might be called “gold” and “silver”, could be used as approaches to ensure progress of achievement in meeting the MSC standard [14, 35]. The idea is to work with two systems within the same framework, allowing the participation of more fisheries by creating the perception among them that certification is affordable and improves over time. In this way, fisheries that are now very close to meeting MSC standards but still have not reach the required score, might participate in the MSC scheme in a lower category (“silver” status) without fear of discrimination by the market (market punishment instead of market incentive) and committing the effort to overcome the failed aspects in their evaluation to enable them to reach “gold” status.

Additionally, the requirements for documentation during the certification process may result in logistical problems, particularly in developing countries and for small-scale fisheries. If simple monitoring and documenting systems can be developed specifically for community fisheries, then the requirements of MSC certification could support the communities’ participation. In summary, the MSC, as a relatively young organization, should seek alternatives to allow fisheries in developing countries without lowering their general standard of certification but understanding the different objectives among fisheries.

5. Conclusion

MSC certification can be adopted for only a few fisheries in the world. Today, fishing in developing countries is underrepresented; only four fisheries are certified. The low participation of these regions in the MSC program is influenced by four factors: open access, lack of reliable scientific data about fish resources, inability of fishermen to pay the costs incurred during the process, and market features since certified products are traded among developed countries and only certain species. Every fishery

has particular objectives, and due to MSC certification, is a voluntary and imperfect mechanism. Only fisheries that can lower processing costs can seek certification. Certification could generate benefits related to a fishery's objectives. Among the benefits is international recognition and improved image with outside agencies, such as governments and NGOs. In particular, experiences of certification in developing countries suggest empowerment and positive impact on negotiation with government authorities regarding access rights. However, fisheries should analyze the convenience of certification (cost/benefits) and post-certification benefits that might decrease once more fisheries become certified.

Nevertheless, the MSC is an emerging organization and increasing its acceptance requires implementation of its program in developing countries. Even though certification represents an option to promote sustainable practices, certified fisheries promotes globalization rather than administrator's conviction and intent. A limited number of fisheries in developing countries may participate in the current certification framework, but certification cannot be considered the ultimate solution in many cases.

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Figure 1. Historical pattern of MSC-certified fisheries and capture, 2000–2011.

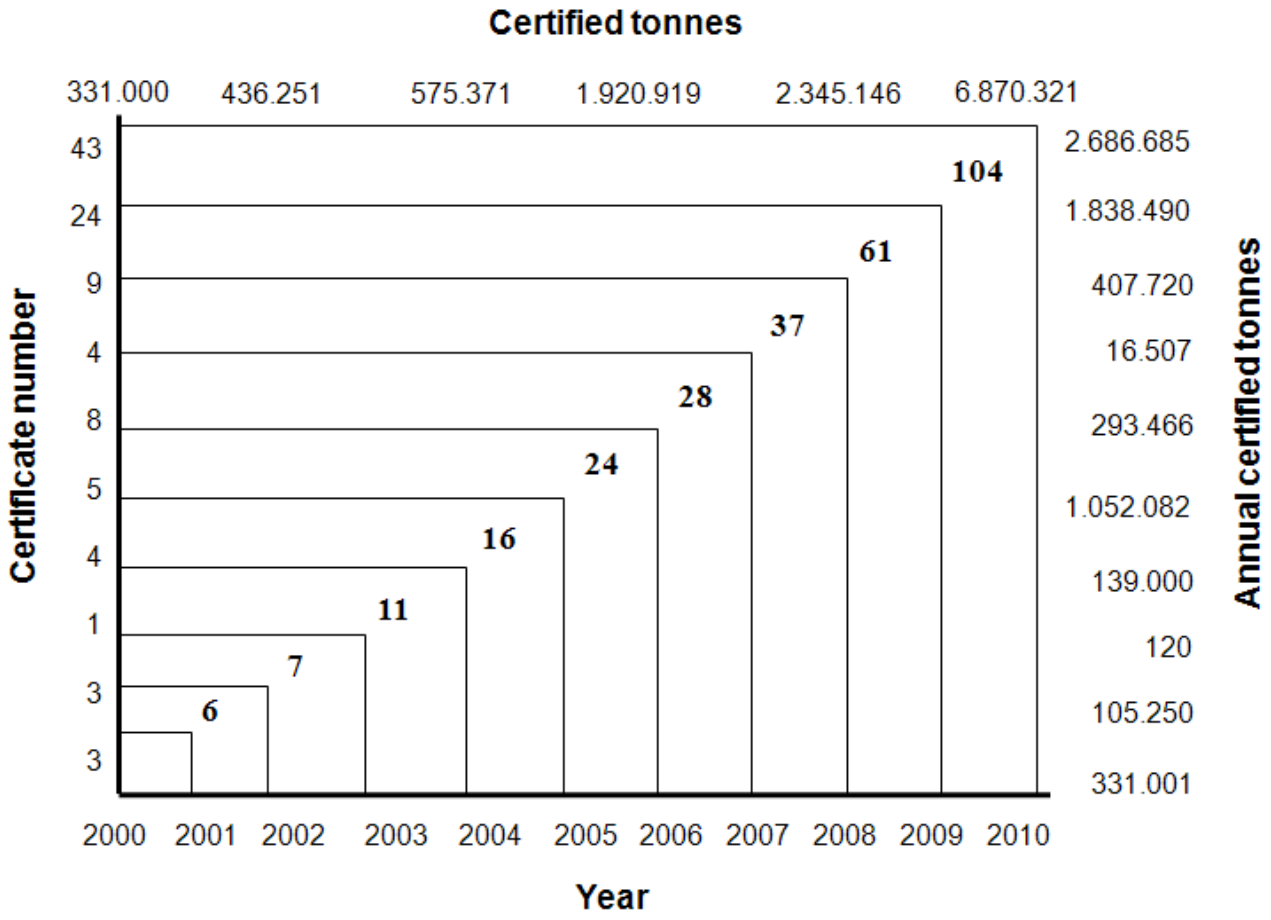
Table 1

Key features of MSC certified fisheries in developing countries [5]

Fishery	Client group	MSC year and current status	Specie	Landings (t / year, approx.)	Fishing method	Management body	Management mechanism	Market
South African hake trawl, 2 fisheries	SADSTIA	2004, re-certified in 2010	*Merluccius paradoxus* and *Merluccius capensis*	134,000	Bottom trawling	Department of Environmental Affairs and Tourism: Branch Marine and Coastal Management	TACs allocated to companies, limits on number of vessels and closed areas	European Union, USA
Mexico, Baja California red rock lobster	FEDECOOP	2004, reassessment in 2009	*Panulirus interuptus*	1,500	Baited wire traps	Sub-delegation of fisheries and governmental research bodies	Defined area, limited entry, user rights given to fishing cooperatives, TACs, minimum landing sizes, protection for gravid female	China, Taiwan

Argentina, Patagonian scallop	Glaciar Pesquera	2006	*Zygochlamys patagonica*	45,000	Benthic otter trawl net	Secretary of Agriculture, Livestock, Fisheries and Food, Sub-secretary of Fisheries and Aquaculture, Federal Fishery Council	Open-closed areas, TACs, minimum legal size, fishing effort fixed, protection of the parental stock	France, USA
Vietnam, Ben Tre clam	All co-operatives within Ben Tre	2009	*Meretrix lyrata*	8,600	By hand or metal rakes with a net pocket	Provincial People's Committee; Department of Agriculture and Rural Development; Clam Cooperatives	Minimum landing size, temporary closure, defined area	Local markets

SADSTIA = Members of the South African Deep-Sea Trawling Industry Association; FEDECOOP = Baja California Regional Federation of the Fishing Co-operative Societies.


Certified tonnes
331.000
436.251
575.371
1.920.919
2.345.146
6.870.321
43
24
9
4
8
5
4
1
3
3
104
61
37
28
24
16
11
7
6
2.686.685
1.838.490
407.720
16.507
293.466
1.052.082
139.000
120
105.250
331.001
Certificate number
Annual certified tonnes
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year