Drawing the line between sustainable and unsustainable fish: Product differentiation that supports sustainable development through trade measures

Urs Baumgartner (✉ urs.baumgartner@ekolibrium.com)
ekolibrium  https://orcid.org/0000-0003-4785-0785

Elisabeth Bürgi Bonanomi
   CDE: Universität Bern Interdisziplinares Zentrum für Nachhaltige Entwicklung und Umwelt

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Abstract

Background

Unsustainable production practices and increased demand for fish have aggravated negative social, ecological, and environmental impacts in fisheries and aquaculture. Measures to correct bad practices have mainly been introduced by private actors. However, there is increased demand for state intervention, particularly regarding trade regulations concerning fish and other agricultural products. Building on discussions regarding product differentiation through trade measures that favor sustainable products, this study looked at how sustainable and unsustainable fish has been distinguished in Switzerland. In interviewing experts in the fish trade and sales business in Switzerland, the research aimed at understanding the actors and forces that shape the concept of sustainable fish in the country.

Results

Three ways of product differentiation for sustainable fish by private actors were identified: ecolabels, “Swiss produce,” and recommendations in the form of a “consumer guide for fish”. Consumption of sustainable products is currently constrained mainly due to price. Defining “sustainable fish” is challenging and subject to interpretation. All existing measures to differentiate sustainable from unsustainable fish products in Switzerland have shortcomings, particularly in terms of discrimination and inclusiveness. Fish ecolabels play a key role in product differentiation, but experts believe that they fail to accommodate all aspects of sustainability.

Conclusion

Our findings imply that the Swiss state should play a more important role if it targets to fulfill the promise of article 104a of the Swiss Constitution, which seeks to foster sustainable production and cross-border trade relations that contribute toward this goal. Due to similarities between the Swiss and other European fish markets, we assume that governments in general must have an active role in shaping the definition and trade of sustainable fish products. Preferred trade treatment for sustainable fish products is a potential option to increase the production and consumption of sustainable fish. When designing measures for product differentiation, a careful choice is paramount so as not to violate existing trade obligations.

Introduction

A growing population and increased demand for fish have aggravated issues around overfishing and unsustainable use of aquatic resources worldwide and have consequently stimulated discussions on how to meet demand for fish produced in an environmentally and socially sustainable way (World Bank 2013). In response to pressure from conservation nongovernmental organizations (NGOs) and consumer
organizations, various efforts have been made to improve production practices and value chain performance along fish value chains. Most prominent are private efforts such as eco-certification, direct sourcing schemes, and consumer advice in the form of “seafood guides” (Roheim et al. 2018). However, the benefits and impacts of efforts by private actors on fish sustainability have been questioned on different fronts (Hallstein and Villas-Boas 2013; Jonell et al. 2013; Sampson et al. 2015; Baumgartner et al. 2016). Looking forward, Roheim et al. (2018) suggest that stronger action by states could be an option that might improve prospects for a sustainable fish market in the future. From a compliance perspective, limiting the production and consumption of fish that have unnecessarily negative social, ecological and environmental costs could be a mandatory requirement for states to meet their international commitments, such as the Sustainable Development Goals 2030 or the Aichi Biodiversity Targets. Furthermore, a stronger role would allow states to react to demands from their citizens, who clearly seem to prefer fish from sustainable sources over other alternatives (McClenachan et al. 2016; Bronnmann and Asche 2017; Del Giudice et al. 2018).

The idea that the public sector should play a more important role is taken up by Bürgi Bonanomi and Musselli (2019), who propose that states ought to interfere in global value chains with a stronger focus on sustainable development. Analyzing trade agreements, the authors observed that whereas trade terms often affect the agriculture sectors of partner countries, current agreements do not generally include provisions that seek to mitigate the negative impacts on vulnerable groups or the environment. To overcome this weakness, Bürgi Bonanomi and Musselli (2019) suggest that future trade agreements should be more inclusive and have a stronger focus on potential impacts rather than on decreasing tariffs only. As a specific example, the authors mention product differentiation which could be applied with sustainable development in mind. States could influence production practices in the partner country by providing preferential trade terms for sustainable products compared to likewise products that are produced at high external costs (Bürgi Bonanomi and Tribaldos 2020).

The power of such intervention can be illustrated in the example of fish consumption in Switzerland. Like many European countries, Switzerland heavily depends on imports to meet its domestic demand for fish. For the past two decades, the share of imports in the country's total fish consumption has been above 96%, reaching a high of 97.8% in 2017 (Bundesamt für Statistik 2019). Likewise, consumer demand for sustainably produced food products is high (von Meyer-Höfer 2016). What is more, consumer preference for sustainable agriculture production and trade has a high priority in national agricultural policy: To guarantee the supply of food for the Swiss population, article 104a of the Swiss Constitution seeks to strike a balance between opening markets for agriculture imports and safeguarding local production. More specifically, it demands, among others, for the creation of conditions required for “cross-border trade relations that contribute to the sustainable development of the agriculture and food sector.” Notwithstanding, Swiss imports of fish are not currently screened for sustainability, and efforts to mitigate the negative effects of fish consumption are subject to voluntary action by private actors. Given Switzerland’s high dependency on imports of fish products as well as the rigorous demand for sustainable agricultural production, it could be argued that the government must use trade policy to interfere in fish value chains.
The question is, how can the state do so without challenging agreements with already established institutions such as World Trade Organization (WTO)? If the Swiss government applied different tariffs for sustainable and unsustainable fish products to foster sustainable development, how would it draw the line between what is sustainable and what is not? May it build on private efforts targeting the same objective as it has done in a recent trade agreement despite of substantial critique?

This study focused on understanding the difference between sustainable and unsustainable fish and the goal to assess how to incorporate such distinction into trade policy. Through this lens, it looked at how sustainable fish has been defined in Switzerland, what measures the private sector uses to foster the consumption of sustainable fish, and what the state could learn from these experiences.

**Methodology**

From January to December 2020, 32 experts familiar with fish trade in Switzerland were interviewed. Interviewees consisted of stakeholders working at different management levels who dispose of a mix of insights into value chains, including producers, fish buyers and traders, sales representatives from retail and other food sectors, product managers (with a focus on fish), sustainability experts, marketing directors, food ecologists, and social compliance experts. Interviewees were selected using the author’s personal contacts, a snowball system, and an online search.

Interview techniques included semi-structured interviews by Skype, phone, and face-to-face, as well as an online survey using Google forms. The online survey included 20 largely open questions, for which respondents took an average of 35 minutes to reply. Out of 42 experts invited to participate in the survey, 23 accepted. Face-to-face and phone interviews took longer and stretched over several sessions for some interviewees.

Interview questions were targeted at understanding the sustainable fish movement in Switzerland, including actors, objectives, definitions, means, and impacts. Questions also aimed at gaining an overview of the interviewees’ perceptions of eco-standards and consumer labels and their experiences with fish labels as a tool for product differentiation.

Data from interviews was complemented with online research as well as information gained through inquiries for specific data, such as trade information or market shares. Online research assessed specific sites, such as consumer guides for sustainable fish and websites of key actors, and also included a search by topic using terms like “sustainable fish,” “sustainable AND fish,” “sustainable fish Switzerland,” “Swiss fish,” and “Swiss aquaculture.”

Qualitative information from the interviews along with other sources of information were evaluated using “thematic analysis.” Data from transcripts was categorized according to themes that served to answer the research questions, including “sustainable fish,” “actors,” and “ecolabels,” as much as emerging themes like “transparency” and “animal welfare.”
Findings

1. Sustainable fish is a question of place and interpretation

Overall, the importance and level of sustainability of fish products in Switzerland vary mainly across distribution channels and, to a lesser degree, on other factors including cultural aspects. A majority of respondents believe that the Swiss retail sector has made serious efforts to improve its product ranges over the past decade and that retailers today largely sell sustainable fish. However, there is a consensus that within the restaurant and food service (RFS) sector, sustainability is far from playing an important role. High competition and price-sensitivity seem to hinder stronger acceptance. Price differences were also flagged as the main reason why not all fish products were sustainable in the retail sector. According to interviewees, price differences between sustainable and unsustainable products depend on the species and can be large for certain species. What is more, sustainability of products is much more challenging to communicate within the RFS sector than the retail sector: Unlike with packaged products, “fish labels can hardly be attached to a plate,” as one respondent put it. This limits the visibility of ecolabels in restaurants. Representatives from the sector furthermore explained that in RFS availability was a key requirement and mostly translates to species and freshness, coupled with a demand for small quantities of fish only. This necessitates remarkably high flexibility for the seller and makes it all the more difficult to put sustainability of products at the center. Others explained that in gourmet and speciality shops, availability was paramount in terms of a broad product range. In such shops, rare or exotic products might be a key sales point. In terms of sustainability, however, rare and exotic products often score poorly. In contrast, retail shops focus more on species that are consumed “in masses,” including salmon, shrimp, tuna, and cod. Experts pointed out that particularly for discounters, which only feature a few fish items, selling uniquely sustainable fish was not much of a challenge compared to a restaurant or gourmet shop, where guests look for an alternative to the fish they already eat at home. For these reasons, experts flagged the RFS sector as a big challenge for sustainability. Some respondents also explained that cultural or geographic factors had an influence on the level of sustainability. For example, consumers of Mediterranean origin had specific preferences due to their cultural heritage. These consumers appreciate fish with certain cultural value regardless of their sustainability performance.

The level of sustainability is also a question of interpretation. While major retailers and other key actors use the “World Wide Fund (WWF) seafood guides” as an orientation for sustainability, there is no agreement of where to draw the line between sustainable and unsustainable products. The WWF seafood guides, which are meant to help consumers make the right buying decision, separate fish products into four categories: green for “recommended,” orange for “acceptable,” red for “avoid,” and blue for “recommended fish labels.” WWF-recommended labels include the aquaculture stewardship council (ASC), the marine stewardship council (MSC) and organic labels. According to the WWF, “acceptable” products are not sustainable. On pressure from members of the Seafood Group, however, WWF Switzerland allowed members to advertise such products as sustainable in the past, an exception that ended on December 31, 2020. Starting in January 2021, WWF recommendations in Switzerland were aligned with communication from other WWF offices and certain fish that could be sold as ‘sustainable
fish’ in 2020, is no longer considered sustainable in 2021, even though production practices are exactly the same as before.

2. Swiss or ‘local’ produce

Independent of WWF recommendations, there appears to be a common perception that domestic fish is sustainable. Many retailers feature products labeled as “regional produce.” While suggesting a “preferred product” compared to others, these label schemes do not integrate any environmental objectives. Migros’ “Aus der Region” label simply defines the geographic scope of production. Coop does not publish information on what a producer must fulfill for its products to be sold under the label “Mini Region,” though the name suggests similar requirements. Nevertheless, most interviewees shared the view that Swiss produce is sustainable. Among others, experts believe that “Switzerland disposes of sound regulations” and “compared to imported fish, the eco-footprint of Swiss fish is lower.” They further observed that Swiss fish would in any case be better than imported fish, mainly for two reasons. First, in the words of one respondent “there were no reports of disturbing production practices such as those exposed in the pangasius (Pangasianodon hypophthalmus) industries in Vietnam.” The second reason is found in short value chains with reduced energy use for transportation. According to respondents, short transportation routes result in positive environmental outcomes compared to imported fish products, which require long transportation routes by ship and road or (in the worst case) even by plane. Others were more sceptical and believe that “Swissness” was pure marketing, a claim supported by the observation that availability of local products was more important than their sustainability performance. For example, some lake fish species have a strong local tradition in Switzerland, such as rainbow trout (Oncorhynchus mykiss), pike-perch (Sander lucioperca) and lake whitefish (various Coregonus spp., locally labeled “Felchen”). These are apparently a big challenge for the entire Swiss fish sector due to reduced wild populations and decreasing catch volumes in recent decades. According to respondents, the production gap of traditional lake species, however, could not be compensated with imports even if their sustainability performance were better compared to local produce, simply because they are not Swiss produce. Other interviewees expressed particular concern regarding adequate legal requirements for aquaculture production in Switzerland. There appears to be no national aquaculture framework and regulations therefore strongly vary throughout the country. Furthermore, small-scale fish farming in traditional cattle or pig farms as an additional source of income is largely exempt from regulations that apply to commercial fish farms. In contrast to professional fish farms, agriculture farmers are not required to have fish knowledge, and effluent water does not need to be treated before discharge. In addition, there are limited requirements regarding animal welfare and chemical use. Experts therefore view the proliferation of “amateur” fish production as damaging.

3. WWF’s influence on the definition of sustainable fish

The influence of the WWF on the sustainable fish movement in Switzerland is undisputed among experts. Out of 25 interviewed, 15 believe that the WWF is the organization that most influences the definition of sustainable fish. The other big driving force, mentioned by six respondents, is the two major retailers
Coop and Migros, as well as the retail business in general, which in turn are influenced by the WWF (Fig. 1). Five experts pointed out that the term sustainable fish is not officially defined by anyone and that, consequently, different actors use varying definitions.

The WWF’s theory of change lies in transforming value chains by working at the consumer end with two audiences. Consumers are the main target, since a change of consumption depends on the choices they make. To this end, the WWF has developed its consumer guides for fish to help consumers make informed choices when buying fish. Its recommendations are based on assessments using two methodologies (fisheries versus aquaculture), which the WWF developed together with partner organizations to assess the sustainability of fish production units. Not obvious for consumers (who only see the WWF’s color scheme) is the “score” that results from these assessments. Every analyzed production unit receives a score between 1 and 5, where 1 is the best and 5 the worst. Products with a score of 1 or 2 are considered sustainable fish, whereas those scoring 3, 4 and 5 indicate unsustainable production practices, even though, as mentioned already, in Switzerland a score of 3 could be marketed as sustainable as recently as the end of December 2020.

Seven experts (n = 25) mentioned either the WWF’s seafood guides or the WWF score as the dominant mean for implementing sustainability targets. Together with 14 positive replies for “labels,” the guides and scoring system are believed to be key in driving a sustainable transformation in the Swiss fish sector.

The second main target of the WWF is key retail companies, with whom it has entered into “partnerships” that aim to improve their product ranges together. To have a sector-wide impact, the Seafood Group was created in 2009, consisting of representatives from the retail and the RFS sectors and coordinated by WWF through a roundtable. The group was active until the end of 2015, when it was apparently dissolved due to “different agendas” and lack of capacities to fulfill the group’s vision. While representatives from the RFS sector are no longer in dialogue with the WWF, the organization continues to work with the biggest retailers, such as Coop, Migros, Denner, and Lidl, as well as Bell and Micarna, two subsidiaries of Coop and Migros, respectively, with which they maintain bilateral partnerships.

Several experts were critical toward the power of the WWF and its business partnerships with major retailers, as they see these as monopolizing the sustainable fish paradigm. Judging from their overall feedback, it could be observed that some of these rather skeptical experts were nevertheless—and apparently involuntarily—influenced by the WWF’s interpretations of sustainable fish. They mentioned that the WWF-recommended labels “ASC,” “MSC” and “organic” as well as the WWF score are, together, a good definition for sustainable fish.

Using this approach, an estimated 40% of all fish consumed in Switzerland can be deemed sustainable, with the share of sustainable products being much higher in the retail sector compared to RFS (Fig. 2).

4. The challenge of defining ‘sustainable fish’
Overall, we observed that experts had difficulties defining sustainable fish in their own words. Many definitions focused on maintaining fish biomass without considering other dimensions of sustainability, even where interviewees criticized the absence of a holistic perspective as a weakness in existing rating schemes. The majority of experts believe that the challenge to clearly draw a line between sustainable and unsustainable fish was one of the biggest hindrances in achieving a better performance of the sector. Respondents explained that because the definition of sustainability is subject to individual interpretation, many actors simply use the concept most useful for them, with the goal to claim that they produce, trade, or sell sustainable fish, even where this is not true.

Some respondents fear that it might be impossible to fulfill all criteria that make a fish product sustainable, since, as they explain, “there are always trade-offs between different aspects of sustainability.” They illustrated their point by referring to a controversy they repeatedly found themselves in. When switching to a labeled product from unlabeled fish, they had to change their former supply from the Mediterranean Sea to a fishery farther away. For fish to be sold fresh, this generally means changing the means of transportation from truck to plane, a practice respondents considered totally irresponsible from a sustainability perspective, though the fish products are then considered sustainable.

5. The influence of fish labels

According to a majority of respondents, labels play a key role in consumer perception about fish. The WWF has selected specific ecolabels for products that it considers unconditionally sustainable—regardless of the outcomes when applying its assessment methodology. These labels include MSC for fisheries and ASC and organic labels for farmed products. The share of labeled fish in overall sales according to one of the WWF’s recommended labels is a key performance criteria of the organization’s partners. As a result, the continuous increase of labeled fish as a percentage of fish sales is one of the main sustainability targets. This approach was criticized by some interviewees who believe that it leads to a proliferation of big corporations at the expense of smallholders, thus contributing to further monopolization of the sustainability paradigm.

Some experts pointed out that in addition to the “WWF-imposed labels,” other fish labels can also be considered sustainable. Friends of the Sea (FOS) was mentioned five times, GlobalGAP three times, Fair Trade USA (FTUSA) twice, and Best Aquaculture Practice (BAP) and AquaGAP once each. Several experts believed that GlobalGAP was particularly relevant from a sustainability perspective. On the one hand, the standard has existed much longer than the ASC, is open to more fish species, and has been available for many species before the ASC standard. Experts also believe that overall differences between the ASC and GlobalGAP were minimal, with GlobalGAP being even stricter in certain key areas of concern, such as feed inputs. The similarity could best be illustrated by the large number of ASC certified farms that are also certified according to the GlobalGAP standard. Some respondents therefore regret that the WWF does not acknowledge GlobalGAP as equivalent to the ASC and believe that market interests might influence the decision more than sustainability objectives. Interviewees also questioned WWFs practise of promoting
all MSC certified products as sustainable, despite WWF having logged objections to several MSC certifications because it believes the corresponding fisheries are unsustainable.

Twelve of the 25 interviewed experts think that MSC-labeled fish can be considered sustainable, though three had reservations regarding the sustainability of this standard (Fig. 3). The ASC label received the same number of approvals, while 16 experts approved of organic labels.

Respondents explained that labels play a particularly important role in the retail sector, as they make simple tools to communicate sustainability with consumers. As a result, consumer-facing labels such as “ASC,” “MSC” and “organic,” which enjoy high recognition among consumers, are preferred over sustainability standards that are not clearly communicated to consumers, such as GlobalGAP. Lack of visibility was thus mentioned as a drawback for lesser known standards.

Some experts expressed concerns regarding ecolabels. A key concern that was repeatedly brought up is the labels’ narrow definition of sustainability. Respondents explained that the MSC and ASC only focus on environmental sustainability but fail to include social and financial considerations. Other experts resent a better integration of social impacts, economic concerns, and animal welfare. Conflicts of interests (e.g. economic targets as the main goal above sustainability) and inadequate sustainability criteria within these are further constraints of fish labels, though they were cited less frequently. Constraints include the practice of labeling farmed fish as sustainable, even where the feed required to raise the fish contained more food grade fish than the production system produced as net output (fish-in-fish-out ratio > 1). In the respondents’ view, only a production system with a positive net gain should be considered sustainable. They clarified that, from this perspective, carnivorous species such as salmon, seabream, yellowtail, or cobia were impossible to farm sustainably, even if their availability under the ASC suggested otherwise. Further constraints include the perception that, according to the respondents, certain catch methods, such as bottom trawling, could never be sustainable due to habitat destruction but are nevertheless heavily represented in the MSC label.

6. Lack of transparency, social criteria, and better integration of animal welfare

Experts identified lack of transparency, lack of social criteria, and better integration of animal welfare as the main flaws in current sustainability agendas for fish. Regarding transparency, respondents observed that while WWF stressed transparency in value chains as a key to sustainability, the biggest weakness of their fish guides was exactly a lack of transparency. WWF assigns scores to different value chains without providing assessment details, justification or explanations. Interviewees also highlighted that current legal requirements fail short to foster transparency. A mentioned example are mandatory product declarations for fish which are restricted to capture area and capture method category. To determine the sustainability of a product, more detailed information is required such as the specific catch method. Since this information was not officially required, it cannot be verified and as one interviewee described “fish traders can manipulate information to their advantage”, a claim supported by others.
Interviewees further pointed to inconsistencies in ecolabel schemes. Some respondents claim to know that traded volumes of specific MSC products exceed the corresponding fisheries production, which they interpret as proof of systematic cheating. Others witnessed a similar case for the ASC label, where—in publicly available audit documents—some shrimp farms report up to 10 times higher production volumes than these production systems can yield, according to experts and literature. Since several farms are affected, this failure is likely systematic and not a simple mistake.

A failure to better integrate social criteria in “sustainable fish” definitions is a further critique from interviewees. Feedbacks from experts suggests that social aspects are poorly integrated in fishery products and largely limited to farms in farmed fish, whereas most workers engaged in fish value chains were employed in the processing industry. This could lead to a situation where MSC certified fish traded in Switzerland and produced in the USA is processed in China without anyone controlling the labor conditions in China.

A few respondents regret that fish welfare has so far not had a major role in defining sustainable fish. They pointed to “often cruel killing methods even for certified fish” and a lack of legal requirements regarding animal welfare as two areas of concern. Identifying the well-being and integrity of the animal as a key factor in determining sustainable food production, they see the absence of a more prominent role of this topic in current ecolabels as the biggest flaw in fish sustainability debates.

Discussion

A key finding from our interviews is that some actors have apparently co-opted and instrumentalized the interpretation of sustainability to fulfill their own agenda. While our study could not provide an answer to the origin of the dominating perception that Swiss fish is sustainable, we assume it is the result of a mutual interest shared among domestic stakeholders. Suggesting that all Swiss fish products are sustainable simplifies domestic trade relationships and optimizes supplies. If the availability of domestic products has the importance that interviewees claim while production is heavily limited, demand emerges as the driving market force. Unlike imported products, which are readily available and therefore subject to competition, Swiss products benefit from “exclusivity.” As a result, availability turns into a key sales criterion that mandates the highest flexibility for other aspects, including sustainability. A case in point is niche products such as “Swiss shrimp” and “Swiss salmon.” Not rated sustainable by the WWF, both achieve much higher market prices than imported products labeled sustainable. A further factor contributing to the same effect might be a limited understanding of production practices and their sustainability performance. While low carbon emissions associated with short transportation routes were repeatedly mentioned as a key advantage of Swiss fish products, respondents seem to neglect other energy demands in fish production. The latest aquaculture development projects in Switzerland are mostly farms with indoor recirculating aquaculture systems, which are among the most energy-demanding fish production systems (Muir 2015; Badiola et al. 2018). Energy demand is particularly high when warm-water species such as shrimp or pangasius are farmed. Furthermore, the key inputs of feed and seed are generally imported in all Swiss aquaculture farms, and many species farmed in Switzerland
have high feed requirements, with fish-in-fish-out ratios > 1. In other words, while energy use in transporting the final products may be lower for Swiss fish, the overall ecological benefits compared to imported fish might be limited. Assuming that Swiss fish is per se sustainable is also careless, since aquaculture production is poorly regulated in Switzerland. From a provocative standpoint, the opposite could be claimed, as the overall poor representation of ecolabels for Swiss products could reflect a lack of sustainability. In reality, cause and effect are probably of different origin, as Swiss products simply do not need an ecolabel for market access. In contrast to the mentioned pangasius, which suffers under a bad reputation mostly due to false claims (Murk et al. 2018), Swiss fish are appreciated regardless of their sustainability performance.

Apart from local produce, also fish ecolabels appear to be instrumentalized for arbitrary market discrimination in Switzerland. Why the WWF as the apparent dominating actor shaping the sustainable fish agenda is unconditionally supporting the labels MSC and ASC but not other labels may be interpreted in different ways. On the one hand, the selected labels could indeed represent the only sustainable choices. On the other hand, the role of the WWF can be questioned as not fully independent from these labels. Following the opinion of some respondents, the WWF’s interpretation of sustainability could be linked to business interests. The WWF was a founding partner of both the MSC and ASC standards, substantially supporting the development and proliferation of both organizations. The observation that the WWF recommends certain MSC-certified fisheries as sustainable even though it initially objected against their certification suggests a certain bias. Independent and consequent acting would mandate the WWF to withdraw support for the affected fisheries, a measure that only WWF Germany has taken. In contrast, WWF Switzerland justifies its support for the MSC by claiming a lack of alternatives for sustainable fisheries standards. However, a study by Borland and Bailey (2019) suggests otherwise. Comparing the MSC with FTUSA for its suitability with small-scale fisheries, the authors found that FTUSA is not only more inclusive but also achieves better environmental outcomes. Yet the WWF’s seafood guides do not mention FTUSA. A similar situation is evident for aquaculture labels, where the standards GlobalGAP, BAP, and AquaGAP apparently demand very similar requirements in regard to production practices as the WWF-recommended ASC. A similar observation can be made for organic fish labels represented in the Swiss market. Even though the WWF Switzerland does not limit organic standards in its seafood guides to specific labels, there appears to be some bias in favor of the organic labels Bio Suisse and Naturland (a German label). Following a recommendation by WWF Switzerland and partner organizations, these labels are considered “superior” to other organic labels such as EU organic or Soil Association Organic (SAO), even though differences are limited. Two hypotheses may explain this situation. On the one hand, similar to the incorrect assumption that all Swiss fish is sustainable, the preference for the label may stem from a lack of understanding. Rather than based in objectivity, the preferential treatment may be rooted in a preference for Swiss products as such, a perception that could be categorized as “product chauvinism.” The other explanation is the instrumentalization of a label with the goal to limit unwanted competition. There appears to be a strong link between Coop and Bio Suisse, with evidence that the former has tried to monopolize the Bio Suisse label (Meyer 2020). Through this lens, labels in Switzerland are not exclusively used to increase the consumption of sustainable products.
If that was the case, any label would logically be placed in as many sales channels as possible. Granting exclusivity for a label to specific organizations or denying its use to others follows other objectives and certainly does not serve the cause of a sustainable transformation within the sector. Likewise, from a sustainability perspective it makes no sense to prefer a domestic organic label over another organic label if the outcomes are the same. In contrast, exclusivity achieves a monopolization of the market. By only promoting a limited number of fish labels and pushing its retail partners to increase their share of labeled seafood on a yearly basis, WWF clearly contributes to the elimination of all other fish labels and fish products, be they sustainable or not.

Overall, our findings thus suggest that the apparent appropriation of the sustainable fish agenda by certain private actors mandates a stronger role for the state to achieve sustainable and fair outcomes. If the Swiss government aims to fulfill article 104a of the Swiss Constitution through accordant trade policy, it can not stand aside and let market mechanisms play out, nor can it base sustainability provisions in established means by private actors. Firstly, because adequate economic incentives would benefit a higher consumption of sustainable products. Interview feedback suggests that sustainability of fish products in the Swiss fish market would likely benefit from a preferred trade treatment for sustainable fish. One observation is that sustainability has not played a more prominent role in the RFS sector because of its limited communication potential and the consequence that price becomes a key driving force in the affected consumer channels. This suggests that trade measures benefitting sustainable products could help increase the share of sustainable consumption. Such a measure could potentially provide better access for sustainable products that currently face hindrances accessing EU markets (Pascual-Fernández et al. 2019) or balance unfair economic advantages for unsustainable products (Sumaila et al. 2019; Sumaila et al. 2020). Likewise, the share of sustainable products could further increase in the retail sector, where price was mentioned as a key reason for unsustainable fish products remaining in demand.

Secondly, because established means for product differentiation fail to be inclusive. The observation that current approaches to differentiate fish products in Switzerland largely fail to integrate social concerns and neglect emerging social and economic challenges within the fish sector conflicts with sustainability objectives. For example, child and forced labor within the fish industry have been witnessed in a large number of countries (Greenpeace 2020), including ones that are key suppliers for the Swiss fish market. Currently, and because fish labels do not adequately address social aspects, fish products could be sold as sustainable even if their production or trade involves unfair treatment or exploitation of people. In addition to not avoiding negative social impacts, existing tools do not value positive social impacts either. For example, small-scale fisheries provide more employment and livelihood opportunities than industrial fisheries (Teh and Pauly 2018; FAO 2020). It can also be expected that extensive aquaculture in developing countries generates more employment opportunities than intensive aquaculture production characterized by a high degree of technologization, as is practiced in Switzerland. Ecolabels do not reflect this reality. Eco-certification seems to be biased toward industrial fleets and intensive aquaculture, while artisanal fisheries and small-scale production systems are largely left out (Borland and Bailey 2019; Manach et al. 2020), even though the latter provide diversified business opportunities for fisherfolk and
their communities compared to industrial fisheries (Pascual-Fernández et al. 2019). Likewise, fisheries from developing countries are underrepresented in the MSC label (Ponte 2012; Bush et al. 2013; Manach et al. 2020). Thirdly, because private interventions fail to account for diversity. Two interesting aspects of sustainability raised during the interviews but rarely discussed in fish literature are cultural preferences and product diversity. If ecolabels are used as the main vehicle to assess and communicate sustainability, product choice will largely depend on the coverage that these eco-standards offer. In other words, labels fail to foster sustainable consumption where labeled products are unavailable because the species or production systems are not covered by any eco-standard or no operations have been certified even if sustainable operations exist. Affected products will be perceived as unsustainable and might be consumed less or, in the worst case, disappear from the market. A long-term outcome is a limited product range, where offered products are reduced to a handful of main species that benefit from economy of scale. This in turn reduces sustainability from a cultural (and potentially ecological) perspective. In the extreme, such a scenario could lead to a situation where other actors follow the example of discounters and sell only four or five fish species. Lack of inclusiveness is clearly a drawback of certification schemes and ecolabels (Vandergeest 2007; Hatanaka 2010; Ha et al. 2012; Bush et al. 2013; Baumgartner et al. 2016; Roheim et al. 2018) and differentiation along ecolabels thus questionable.

When using trade measures in the form of product differentiation between sustainable and unsustainable fish products, states must pay utmost attention to their design. For example, Bürgi Bonanomi and Tribaldos (2020) explain that certain criteria must be followed such as not to violate the principles of non-discrimination and proportionality, which are key to WTO law: i) differentiation must be flexible in order to cover a multitude of production methods without imposing specific cultural values, ii) domestic producers must be benchmarked against the same sustainability criteria as producers in the importing countries, iii) the intervention should be as minimal as necessary, and iv) measures should effectively facilitate a sustainable transformation. Through this lens, the current approaches to differentiate sustainable from unsustainable fish products introduced in Switzerland by private actors fall short of meeting all the criteria required for trade related product differentiation that states may use in WTO conformity. Supporting some labels but not others that achieve similar outcomes would be considered arbitrary and therefore trade obstruction. A preferred treatment for Swiss or local produce on geographic principles would clearly be considered discriminatory and fails to have clear environmental objectives. In addition, all approaches appear to be non-inclusive and discriminatory. Closely linked to both criteria is the lack of transparency mentioned during our interviews. Without an accordant level of transparency, discrimination can not be excluded. Looking forward, it can therefore be assumed that the criteria of non-discrimination and inclusiveness deserve particular attention when designing measures to differentiate sustainable from unsustainable products.

Building on existing measures for product differentiation may be useful but must not lead to delegation of responsibility. Feedback from the interviewees suggests that acceptance of trade measures will largely depend on credibility and practicability. Building on existing tools and experiences from private actors will therefore likely result in higher acceptance than introducing new tools and concepts. High recognition and already established processes for independent verification make ecolabels a good candidate to build on,
as there could be large cost-savings compared to a scenario where a mechanism would first have to be designed, approved, and implemented. However, there are at least two reasons for concern. An often-criticized hindrance of ecolabels is their high certification costs, which questions the WTO principle of minimal intervention. Differentiating along the lines of labeled/unlabeled products should thus be understood as discriminating against unlabeled products that are produced in line with rigorous environmental objectives. To underline the point, the WWF acknowledges different fisheries and aquaculture production systems worldwide to be sustainable, even though they do not carry any label. Furthermore, existing fish ecolabels are far from comprehensive regarding sustainability claims, so they cannot serve as a ready-at-hand solution. These points are of very high importance when considering the observation by Gulbrandsen (2014) that when states rely on private standards for implementing public regulations, they endorse those standards. Although using established means for production differentiation may be justified, it is important that the responsibility for fulfilling sustainability claims remains with governments.

A potential remedy brought forward during the interviews is to introduce a state regulation for sustainable fish production, or for sustainable agriculture production more generally, an option that aligns with the proposition of Roheim et al. (2018). Following the example of the Swiss Organic Farming Ordinance or the EU regulations for organic aquaculture, sustainable production would be defined in the form of a regulation. Instead of leaving the definition to private actors, the state could thus mandate binding requirements for all producers that aim at marketing their products as sustainable. Such a scenario would have different advantages. First, it would allow sustainability to be defined holistically. Compared to existing schemes, other criteria such as social impacts, transparency, and animal welfare could be added on demand. Second, this more holistic framing of sustainability, verified by the state, would add legitimacy to potential claims. Third, the regulations could be designed such as to avoid discrimination across existing standards and labels. Following the examples of the Swiss and EU organic regulations, the standard could explicitly allow the accreditation of third-party schemes that meet all exigencies. In addition to established fish ecolabels, the regulation would thus be open for other certification schemes, including those that overcome identified limitations of ecolabels. Specifically, it could open up opportunities for newer forms of certification such as Participatory Guarantee Systems (PGS) and Geographic Indication (GI). These focus on sustainability at a landscape level, have a stronger focus on regional aspects, and have the potential to better reflect local interpretations of sustainability (Alexandre de Lima et al. 2020; Flinzberger et al. 2020). Fourth, while regulating imports, state regulation for sustainable production would help bridge existing gaps for a national regulation of aquaculture production in Switzerland. Such regulation would harmonize requirements for fish production across cantons and guarantee minimal standards of production within the country. Finally, a regulation could be designed such as to exclude specific production practices when they violate certain principles, without penalizing like-products or entire production systems. As an example, the regulation might acknowledge the MSC label as generally sustainable while specific MSC-certified fisheries, which are regarded as violating sustainability principles, could be explicitly excluded. Likewise, all fish production systems involving any forms of human rights violations could also be excluded. This could be achieved with so-
called “negative lists” (exclusions). Working with “positive lists” (schemes/units in line with the regulation) and negative lists, accreditation of third-party efforts would be efficient and non-discriminatory.

**Conclusion**

The present study has looked at how sustainable fish has been defined in Switzerland, what measures the private sector uses to foster the consumption of sustainable fish, and what states could learn from these experiences. Feedback from interviewed experts suggests that current differentiation between sustainable and unsustainable fish is challenging and that existing tools developed for this purpose have apparently led to discrimination in the Swiss fish market due to subjective interpretation of sustainability by key actors. We have observed that all existing measures to differentiate sustainable from unsustainable fish products have shortcomings, particularly in terms of discrimination and inclusiveness. In addition, higher consumption of sustainable fish products is constrained due to economic reasons. These findings are important. Our findings imply that the Swiss state should play a more important role if it targets to fulfill the promise of article 104a of the Swiss Constitution, which seeks to foster sustainable production and cross-border trade relations that contribute toward this goal. Looking beyond the Swiss border, it can be assumed that governments in general must have an active role in shaping the definition and trade of sustainable fish products, as other countries and the European Union in particular are faced with situations similar to that of Switzerland. We propose that a potential option to increase the production and consumption of sustainable fish is to provide preferred trade treatment for sustainable fish products. When designing measures for product differentiation, a careful choice is paramount so as not to violate existing trade obligations. A regulation that defines what sustainable fish production is could fulfill this requirement. Following the examples of the Swiss Organic Farming Ordinance or the EU regulations for organic aquaculture, such regulation would define key requirements of sustainable production and should be open to accredit third-party efforts targeting the same outcomes. In addition to increasing the share of sustainable products in fish imports, the measure would also ensure the application of sustainable practices in domestic fish production, which currently is not the case in Switzerland.

**Abbreviations**

ASC Aquaculture Stewardship Council

FTUSA Fair Trade USA

GI Geographic Indication

MSC Marine Stewardship Council

PGS Participatory Guarantee Systems
PPM Process and production method

RFS Restaurant and food service

WWF World Wide Fund

Declarations

**Ethics approval:** Not applicable

**Consent to participate:** All interviewees gave their prior consent to participate in the interviewees. Participation was voluntary and could be stopped at any time during the interviews.

**Consent for publication:** All interview participants gave their consent that their answers might be used for publication as long as it was published anonymously.

**Availability of data and material:** On demand from some interviewees, the authors decided not to publish interview transcripts. This is justified in the fact that the affected industry is small and that certain statements might be linked to the corresponding interviewees, resulting in unwanted consequences or repercussions. The authors are however open to consider sharing specific information on the demand, based on a case-to-case decision.

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**Author’s contributions:** UB worked on the conception of the work, carried out the interviews and data collection, analysed and interpreted the data, and elaborated the manuscript. EB worked on the conception of the work and revised the manuscript.

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**Authors’ information:** UB is a multidisciplinary environmental expert with many years of practical experience working at various levels in international development. UB has worked on improving the governance of fish production and related value chains for more than ten years, working all along value chains and with a multitude of stakeholders. His research interest is centred around the understanding of people’s interactions with their environment.

EB is part of the University of Bern’s Centre for Development and Environment (CDE), which has longstanding experience in transferring scientific insights into policy and practice. Based on her work as a legal expert on various politically sensitive topics, she has repeatedly been invited to present her findings
in parliamentary commissions and to advise public agencies and civil society organisations in Switzerland and Germany. She is engaged in discussions with academia, government agencies, and civil society organizations on issues related to trade and sustainability.

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Figures

Figure 1

Actors that shape the definition of “sustainable fish” in Switzerland
Figure 2

Estimated total share of “sustainable fish” products in Switzerland's RFS (left) and retail (right) sectors. Based on publicly available data and feedback from interviews.
Figure 3

Share of experts (green) who consider WWF-recommended ecolabels as representing a “sustainable choice”