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Document Version
Final published version

Published in:
Ecological Economics

DOI:
10.1016/j.ecolecon.2021.107303

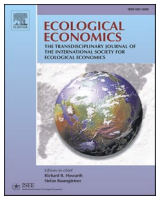
Publication date:
2022

Ecological Economics 193 (2022) 107303

Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon



Analysis

Harnessing relational values for global value chain sustainability: Reframing the roundtable on sustainable palm oil's offset mechanism to support smallholders

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ARTICLE INFO

Keywords:
Relational values
RSPO
Global value chains
Private standards
Certification

ABSTRACT

In credit systems, purportedly sustainable activities are undertaken in one place to compensate for unsustainable activities elsewhere. These mechanisms originated in pollution abatement systems but now are found in many sustainability programs, including supply chain certification. Credit programs are used in various sustainability certification programs to lower transaction costs, boost uptake, and direct more resources to small producers, but they are also controversial. The relational values framework argues that one way to motivate people to support sustainability efforts is to emphasize what behaviors are appropriate to specific relationships. We ask whether changing the way we think and talk about credits may be a way to direct more resources to producers or places willing to engage in sustainability certification. Using an embedded survey experiment, we test this reframing with a sample of representatives of member organizations of the Roundtable on Sustainable Palm Oil (RSPO). We find that the relational values reframing of the RSPO's crediting mechanism is perceived to be less confusing and potentially damaging to the standard's reputation than the existing framing. This evidence suggests that relational values frames might be helpful tools as part of efforts to improve sustainability in global value chains.

1. Introduction

Several state and private environmental governance initiatives employ some version of a credit system. In these systems, action is taken in one place, in principle at lower cost, to compensate for the negative externalities of actions taken elsewhere. Common examples of these mechanisms, employed in both public and private systems, include payments for ecosystem services (Wunder, 2005, 2013; Muradian et al., 2010; Barrett, 2013; Chan et al., 2016), renewable energy credits (Berry, 2002; Mozumder and Marathe, 2004; Singh, 2009), stream and wetland mitigation banking (Lave et al., 2008; Levrel et al., 2017; Robertson, 2004), biodiversity credits (Ives and Bekessy, 2015), and emission trading markets (Ellerman et al., 2016; Fuss et al., 2018; Hitaj and Stocking, 2016; Kumar and Managi, 2010; Wu et al., 2019). In addition to models like these, credit mechanisms are also found in several commodity-based sustainability certification standards. The Roundtable on Responsible Soy (RTRS)'s RTRS Credits system, in which certified operations produce soy according to the standard and then sell credits for their tonnage before selling their products on the standard market (Roundtable on Responsible Soy, 2020), is a good example. Bonsucro's (2020) recently developed Credit Trading Platform, used for certified sugar production, is another.

Despite their widespread use, credits have come in for significant criticism, particularly in regard to their effectiveness, for which evidence is often lacking, and equity, as they certainly seem to favor the more affluent (Apostolopoulou, 2020; Josefsson et al., 2021; Karlsson and Björnberg, 2020; Zu Ermgassen et al., 2019). It is the second issue, equity, with which we are most concerned here, because such ethical concerns are often an important factor in actors' calculations about whether or not to use crediting mechanisms (Ives and Bekessy, 2015).

To be blunt, we argue that it's time to bury credits, but also to praise them. Certainly, credits can support inclusion in global value chain sustainability programs. To be successful, these programs must reconcile pressure to maintain rigorous standards while making those standards accessible and attractive even for smallholders and other groups with limited resources (Auld et al., 2015). However, credits might be more

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https://doi.org/10.1016/j.ecolecon.2021.107303
Received 20 January 2021; Received in revised form 15 May 2021; Accepted 18 November 2021
Available online 4 December 2021

effective - and honest - if we were to reframe our understanding of what they are and do. Our argument and analysis derives from recent work on "relational values" (Chan et al., 2016), which contends that, in practice, people often make ethical decisions on the basis of attitudes toward what actions they believe are appropriate with respect to specific relationships. Taking sustainable soy production as example, a relational values perspective might suggest that directing people's attention to relationships between themselves and others (through, for instance, messaging about smallholder livelihoods), and/or between human and non-human phenomena (such as messaging about consumers' environmental responsibility), may more effectively tap into their values than strictly instrumental framings.

From a relational values perspective, voluntary credits' most common framing is questionable. In principle, credits should be a last-case mitigation option, allowing firms to compensate for actions whose avoidance is particularly costly at the margin by substituting less costly actions elsewhere (Kotchen, 2009; Tientenberg, 1985). Rather than establishing a relationship between consumers and primary producers, credits ask consumers to enter into a relationship with a third party of credit sellers, though the nature of this relationship is rarely made explicit. That credits mean not all abatement takes place within a single firm's supply chain invites criticisms characterizing credits as "indulgences" or "licenses to pollute" that don't motivate genuine internal abatement efforts (Meckling, 2011). The problem becomes worse in commodity, biodiversity, or ecosystem offsets, where the exact nature of the abatement being traded is vague.

To study how a relational values framing might affect stakeholders' perceptions of credit mechanisms in a deforestation-linked value chain, we use data collected in survey of Roundtable on Sustainable Palm Oil (RSPO) members addressing the RSPO's credit mechanism, RSPO Credits (Gallemore and Jespersen, 2019). RSPO Credits are similar to mechanisms used in other sustainability standards and are described in more detail below. Our survey tested a simple intervention: redescribing RSPO Credits as certified monetary contributions to sustainable palm oil production, rather than as ways of offsetting unsustainable palm oil tonnage. This change, which could be carried out at almost zero cost, essentially converts the mechanism's framing from an instrumental to a relational logic, emphasizing relationships with people and places, rather than market exchange. We find that, regardless of any additional qualifications (focusing on smallholders or focusing on specific jurisdictions), this change results in a significant reduction in respondents' concerns about the reputational effects of including the credits mechanism in the RSPO standard.

In the following section, we provide an overview of the indulgences critique and the RSPO Credit system, arguing that systems like RSPO credits are often viewed skeptically but are nevertheless potentially useful for promoting uptake among smaller operations. We then present the relational values perspective in more detail, explaining why we believe that framing a sustainability choice in this way may be a more straightforward and effective means of supporting inclusion without invoking questionable claims about offsetting. We then explain our survey methodology and the embedded experiment we used to test our credit reframing before presenting the key experimental results. We close with a discussion of the potential benefits of further integrating insights from behavioral economics into work on global environmental standards and how the proposed reframing of credits might make these mechanisms work more effectively within existing standards.

2. The Indulgence Critique and RSPO Credits

Several sustainability certification systems related to global land use include credit mechanisms, which reward the sustainable production despite that firms continue to purchase goods through regular supply chains. A common critique of such systems, however, characterizes them as a form of "indulgence" or "license to pollute" permitting the rich to continue with unsustainable behaviors while paying for the privilege of doing so. While the "license to pollute" framing has been used by both credit opponents and proponents (Barr, 1991; Meckling, 2011), the "indulgence" frame has been uniformly negative, starting in debates about carbon credits and becoming more common around 2006, following revelations of Al Gore's apparently outsized carbon footprint, offset using credits (Nerlich and Koteyko, 2009). As a 2007 Carbon Trade Watch report put it, "There are new indulgences on the market in the form of carbon credits. [. . .] [S]elfstyled 'eco-capitalists' are building up what they claim are 'good climate deeds'[. . .]. These wholesale emissions reductions can then be profitably sold back at retail prices to modern-day sinners who have money, but not necessarily the time or inclination to take responsibility for their emissions [. . .]" (Smith et al., 2007, p. 5). Perhaps most prominently, the indulgences critique appears in Pope Francis's, 2015 encyclical *Laudato Si*, where the pontiff considers that the carbon credit "system seems to provide a quick and easy solution under the guise of a certain commitment to the environment, but in no way does it allow for the radical change which present circumstances require" (Francis, 2015, par. 171). The objections become even more powerful when looking at more contextual processes, like biodiversity or ecosystem quality, where complexity, local contexts, and perceptions of nature's intrinsic or relational value make claims of equivalent change difficult to maintain and where evidence that exchanges are in fact equivalent is scant (Josefsson et al., 2021; Karlsson and Björnberg, 2020; Robertson, 2004).

Yet credit mechanisms have their benefits. In the RSPO case, for example, they are a central component of strategies for smallholder inclusion. While smallholder operations are not inherently more sustainable or ethical than larger enterprises (Ayompe et al., 2021; Castellanos-Navarrette et al., 2021), it may be easier to support biodiversity on smallholder plots than the industrial plantations for which certification is more accessible (Azhar et al., 2017). Smallholder production, furthermore, is extensive. Smallholder plantations in Indonesia, for example, cover more land than all the plantations in any other country except Malaysia (Descals et al., 2021). Like industrial plantations, smallholder operations can also result in forest displacement and appear to account for a growing share of such displacement in some production zones (Meijaard et al., 2020; Ordway et al., 2019).

While an important part of global production, smallholder oil palm plantations face several barriers in achieving sustainability certification. These include a lack of formal tenure, limited financing, lower yields than industrial operations, and the costs of organizing collaboratives for group certification (Adrianto et al., 2019; Apriani et al., 2020; Bakhtary et al., 2021; Glasbergen, 2018; Hutabarat et al., 2019; Jelsma et al., 2017). Costs aside, smallholders appear to receive benefits from certification, though findings are heterogeneous (Majid et al., 2021). Increased remuneration is often a primary, even sole, reason for them to get certified (Apriani et al., 2020; Hidayat et al., 2015; Saadun et al., 2018), and certification may lead to higher yields (Apriani et al., 2020; Furumo et al., 2020; Hutabarat et al., 2019; Hidayat et al., 2016).

In the RSPO context, credits help smallholders to bypass transaction-cost-heavy traceable certified value chains. Under the scheme, a producer generates one ton of oil palm in compliance with the RSPO's Principles and Criteria (P&Cs), registers its production, and then sells it in conventional, rather than sustainably certified, supply chains. The producer can then sell a credit for a ton of production to a downstream RSPO member, who uses the credit to claim support for the production of one ton of RSPO-certified palm oil (See Fig. 1).

Several prominent RSPO members, as well as numerous internal and external critics are skeptical of the credit system and often invoke the indulgence critique (Gallemore and Jespersen, 2019; Richardson, 2015). A recent report from the Changing Markets Foundation, for example, argues that "the core founding principle of certification" is the link between firms' sustainability claims and the physical product they purvey. However, "through paying for these 'indulgences' [i.e., RSPO Credits], operators are absolved of responsibility to monitor the sustainability of their [own] supply chains" (Brad et al., 2018). While avoiding the

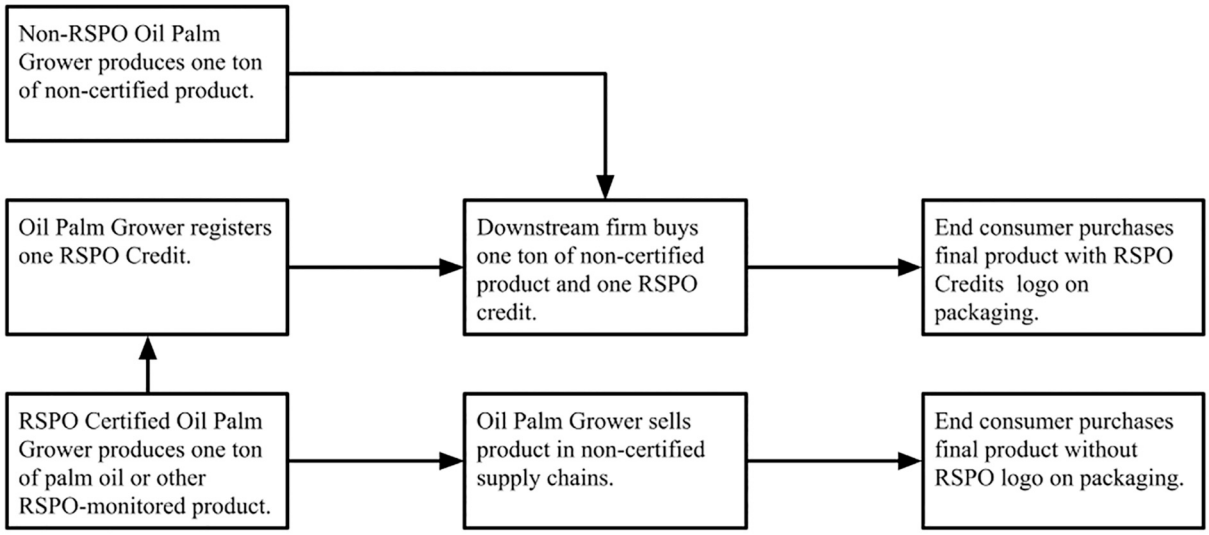

Fig. 1. Schematic representation of the RSPO Credit mechanism.

indulgence language, the RSPO Secretariat and leading member organizations frame RSPO Credits as a stepping stone on the way to physically separate RSPO-certified supply chains, and member firms that purchase credits tend to transition out of the system over time (Gallemore and Jespersen, 2019). In part, this reflects the fact that traceable supply chains may be seen as more ethical than credit mechanisms (Selwood, 2020).

These justifiable concerns about RSPO Credits may contribute to a further problem: prices are volatile and low, likely insufficient to incentivize substantial upscaling among smallholders and failing to compensate for upfront costs in the initial years of certification (Glasbergen, 2018; Hutabarat et al., 2018). These shortcomings mean the RSPO system risks favoring more industrial operations. As Santika et al. (2021) observe, even considering only industrial plantations, RSPO-certified operations tend to be much larger, on average, than their conventional competitors, reflecting both capacity and the fact that such producers may be more likely to respond to incentives emanating from downstream in more affluent markets.

In short, the preference for traceable supplies may reward industrial-scale operations while locking out smallholders, raising several problems. First, the socioecological impacts of industrial plantation certification appear to be minimal or potentially even negative in frontier areas and regions that are marginal for oil palm production (Heilmayr et al., 2020; Morgans et al., 2018; Lee et al., 2020; Santika et al., 2021). Second, an analysis by Tapia et al. (2021) shows that much of the non-forested land suitable for palm oil in Indonesia is fragmented across the country, making it less attractive for industrial than smallholder development, which they contend could be facilitated with more effective certification standards. Finally, as noted above, smallholders make up a large share of global producers and lands under production.

While we do not claim there is yet sufficient evidence to determine whether or not RSPO certification is more effective at the smallholder than the industrial scale, it nevertheless seems reasonable to consider whether there might be an accessible way to make the RSPO Credit system - and other credit mechanisms like it - fitter for purpose. We believe the emerging research on relational values provides a possible way forward.

3. Relational Values in Global Value Chains

Chan et al. (2018) distinguish relational values by characterizing them as relational "in content." That is, they emerge from prescriptions about desirable characteristics of relationships either among humans or between humans and the non-human world (Jones and Tobin, 2018). The importance of relational specificity can be seen, for example, in discussions that center an ethics of care in environmentally directed relational values (West et al., 2018), which imply a particular relationship between two beings. Perspectives on these relationships can meaningfully affect environmental behaviors, making them worthy of consideration when designing environmental policies (Olmsted et al., 2020).

Advocates of this perspective argue that relational values are distinct from both instrumental values, based on the benefits nature can offer to humans, and intrinsic values, based on the natural world having worth in and of itself (Chan et al., 2016). An individual tree, for example, might have instrumental value because it sequesters carbon or because it can become a book. It might have intrinsic value because it is part of a threatened species understood to have inherent worth or is respected as a living individual being. Neither instrumental nor intrinsic value, however, quite captures the cultural significance the tree may hold for a group of people, or its place in a relational network composing a landscape that forms part of communities' and individuals' identities, sense of place, or collective social cohesion. Nor do these other forms of values capture the way relationships between humans might also imply proper comportment toward the non-human world. As Klain et al. (2017), explain, relational value framings are intended, on the one hand, to reflect how people's relationships with the non-human world incorporate such concerns as justice, reciprocity, and care and, on the other, to provide common vocabulary to discuss place-related concepts in psychology, geography, philosophy, anthropology, environmental studies, and other fields in conversation (Chan et al., 2016; Chan et al., 2018).

Several studies have employed these ideas. Arias-Arévalo et al. (2017), for example, surveyed residents of a Colombian watershed to identify expressed motivations for ecosystem protection, finding relational values concerning the sacredness of the watershed and its role in supporting local livelihoods and social practices were more commonly asserted than either instrumental or intrinsic values. Gould et al. (2019) compare the relational values framework with indigenous Hawaiian values regarding human-non-human relationships, arguing that they are broadly compatible and suggesting relational values may be a useful vehicle for expressing indigenous perspectives on sustainability. Russell et al. (2020) document similar resonances with perspectives on human-nature relations among Australian indigenous peoples, documenting relational values including spirituality, kinship among humans and between humans and non-humans, and the role of non-human entities in supporting knowledge transmission and cultural maintenance in a study

of indigenous relationships with billabong environments. Spanou et al. (2020) find relational values such as place identities, spiritual values, and interactions with non-human nature to be positively related to scenic and protected areas in Scotland. Gale and Ednie (2020) find evidence that people in Chile prefer solutions incorporating similar relational values in a hypothetical national park planning process. Mould et al. (2020), in a qualitative case study based on semi-structured interviews, find relational values, particularly a sense of a responsibility of care for local waterways, landscapes, and communities, are important motivators for engaging with ecosystem management.

While these and numerous other early studies indicate relational values' potential use as an empirical construct, they also are based on attachment to a concrete place and community. Many environmental problems, however, are linked to long-distance connections between consumption and production areas (Hull and Liu, 2018; Liu et al., 2013; Newig et al., 2020). Even if such situations might be a hard case for relational values, they still might provide tools to, as Newig et al. (2020) put it, "improve informational instruments in inducing inter-regional empathy among consumers." There are a couple of reasons to be hopeful about relational values' utility even in these contexts. First, there is some preliminary evidence that relational values can affect conservation attitudes among tourists who have no historical connection to a particular place (Olmsted et al., 2020). Second, there is evidence from complementary research agendas that relational values might be effective across distance. Some studies of consumers' consumption decisions, for example, find empathy to be an important factor motivating pro-social purchases (Doran, 2010; Gillani et al., 2019; Lee, 2016; Zerbini et al., 2019), though other studies dispute this connection (Hwang and Kim, 2018). The capacity to imagine a relationship with a commodity's producer, in other words, might support pro-social purchasing behavior.

A more challenging objection to the relevance of relational values for managing telecoupling is that the key decision makers in global value chains are corporate managers constrained by their institutional positions to think only in instrumental terms. Even in this case, there are a few reasons relational values might be efficacious. First, there is considerable evidence that risks to reputation or stakeholder legitimacy are primary motivations for firms to engage in environmental certification or corporate social responsibility efforts. Hofmann et al. (2013), for example, conceptualize supply chain sustainability risks as threats to firms' perceived legitimacy, and Boiral et al. (2017) find qualitative evidence that external legitimation can be a motive in managers' decisions to adopt biodiversity certifications. Hockerts (2014) finds that employees include risk reduction and brand management in their calculations about sustainability efforts. To the extent that activating relational values (even if the corporate decision maker is not thinking in exactly those terms) might be an additional means of building perceived legitimacy at low cost, then such strategies might be more attractive than strategies that engage instrumental values alone. Second, there is some evidence even corporate decision makers are not immune to behavioral claims arising from relational values. In an online experiment testing business case versus responsibility (essentially, relational values) justifications for corporate sustainability efforts among a sample of business professionals, for example, Rode et al. (2020) find that responsibility messaging functions as well as business-case messaging in motivating pro-environmental investments and outperforms business-case messaging in motivating pro-environmental investments in the absence of reputational benefits.

Furthermore, firms active in some global value chains seem to be adopting strategies more reflective of relational values framings, providing messaging not just about product contents and quality, but also about the types of relationship their products can establish between consumers and primary producers. These trends have recently been noted in commodities such as chocolate (Thorlakson, 2018), coffee (Bager and Lambin, 2020; Grabs and Ponte, 2019), and palm oil (Gallemore and Jespersen, 2019). The growing number of corporate zero-deforestation supply chain commitments that highlight large transnational firms' ethical responsibility for environmental stewardship in the specific places from which their supply chains originate are another example (Garrett et al., 2019). In the following section, we explain how we go about testing the hypothesis that relational values framings might be more attractive mechanisms for encouraging private efforts to promote supply chain sustainability.

4. An Embedded Survey Experiment Reframing the RSPO Credit System

As we argued above, RSPO Credits are currently framed instrumentally, placing the focus on downstream firms' attempts to offset their use of conventional palm oil by purchasing credits for an equal portion of RSPO-certified production. In this framing, sustainable production is understood as a fungible object that can be moved from place to place via creditting. As a result, the relationship between the downstream firm and upstream producers is relatively obfuscated. The conventional oil suppliers are deemphasized, but so is the relationship between the firm and the producer that generated the RSPO Credits. Moving this from an instrumental to a relational frame, by contrast, would mean emphasizing the relationship between the downstream firm and the upstream producer, rather than the credit's instrumental value.

To test the hypothesis that reframing the RSPO Credit system from an instrumental, offset-oriented creditting perspective to a relational perspective would improve member firm representatives' perceptions of the system, we conducted an embedded survey experiment. In this experiment, we exposed respondents to a members-only survey on the RSPO Credit system to one of four different prompts that described the mechanism in familiar or unfamiliar terms. The control condition simply described the RSPO Credit system in simple terms, slightly adapted from the RSPO's own standard description of the system. This framing emphasized the credit buyer's right, under the RSPO rules, to claim support for the production of a certain tonnage of palm oil.

The control condition, in which the RSPO Credit system was described in normal terms, was tested against three treatment conditions, all of which emphasize not the instrumental value of the credit but, rather, the relationship that the payment establishes between the credit buyer and producer. While avoiding the word "credit", each description was consistent with how RSPO Credits operate in practice. In keeping with the relational values argument that people can be motivated by normative characteristics of relationships with both humans and non-human entities like places, one condition emphasized the relationship with a place, while two emphasized relationships with people. For the place emphasis condition, we drew on then-emerging debates about the merits of jurisdictional certification. Under a jurisdictional model, all the producers in an entire area would be certified as RSPO producers (Seymour et al., 2020; von Essen and Lambin, 2021). For the two conditions emphasizing the relationship with other people, considering the importance of smallholders in discussions about RSPO Credits explained above, we included one condition in which the recipients were referred to as smallholders and one condition in which they were identified with the much more generic term "producers."

The four descriptions used in the embedded experiment item are shown in Table 1. The survey item in which they were presented was designed to encourage the respondents to consider the program described from the perspective of the RSPO system as a whole, and the possible responses, presented in Table 2, were intended to prompt respondents to distinguish between their views as a representative of an RSPO member organization and their assessment of how the program might affect the RSPO system as a whole. While, as in any survey, there is always a possibility of misinterpretation and error on the part of the respondents, we have no reason to expect such errors to be systematic.

The experiment was administered as part of an online survey of RSPO member organizations conducted in July and August of 2019. The survey was designed in collaboration with RSPO Secretariat staff as part of a consultation project applying behavioral economics principles to the

Table 1
Embedded experiment prompts, with the number of respondents in each condition with sufficient data for statistical analysis.

Condition	Prompt
Control/ Credits (N = 91)	Please read the following description of a RSPO Supply Chain Model and then select all of the following statements about the model with which you agree: One way that firms can engage in the RSPO is by buying RSPO Credits. An RSPO Credit is proof that one tonne of certified palm oil was produced by an RSPO-certified company or independent smallholder, and has entered the global palm oil supply chain. RSPO members who have purchased RSPO Credits are entitled to claim their support for the production of sustainable palm oil but cannot claim that the product contains sustainable palm oil.
Smallholders (N = 88)	Please read the following description of a hypothetical RSPO programme and then select all of the following statements about the program with which you agree: One way that firms could engage in the RSPO is by helping independent smallholders with the added costs of sustainable production. The RSPO arranges payments from firms to independent smallholders to assist with the costs of converting to or maintaining sustainable production. RSPO members using this mechanism can report the total amount of money given to support smallholders through the system, the percentage of the firm's revenues or profits contributed to the system, and/or the amount of funds contributed per ton of certified palm oil smallholders produce.
Producers (N = 110)	Please read the following description of a hypothetical RSPO programme and then select all of the following statements about the program with which you agree: One way that firms could engage in the RSPO is by helping producers with the added costs of sustainable production. Through PalmTrace, the RSPO arranges payments from firms to producers to assist with the costs of converting to sustainable production. RSPO members using this mechanism can report the total amount of money given to support producers through the system, the percentage of the firm's revenues or profits contributed to the system, and/or the amount of funds contributed per ton of certified palm oil produced.
Jurisdictional (N = 85)	Please read the following description of a hypothetical RSPO programme and then select all of the following statements about the program with which you agree: One way that firms could meet their RSPO commitments is by helping producers in areas pursuing jurisdictional RSPO certification with the added costs of sustainable production. Through PalmTrace, the RSPO arranges payments from firms to producers in jurisdictional certification areas to assist with the costs of converting to sustainable production. RSPO members using this mechanism can report the total amount of money given to support producers through the system, the percentage of the firm's revenues or profits contributed to the system, and/or the amount of funds contributed per ton of certified palm oil produced.

Table 2
Evaluative statements used to assess respondents' attitudes toward the program description they read during the embedded experiment.

This programme would complement my firm's supply chain traceability efforts
This programme will scale up landscape impacts
This programme undermines the credibility of the RSPO
This programme strengthens the RSPO brand
I would expect my organization to allocate funds to this programme in the future
My organization will reach 100% CSPO by 2020, as committed
My organization should support this programme
This programme can help independent smallholders adopt more sustainable practices
My firm could use this programme to go beyond our requirements for RSPO compliance
Firms in the palm oil industry should support this programme
This programme can confuse consumers

organization's activities (the complete survey, in English, is available in this article's replication package). The survey design benefited from the researchers' experience studying the RSPO's operations over the three prior years, working directly with the RSPO Secretariat staff for approximately a year before the survey was deployed. Secretariat staff drew on their experience to help formulate questions that would be meaningful to the membership and relevant to ongoing initiatives. They also promoted the survey on the RSPO website, through RSPO newsletters, and in direct communication to members. The staff played no role in the analysis and interpretation of the data, and the conclusions presented here are the authors' own. To be very clear, we make no claims that anyone at the RSPO would endorse the ideas we present.

The survey was originally composed in English, and native speakers translated the text into Spanish, Bahasa (Indonesia/Malay), Chinese, and Japanese. Responses were anonymous, though respondents were permitted to submit their email address using a separate survey for a drawing for one of five $100 gift cards for an online retailer.

The survey began with a series of general questions collecting information about respondents' role in the palm oil supply chain, organizational geography, and RSPO membership duration. These items were followed by two questions about the respondents' organization's primary reasons for RSPO membership.

The embedded experiment item followed these preliminary questions. Following exposure to one of the descriptions in Table 1, respondents were provided a list of evaluative statements about the program described in the prompt, instructing them to select all those with which they agreed. These evaluative statements are presented in Table 2. Following the embedded experiment, the survey included items collecting information on the respondents' attitudes toward credits more broadly.

4.1. Statistical Analysis

Because we anticipated that responses on several of the evaluative statements presented in Table 2 were likely to be positively or negatively correlated, and because we wanted to assess the overall impact of the different treatment conditions while minimizing our assumptions, we decided to use polytomous variable latent class analysis (LCA) as implemented in the poLCA package (Linzer and Lewis, 2011) in R 3.6.2 (R Core Team, 2019) to model our experimental results, visualizing results using the ggplot2 package (Wickham, 2016). Latent class analysis is an attractive tool for our purposes because it reduces the dimensionality of our dependent variable, identifying clusters of respondents who agree with similar evaluative statements with respect to their program description. This groups respondents who viewed their program similarly, making it easier to compare overall attitudes across experimental conditions.

Commonly used to classify respondents according to a series of categorical survey items, latent class analysis estimates the probability that each observation falls into one of a number of groups set by the researcher, such that, conditional on group assignment, the observation's value on each categorical variable is random. In addition to setting the number of clusters to estimate, researchers can also estimate the model simultaneously with a multinomial logistic regression predicting cluster membership. We used this technique to determine how respondents' experimental condition affected their overall response to the described program. LCA model selection can be performed using the Schwarz Bayesian Information Criterion (BIC), allowing researchers to select the optimal combination of cluster number and explanatory variables by estimating several models with different cluster numbers and explanatory variables and selecting the one with the lowest BIC. This clear criterion for model selection allows the researcher to model the relationship between independent variables and a large set of categorical dependent variables simultaneously with minimal assumptions.

Because there is evidence that RSPO members' attitudes toward different features of the standard may differ based on headquarters

location (Gallemore et al., 2018; Gallemore and Jespersen, 2019), we further disaggregated our analysis, estimating logistic regressions predicting the likelihood that each respondent responded positively to each statement following the experiment item. Using these models, we investigated differences in treatment effects across geographic divisions separating organizations headquartered in Europe (including Russia), the US, Canada, and Australia, the markets where the environmental impacts of palm oil consumption have emerged as a significant political issue, from organizations headquartered in other parts of the world.

5. Results

The survey collected responses from 420 individuals who completed at least 70% or more of the items. Assuming one respondent per organization, a response pattern the recruitment process was designed to elicit, this amounts to approximately 10% of the total RSPO membership when the survey was administered. While a larger sample would of course be preferable, RSPO secretariat staff expressed the opinion that this was a much higher response rate than most surveys they deployed. Table 3 presents the breakdown of respondents by membership sector and headquarters. It is important to note that because some member organizations are active in multiple sectors, the total number of sectors slightly exceeds the total number of respondents. Relative to their share of the membership at the time of the survey, the distribution of respondents overrepresents NGOs and retailers and underrepresents consumer goods manufacturers. In terms of regional representation, respondents from the global North are proportionally underrepresented, while respondents from East Asia are overrepresented.

Because the distributional differences between our sample and the RSPO membership as a whole raised questions about the generalizability of our conclusions, we tested for differences across sectors and headquarters regions for each of the results presented below. While, as we explain below, we found no statistically significant differences across sectors, we did find some differences by headquarters region. We detail these differences, which we believe do not raise serious concerns about generalizability, as we discuss each result below.

To simplify responses on our embedded survey experiment for analysis, we estimated 18 polytomous latent class models with different combinations of explanatory variables and numbers of clusters (two, three, or four), selecting the model with the minimum BIC for further analysis. We found a model with three clusters in which the experimental conditions were interacted with a binary variable reflecting the respondent organization's headquarters location to have the lowest BIC of the models we estimated. We present a silhouette plot assessing the adequacy of our optimal model's clusters in the Methods Appendix (Maechler et al., 2019).

The optimal estimated model generated an intuitive response grouping, presented in Fig. 2. Cluster 1 clearly identifies respondents that were skeptical of the program they were presented, much more likely to say it would undermine the RSPO's credibility and confuse consumers than the respondents in the other clusters, while very rarely expressing any positive evaluations. Cluster 2, on the other hand, is much more positive and substantially less likely to express reservations about credibility or confusion. Cluster 3, finally, is less optimistic about their presented program than Cluster 2, but nevertheless are relatively unlikely to express concerns about reputation or confusion and are somewhat more likely to agree that the program could be beneficial to smallholders.

Fig. 2 is also consistent with our expectation that credit mechanisms would be perceived negatively. More than half of the Cluster 1 respondents that indicated that the program they were presented would likely confuse customers, for example, were in the Credits condition. This condition similarly accounts for the bulk of respondents in this cluster expressing concerns about the program's reputational effects.

Fig. 3 summarizes the relative risk that a given respondent is in either Cluster 2 or 3, as compared to Cluster 1, based on the multinomial logistic regression component of our optimal latent class model. We find slightly less than five times the risk that respondents fall into Cluster 2, the most optimistic group, if they are in the Producers or Smallholders condition as compared to the control (Credit condition), while the 95% confidence interval for the Jurisdictional condition very narrowly includes one (lower bound >0.999). Respondents in all three of the non-Credit conditions are also slightly over five times as likely to be in Cluster 3 than those in the Credit condition. While less optimistic than Cluster 2, Cluster 3 is also less skeptical about the presented program than Cluster 1.

These analyses suggest that some of the meaningful difference between responses across experimental conditions is driven more by skepticism about credits as a mechanism than optimism about the other programs. In addition, it is notable that the optimal model included a variable indicating whether or not the respondent's organization was headquartered in a Western country, despite that we found no statistically significant differences across these two groups in terms of their response to the experimental conditions. To shed more light on these patterns, we estimated several logistic regressions to examine differences by experimental condition and headquarters location across each of the responses used to estimate the LCA model. We present predicted probabilities for each response for all combinations of experimental conditions and headquarters locations estimated from these models in Fig. 4.

Confirming some of the evidence from Fig. 2, Fig. 4 indicates that the most substantively important difference across experimental conditions relates to confidence about credits' reputational effects. The best fitting models, measured by their Area under the Receiver Operating Characteristic (ROC) curve, predict responses about confusing consumers and undermining the RSPO's credibility, for which the combination of experimental condition and headquarters location provide a reasonably good fit.

With the exception that organizations headquartered in North America, Europe, and Australia in the credits condition were less likely to see the program as strengthening the RSPO brand, positive responses are relatively consistent across experimental conditions. Further, Fig. 4 indicates that the experimental conditions' substantive impacts are more pronounced for respondents from organizations headquartered in Western countries. While respondents are generally more skeptical about credits than the other conditions, this difference is particularly pronounced for respondents from organizations headquartered in Europe, the US, Canada, and Australia.

Table 3
Respondents by sector and headquarters region. Note that some RSPO members are active in multiple supply chain sectors.

Sector	Respondents	Headquarters region	Respondents
Oil Palm Grower	77	Global North	139
Palm Oil Processor/Trader	104	Southeast Asia	83
Consumer Goods Manufacturer	159	East Asia	93
Retailer	25	Latin America	65
Non-Governmental Organization	18	Other	15
Third-Party Auditor	21		
Other	35		
Total Respondents	420		420

6. Discussion

The results of the embedded experiment are consistent with the idea that even corporate decision makers in global value chains linked to deforestation might find relational values framings more attractive than instrumental value framings alone, though to be clear, the design of our survey does not make it possible to determine whether these findings

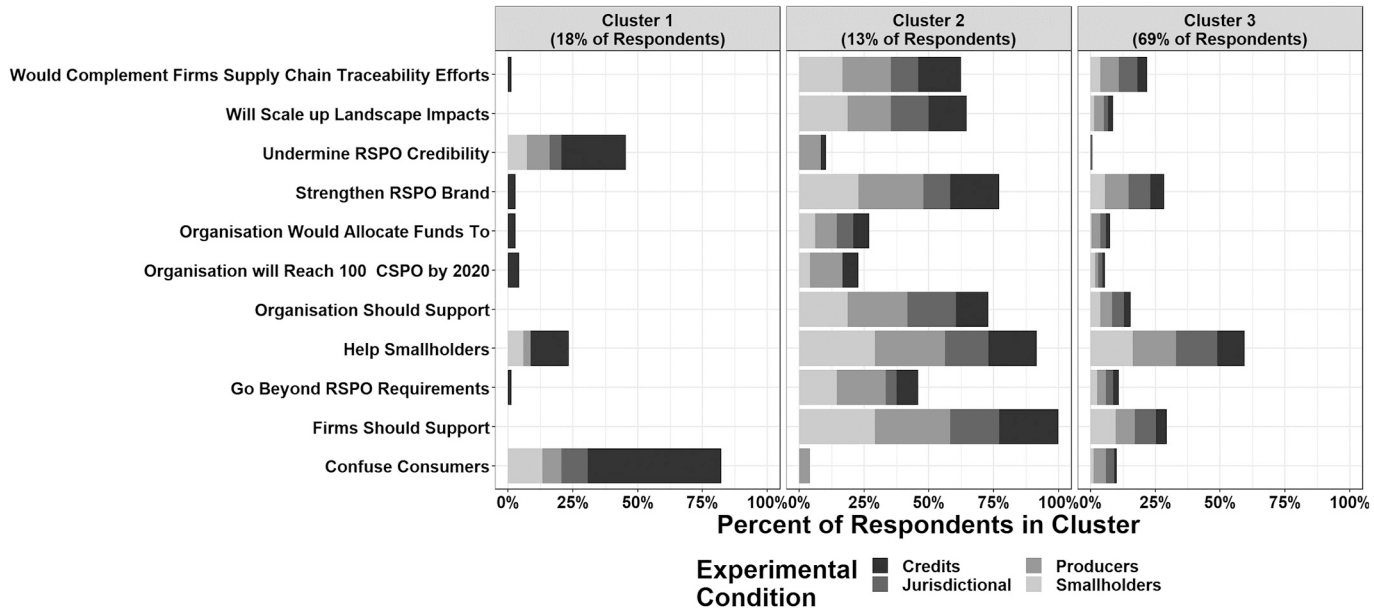

Fig. 2. Responses to the embedded experiment prompt by estimated cluster and experimental condition. Average silhouette width = 0.21. See Methods Appendix for silhouette plot.

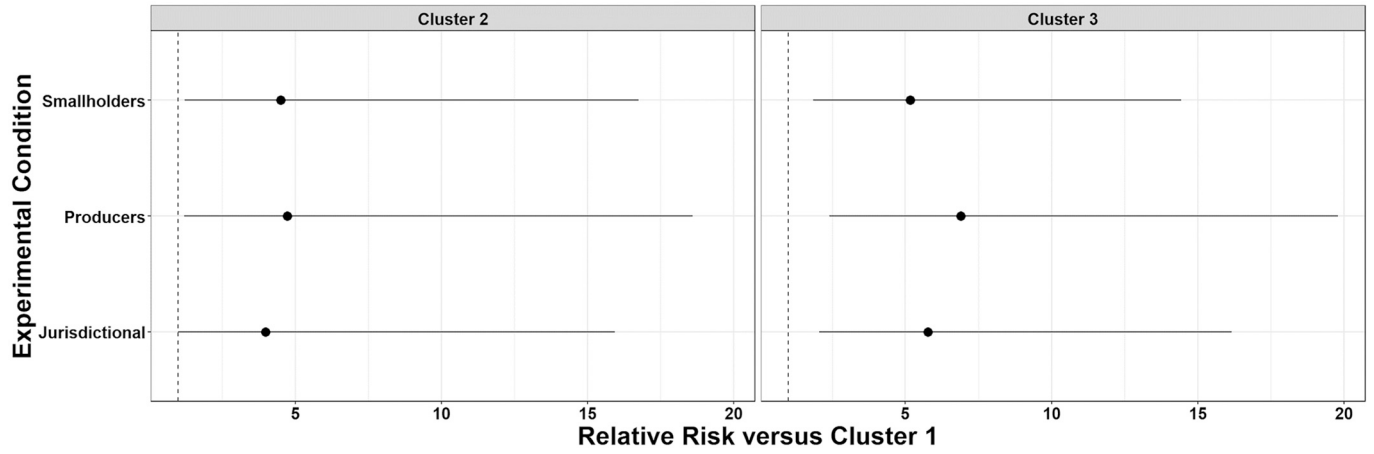

Fig. 3. Relative risk of cluster membership, compared to Cluster 1, non-Credit conditions compared to Credit conditions. Horizontal lines show 95% confidence intervals. Estimated using the multinomial logistic regression component of the polytomous latent class model with the minimum BIC of the models estimated.

result from activating the decision makers' own sense of relational values or simply proposing a framing that they deem to be more amenable to strategic communications. From the practical perspective of whether or not this sort of reframing might be helpful as a small step in levelling the playing field for smallholders seeking sustainability certification, however, this distinction may not matter so much. The critical point is that it appears that a simple reframing of credits that could preserve their positive benefits while also being more transparent about their actual functions might be amenable to both upstream and downstream value-chain actors.

Tilting the scales in favor of the strategic communication interpretation, our post hoc analysis demonstrates that a deciding factor in the experiment was the respondents' expectations of how the mechanism would affect reputation, consistent with the argument that external legitimacy is at least one consideration for corporate decision makers contemplating sustainability certification (Hofmann et al., 2013; Richards et al., 2017; Thorlakson, 2018). That we did not find significant differences in the propensity to make positive statements about the potential benefits of the program outside its reputational implications is generally what we would expect, given that the experiment was simply redescribing the existing RSPO Credit system in different terms. Respondents in all the conditions had roughly similar attitudes toward the program's potential benefits, and, as expected, were particularly positive about the program's potential to support smallholder inclusion.

While these results lend some plausibility to the idea that relational values might be applicable tools even in the world of global value chains, they are far from guaranteeing the viability of any of the proposals studied. Though respondents widely recognized the potential for the programs described in the experimental item to support smallholders and (with the exception of Western respondents in the Credits condition) somewhere between a quarter and a half would be predicted to support the program they were presented, less than a quarter would be predicted to say that their own firm would give such support. That result raises questions about the overall appetite for the types of initiatives tested in the experiment.

Other evidence from the survey, however, gives a bit more reason to think reframings like those contemplated here might be part of a broader scaling strategy for certification standards like the RSPO. Our survey

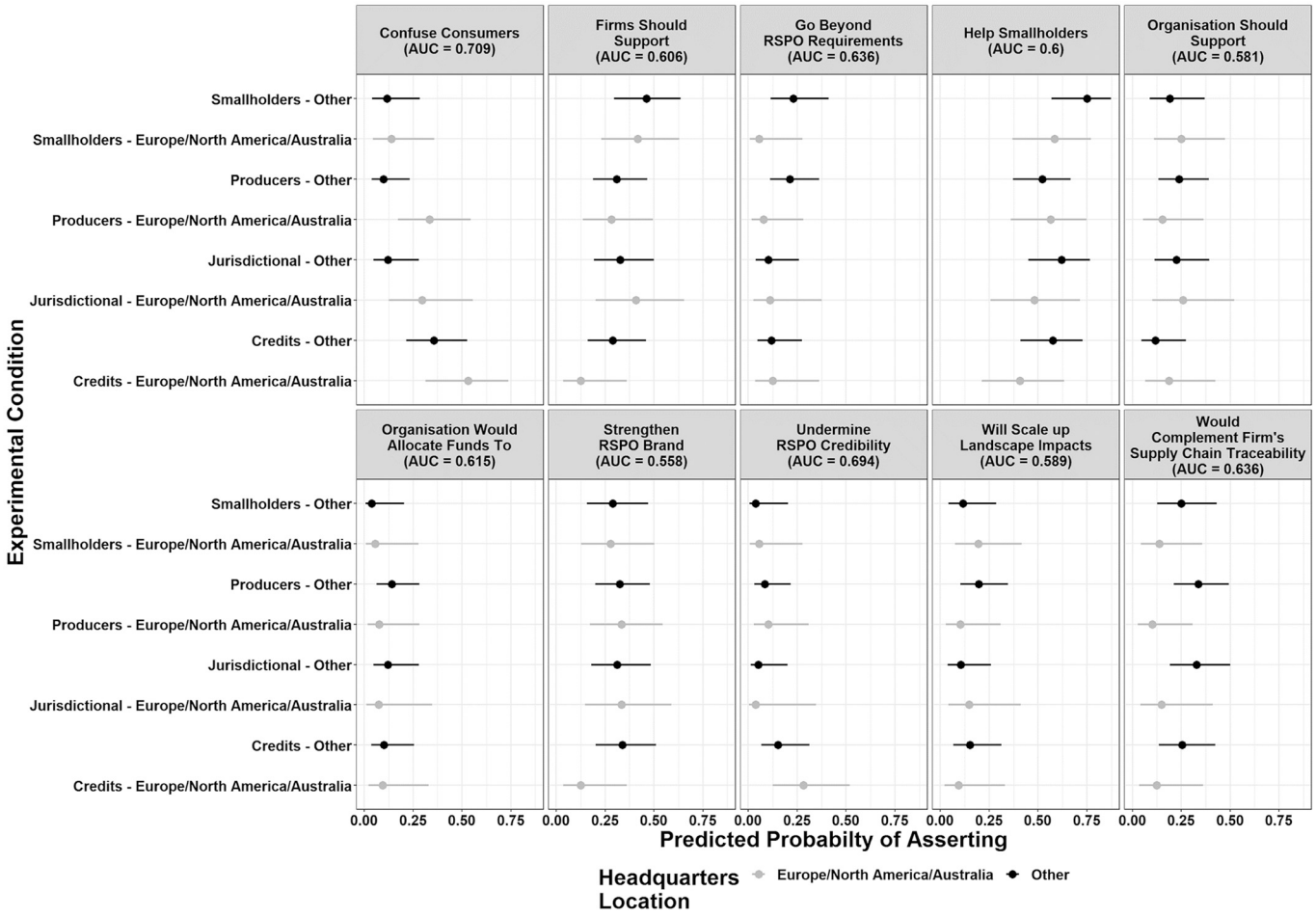

Fig. 4. Predicted probabilities by experimental condition and headquarters location. AUC = Area under the Receiver Operating Characteristic (ROC) curve. This is a measure of predictive adequacy, with 0.5 indicating no better than random chance, 0.75 a good fit, and 1 perfect prediction. Statistical significance of the independent variables used in these models are presented in the appendix.

included an item asking whether or not the respondent's organization would be likely to purchase more RSPO Credits than required to meet their obligations under the standard for corporate social responsibility purposes. Fig. 5 presents responses to this item from staff of processor/trader, consumer goods manufacturer, and retailer respondents.

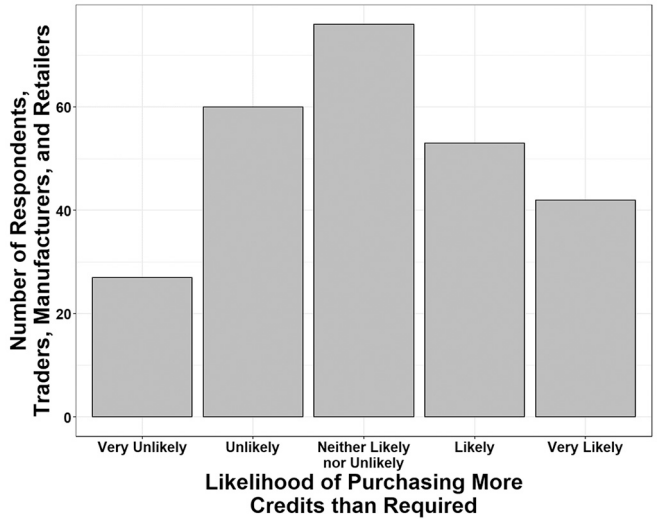

Fig. 5. Traders', manufacturers', and retailers' ($N = 258$) expressed likelihood of purchasing more credits than required to meet RSPO obligations as part of a corporate social responsibility strategy.

As Fig. 5 indicates, slightly over a third of these respondents suggested their firms would be likely to purchase more RSPO Credits than required to meet their membership obligations as part of a corporate social responsibility strategy. Based on an ordered logistic regression model (not shown), respondents from organizations headquartered in North America, Europe, and Australia tended to express a higher likelihood of making this choice.

That we find some appetite for using RSPO Credits as a CSR tool over and above the mechanism's instrumental value for certification compliance suggests there may be some additional potential for these programs, particularly given the change in attitudes toward them when they are framed in contribution, rather than credit, terms. If such a reframing were to encourage some of the approximately 30% of these respondents who expressed being neither likely nor unlikely to make such a move to become more likely to do so, these mechanisms could be an option for mobilizing additional sustainability financing to producers and smallholders in particular.

Another bit of evidence that relational values might be of practical use comes from Fig. 6, which presents responses from traders, manufacturers, and retailers to an item asking what changes to the RSPO Credits system might lead their firms to make more credit purchases. Almost 35% of respondents said that metrics demonstrating the benefits to smallholders would be helpful, consistent with the importance of corporate social responsibility motivations that we have documented so far and with the idea that demonstrating particular relationships might

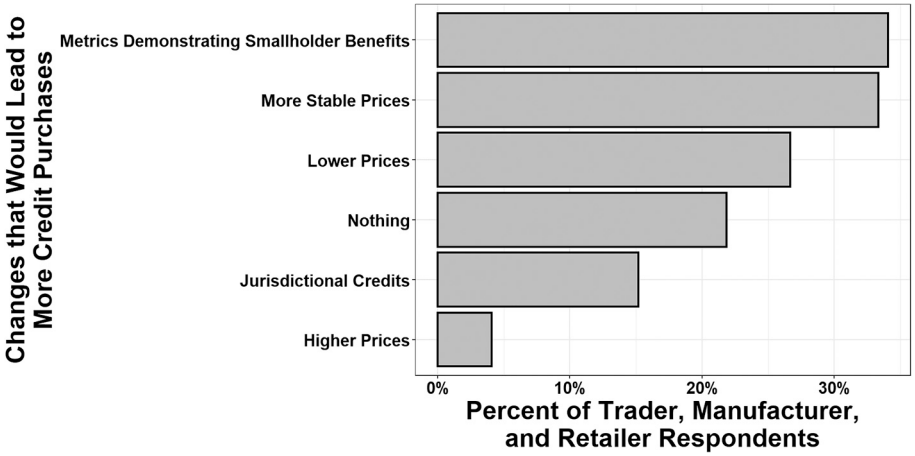

Fig. 6. Factors trader, manufacturer, and retailer respondents ($N = 258$) indicated would lead their firm to make more RSPO Credit purchases.

be more appealing than instrumental considerations alone. On the instrumental side, however, approximately 33% called for more stable prices. Based on a logistic regression model (not shown), firms headquartered outside North America, Europe, and Australia are statistically significantly more likely to raise this point. Slightly over a quarter called for lower prices. On the other hand, a bit over a fifth said that nothing would lead them to make larger credit purchases. Based on a logistic regression model (not shown), these respondents are more likely to be headquartered in North America, Europe, and Australia, a finding consistent with negative perceptions of credits in those regions.

Amid growing debates about the relative merits of environmental tariffs, bans, or zero-deforestation supply chain commitments targeting sectors driving deforestation, there is some evidence that strategies that combine restrictions on unsustainably produced goods with subsidies for sustainable production can be effective in avoiding leakage due to market switching (Wilman, 2019). If this is the case, then maintaining mechanisms that can direct such market signals and support upstream producers could remain an important part of sustainability strategies. For such mechanisms to serve this role, however, they need to be transparent about what they are doing. Our survey suggests that, at least in the case of the RSPO Credit mechanism, adopting a relational values framing and being more transparent about what the credit mechanism does in practice would potentially increase, rather than diminish, the program's benefits. We think it may be time to bury credits, not to praise them.

7. Conclusion

While there is a growing literature on the potential for framings emphasizing relational values related to identity, culture, and social cohesion as motivators for sustainable behaviors, most of the studies adopting the relational values framework have focused on local connections. Here, we demonstrate that relational values framings could potentially also play a role in sustainability efforts in global value chains using an embedded experiment survey with representatives of RSPO member organizations focused on the RSPO Credits mechanism.

Our findings are important for discussions of sustainability certification in global value chains for several reasons. First, they demonstrate that simple reframings can substantially change value chain members' attitudes to a significant aspect of a major global environmental standard. This result indicates the potential benefit of applying relational values thinking to these sorts of problems. Second, this reframing arguably makes the credit mechanism more honest, in that it requires no assumptions about how particular monetary values translate into additional tonnages of sustainable palm oil production. Third, the redescription could help correct a rather perverse incentive that results from applying credit mechanisms to supply chain sustainability certification. While an instrumental frame deliberately encourages firms to adopt strategies to source credits at the lowest possible cost, a relational values frame could potentially do the opposite. That is, if firms are reporting on their contributions to sustainability, seeking to contribute lower amounts might not play well with relevant audiences. Fourth, because the proposed change simply involves a redescription of existing credit mechanisms, the mechanism could still be used according to the relevant standard's existing requirements, necessitating minimal changes to the standard itself but potentially making existing credit mechanisms better and more transparent levers for sustainability.

Nevertheless, these findings are only preliminary, and, rhetorical flourishes aside, we are some way from the evidence base that would be needed to determine whether or not this strategy might be effective. Testing relational values frames with consumers, other value-chain decision makers, and in sustainability standards in other deforestation-linked value chains, would be an important further contribution. Along similar lines, testing how relational value frames work in affecting behaviors with impacts on distant people and ecosystems could shed light on the potential of these approaches to contribute to the governance of telecoupled systems more broadly. Third, this study addresses firms that are already involved in sustainability certification, making them more likely to respond positively to sustainability messaging. Testing these kinds of interventions with decision makers in firms that are not yet engaging in substantial sustainability efforts could also be informative. Finally, the current study is susceptible to critiques like that advanced by Glasbergen (2018), which point out the limitations of framing questions from the perspective of standards, rather than those affected by them. While many of those affected by these decisions, as we have argued, appear to point out the potential uses of credit-like mechanisms, it is certainly the case that further research on how mechanisms like these might affect smallholders - and whether or not smallholders might find such mechanisms beneficial - is certainly warranted.

Declaration of Competing Interest

This research was funded as part of the Nudging Sustainable Palm Oil project, funded by the Roundtable on Sustainable Palm Oil, which provided some salary and research travel funding to the authors. The secretariat staff were not involved in the data analysis and conclusions presented here, and any claims, errors, or misinterpretations are the authors' alone.

Acknowledgements

This research was funded as part of the Nudging Sustainable Palm Oil project, funded by the Roundtable on Sustainable Palm Oil. We are also grateful for the insight and support of the Roundtable on Sustainable Palm Oil secretariat staff in the design and implementation of the survey. We are particularly grateful to Javin Tan, who was an excellent and insightful colleague throughout the project. The secretariat staff were not involved in the data analysis and conclusions presented here, and any claims, errors, or misinterpretations are the authors' alone.

Appendix A. Supplementary Data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ecolecon.2021.107303.

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