



# Is Marine Stewardship Council's ecolabel a rising tide for all? Consumers' willingness to pay for origin-differentiated ecolabeled canned tuna

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## ABSTRACT

The Marine Stewardship Council's (MSC) sustainable seafood ecolabel covers about 10% of total seafood catch globally. Despite its prevalence, consumer willingness to pay (WTP) for MSC-certified imported seafood is not well understood. Using a choice experiment conducted with an American-consumers sample, this study measures the differences in WTP for American, Ecuadorian, and Vietnamese canned tuna. The results noted two things. First, the ecolabel induces country-specific effects, where the marginal WTP for the MSC label is higher for the imported products than for the domestic product; second, consumers prefer domestic products *ceteris paribus*, nevertheless, the premium of the ecolabel—when attached to the imported products—may partially eclipse preference for domestic products without the ecolabel. The results imply that the MSC ecolabel may generate a more favorable effect when applied to products from developing countries.

## 1. Introduction

The MSC ecolabel's main purpose is to facilitate the market for sustainable seafood. The ecolabel enables the price premium associated with MSC labeled products to flow back to sustainable producers. As the result, it incentivizes improvements in key management problem areas in sustainable seafood production, including stock assessment, total allowable catch enforcement, proactive fisheries engagement in management, and transparency and efficiency of fishing rights management [1,2]. As seafood trade flows in large quantities and values from developing to developed countries [3,4], a pertinent question is if the ecolabel generates premium and adds competitive advantage to the imported products from developing countries in the more developed importing country. This question may especially have development and sustainability implications for many small-holder fisheries that “rhymes with poverty” in developing countries [5], adding to the discussion on the role of ecolabel in development. Whether the MSC can deliver disruption to the environmental-poverty nexus—propelling capacity improvements in institutions and market, and breaking the chain of

endogenous poverty and environmental degradation—may depend if participating makes financial sense to the affected fisheries, intermediaries, and other stakeholders [6,7].

Nevertheless, only a limited number of developing country fisheries participate in MSC. The lack of realized return is often viewed as a major stumbling block, given the often substantial financial and technical costs to obtain the certificate [8–11]. MSC maintains Chain of Custody that provides traceability of the product back to certified fisheries [12]. The costs of the audit range from US \$10,000 to US \$500,000, depending on the complexity [11,13]. To illustrate, the cost amounts to a 7.6% price premium for a Japanese flathead flounder fisheries [8]. Given the cost, fisheries' interest in the labeling scheme must be sustained by sufficient price premium.

Despite contributing half of the value in global seafood trade [4], developing country fisheries only account for 8% of the almost 200 total MSC certified fisheries [14]. Consumer WTP for MSC-certified imported seafood could set off a chain of reactions [15]: i.e. higher end-consumers' demand, to higher retailers' demand, to higher intermediaries' demand, and ultimately, higher incentive to participate for

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these fisheries that export their catch. Further, information about consumer willingness to pay (WTP) for MSC-certified product may also increase transparency of prices, empowering fisheries to negotiate a better price. Especially to small-scale fisheries that often lack information about the basic market price, much less the premium generated by the ecolabel [16].

The literature is rather limited and ambiguous, as to whether consumers in developed countries are willing to pay a premium for sustainable imports from developing countries. On one hand, Japanese consumers are willing to pay a higher marginal premium for ecolabel on the product of Chile, than when the ecolabel is attached on the product of Alaska, Norway, and even Hokkaido [17]. On the other hand, Americans are found not willing to pay for ecolabeled-imported aquaculture, while willing to pay a premium for the ecolabeled-domestic product; it leads to the rather bleak conclusion “Americans do not place as much importance on environmental stewardship in other countries as they do in their home country” [18], page 629. The discord raises questions: are consumers really willing to pay a premium for MSC labeled imported from developing countries? Nevertheless, if the conclusion drawn on Americans is true, it justifies the reluctance to participate by fisheries who cater to the US market. For exporting fisheries and businesses vying for a piece of the economic pie of MSC in the US market, an immediate question is: *is there really a pie to begin with?*

This study uses a choice experiment to assess the US consumers’ WTP for MSC-certified products, differentiated by the country of origin. The choice of American consumers sample is a direct response to the lack of WTP noted in [18]; the sizeable volume of seafood imported by the US further justifies the scope [19]. Further, the decision to pinpoint on MSC, as opposed to a generic seafood ecolabel or other peers of MSC, is motivated by the MSC’s prominence. In this study, we specifically analyze how the MSC ecolabel affects consumers’ WTP for imported products from selected developing countries. Hence, we use the actual MSC ecolabel—as opposed to a generic “sustainably-produced” attribute.

### 1.1. A brief background of MSC

MSC-certified sustainable seafood is highly visible in the US: the blue-fish check mark is in Walmart, Kroger, Costco, and other retailers; it occupies the center stage on McDonald’s Filet-o-Fish sandwiches. Now, even pets can enjoy sustainably-produced seafood fare [20–23]. The fifth-largest seafood consuming nation in gross volume, the US, imports nine-tenths of its seafood consumed; and Americans’ interest on food ethics issues are rapidly growing [24–26]. These underscore the consequentiality of Americans’ reception towards MSC-labeled imported seafood.

MSC does not certify fisheries directly. Rather, they set the standards for sustainable fishing. Third-party auditors verify if a fishery meets the standards. These activities, as previously noted, may come with a hefty price tag. Given the costs, economic sustainability requires that the price premium associated with certification should exceed the cost of obtaining certification [11]. The exit of Alaskan salmon processors from MSC and the revealing of no significant ex-vessel level price premium for a Mexican lobster fishery indicate that the certification may not always be good for the bottom line [10,27].

Overall, the knowledge is rather scarce on Americans’ WTP for MSC, a seafood market of \$18.8 billion in 2015 [19]. Only one-third of those surveyed, including Americans, recalled seeing the MSC logo [28]; only one-tenth could tell what the logo stands for when it is stripped of its wording [29]. The lack of public awareness about the MSC ecolabel may undermine WTP for the ecolabel.

### 1.2. Consumer WTP: sustainability and country of origin

The low public recognition of MSC suggests that “sustainability” may not always be synonymous with the MSC ecolabel. Therefore,

distinctions need to be drawn on the different ways “sustainable” seafood are examined in the literature.

Consumer WTP for various “sustainably-produced” labels is observed: British consumers are willing to pay for “certified for sustainability” seafood [30]. Niche shoppers in Portland, Oregon are willing to pay for “sustainable ecosystem certified” seafood [31]. Americans are willing to pay for “eco-friendly” domestic aquaculture products, but not “eco-friendly” imported aquaculture [18]. Similarly, Japanese consumers prefer seafood “with ecolabel” [17].

Others investigate MSC-specific WTP with consumer studies. At the dawn of MSC — a study found that there is no significant difference between the MSC ecolabel and other similar hypothetical ecolabels certified by other agencies [31]. Others noted that the WTP for MSC is contingent upon consumers being informed about the role of MSC and the dire state of ocean ecology [17,32], suggesting that the premium for MSC depends on consumer knowledge about issues related to MSC.

Price premiums in retail settings may infer consumer WTP. In one study, consumers were found to be paying a premium for MSC-certified products sold in London supermarkets [9]. Others found premiums ranging from 10% to 14% in U.K. supermarkets [33–35]. In contrast, the German market is found to exhibit a mere 3% of price premium [36].

Sun et al. investigate American demand for “eco-friendly” seafood defined by bycatch-reducing fishing gear [37]; they observe elastic own-price for the eco products, and also elastic cross-price substitution for conventional products, signaling a ceiling to the price premium of ecolabeled seafood. These further highlight the importance to understand American WTP for the MSC ecolabel, as the premium varies by regions, and faces a low ceiling.

On the other hand, consumers exhibit a robust preference for domestic food against imports. For seafood and aquaculture products, multiple studies have observed a consumer preference for domestic products in the US, Europe, and Japan [17,18,38–41]. Similar observations on other food products reinforce the notion of domestic preference [42–44]. Assuming a premium exists for MSC-certified imported products, whether the MSC label could elevate the competitiveness of imported seafood is of interest.

While the correlation between attentiveness to origin and sustainability is noted [41], few empirical works investigated the question. Uchida et al. [17] examined how “eco-labeled” products interact with product origins (Alaska, Chile, and Norway). Ortega et al. [18] approached from the angle of aquaculture imported from China and Thailand and found no premium for the ecolabel on the imports; nevertheless, “eco-friendly” and “government verified eco-friendly” are the investigated ecolabel, which might not be representative of the MSC ecolabel.

## 2. Method

Choice experiment is used in this study. The method enables analysis of consumers’ product choices—mirroring the tradeoff between prices and other attributes, from which theoretically-consistent marginal utility and willingness to pay are derived [45–47]. The method is used in related studies, which demonstrate its suitability in this study’s context [17,18,31,48].

### 2.1. Design of the choice experiment

The experiment features canned tuna,<sup>1</sup> as in related previous studies [37,49,50]. Canned tuna is one of the most consumed seafood in the U.S. [51]. In particular, its stable shelf life lessens potential food-safety

<sup>1</sup> More specifically, a 5 ounce can of “Chunk White Tuna”, which refers to albacore tuna in chunk size, was used. This choice is motivated by the goal to use a commonly consumed product.

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