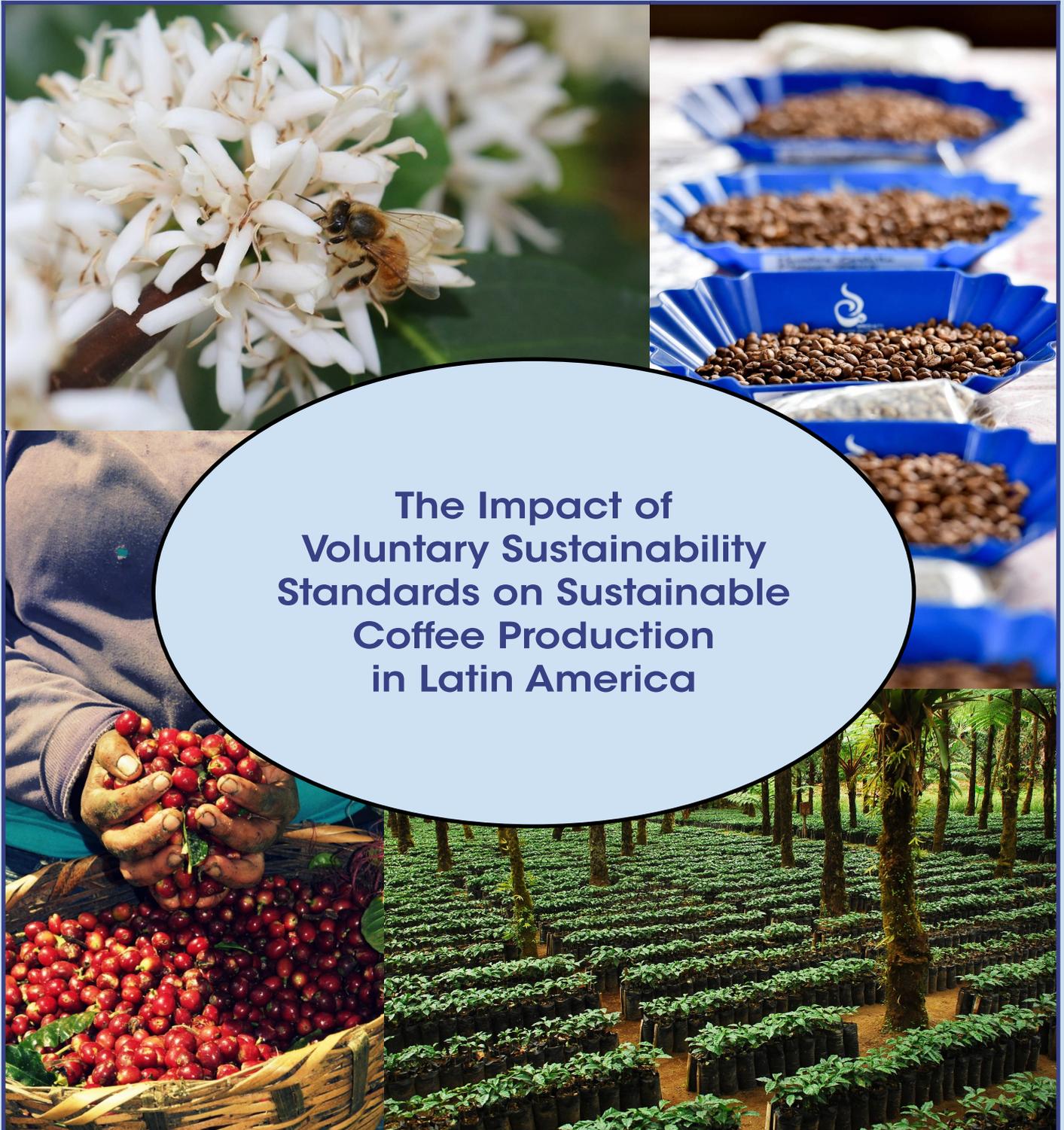


# TRANS SUSTAIN

## STAKEHOLDER SUMMARY REPORT



The Impact of  
Voluntary Sustainability  
Standards on Sustainable  
Coffee Production  
in Latin America

# TRANS SUSTAIN

THE EFFECTIVENESS OF VOLUNTARY SUSTAINABILITY STANDARDS

## STAKEHOLDER SUMMARY REPORT THE IMPACT OF VSS ON SUSTAINABLE COFFEE PRODUCTION IN LATIN AMERICA

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## 1. Executive summary

The first phase of the TRANS SUSTAIN research project, which analyzed the **effectiveness of Voluntary Sustainability Standards in the coffee sector**, produced the following insights and policy recommendations:

- Existing Voluntary Sustainability Standards in the coffee sector continue to show **large discrepancies** in the substantive requirements they place on producers and the economic support they provide. **Buying commitments by roasters should thus be standard-specific** to allow consumers to evaluate their sustainability performance.
- Implementing Voluntary Sustainability Standards in the field requires **extensive support in training and co-financing**. This support may come from public, associational, or private sources. Yet especially in the case of private (roaster or trader-provided support) there is a danger of creating **dependency relationships** for smallholder farmers.
- Improvements in practices on smallholder coffee farms are **highly context-dependent and vary across types of practices**. In general, environmental sustainability practices appear most difficult to nudge forward through certification, while social sustainability practices show slightly more promise.
- Improvements were most pronounced among groups that implemented standards with **strong binding requirements** and had access to **significant price premiums** as well as **intensive hands-on support**.
- However, the existence of improvements over the baseline also depends on the height of the baseline – and in many circumstances there appears to be a trend toward a **selection of stronger producers** (in terms of farm size or level of education) to participate in standards.
- Also, the trend toward **multiple certification**, especially of subgroups of Fairtrade-certified cooperatives, shows **limited effectiveness**, with few differences of producers in their economic, environmental, or social performance.
- All sources of support should expect to have **to increase, rather than decrease, per-unit expenditures for standard-compliant coffee** as mainstreaming continues. Else, implementation gaps in the field will likely persist and intensify.
- The increasing combination of sustainability certification with other differentiators (e.g. quality) risks **delinking economic incentives (e.g. premium payments) from sustainability performance**. When farmers perceive that similar economic conditions are possible without complying with voluntary rules, they are likely to drop out of private standards. Indeed, this happened to several Rainforest Alliance and 4C groups in our sample.
- Thus, the need for **greater smallholder support in certification** as well as for a **better business case for Voluntary Sustainability Standards** calls for a **massive ramp-up of the resources** the coffee industry deploys at origin. Notably, these payments should both **strengthen training and extension service provision** as well as **stabilize and lift the price of sustainable coffee**.

## 2. Voluntary Sustainability Standards in the coffee sector

The production of many commodities, including coffee, show sustained sustainability challenges such as biodiversity protection; the elimination of forced and child labor; safe working conditions; and the eradication of poverty in regions that produce the goods we consume daily. **Voluntary Sustainability Standards (VSS)** (see Figure 1) aim to tackle these challenges by providing rules of behavior, trainings and capacity building, and economic incentives such as price premiums and privileged market access. Many such standards use consumer-facing labels to appeal to conscientious consumers that aim to improve their environmental and social footprint. The **TRANS SUSTAIN research project** tackles the question whether VSS can fulfill this promise – both in theory and in practice.



Figure 1. Voluntary Sustainability Standards in the coffee sector

We first need to understand what VSS actually stand for. For this purpose, our research group created the **Voluntary Coffee Standards Index (VOCSI)**. The index scores and aggregates indicators for social, environmental, and economic sustainability, as well as enforcement rules, for all VSS present in the coffee sector. It shows that standards differ widely in their interpretation of what sustainable production entails, as well as in the stringency of their rules and coverage of different criteria. As shown in Figure 2, the UTZ, Fair Trade USA and Rainforest Alliance standards show the best performance, while Nespresso AAA, 4C and Starbucks C.A.F.E. Practices are relatively weaker and the organic standards rank low due to their very narrow view of sustainability.

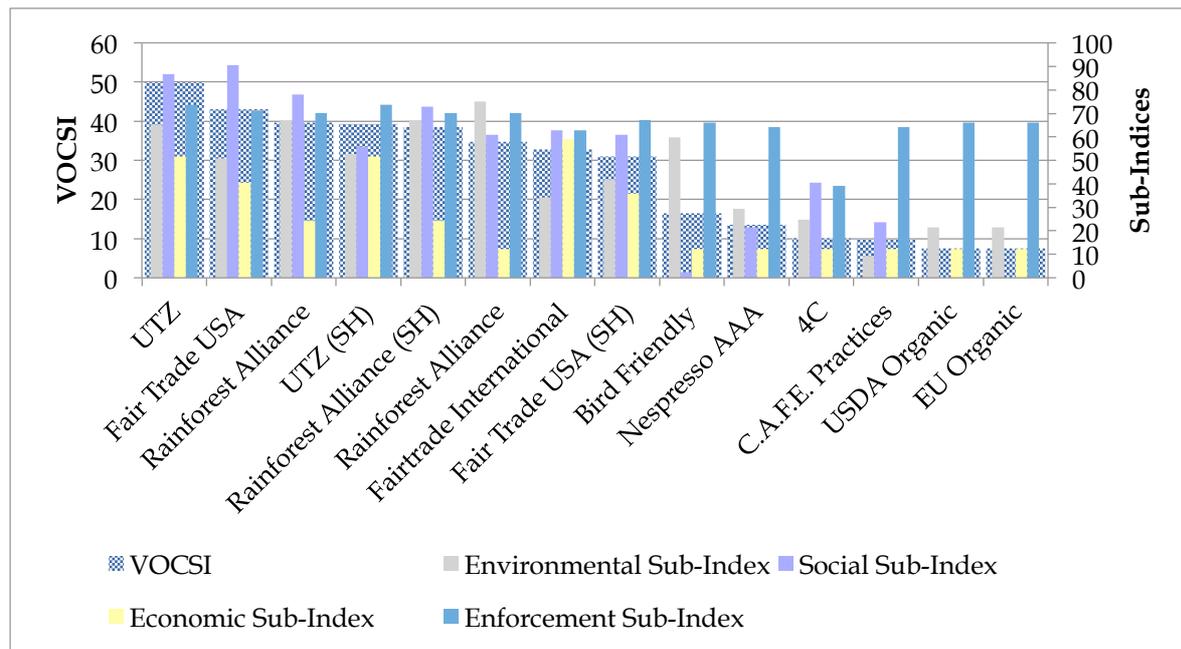


Figure 2. The Voluntary Coffee Standards Index

### 3. Empirical strategy for data collection and analysis

To answer this second question, the TRANS SUSTAIN project examined **how effective Voluntary Sustainability Standards** are in fulfilling their mission of improving the economic, environmental, and social sustainability of agri-food commodity production on the ground. In particular, we calculated the **outcome additionality** of certification. This measure calculates what **additional effects** certification had for a certified farmer (e.g. regarding yields, income, or sustainable practices), compared to a similar non-certified producer. Aggregating these behavior changes then can tell us whether VSS really had an impact in the field – or whether they only certified the status quo with no economic, social or environmental improvements.

We collected household-level data of **1900 coffee smallholders in Honduras, Colombia, and Costa Rica** (see Figure 3 for approximate study regions). We used a questionnaire with **290 conditional questions** that asked farmers about their production practices and costs as well as specific questions related to environmental sustainability (e.g. level of shade cover, level of erosion) and social sustainability (e.g. age of youngest worker, use of personal protection equipment). We collaborated with project partners on the ground to gain access to a comparable set of treated and control farmers and sampled randomly from these pairs. Table 1 shows the distribution of observations. In Colombia and Costa Rica a large share of private certifications are implemented in cooperatives that are already Fairtrade-certified. In these cases, we took a two-step approach and evaluated Fairtrade-certified farmers against an uncertified control group; while evaluating the additionality of further certifications as compared to a Fairtrade baseline.

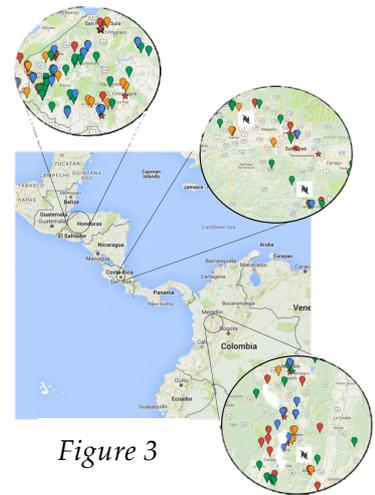


Figure 3

	Honduras	Colombia	Costa Rica	Total
Fairtrade	48	250	94	392
Fairtrade/organic	47	0	0	47
4C	135	86 (+ FT)	0	221
UTZ Certified	94	0	0	94
Rainforest Alliance	76	81 (+ FT + AAA)	71 (+ FT+AAA) + 81 (+ C.A.F.E.)	309
Starbucks C.A.F.E.	0	84 (+ FT)	118 (+ FT)	202
Nespresso AAA	0	144 (+ FT)	0	144
Non-certified	259	97	139	495
<b>Total</b>	<b>659</b>	<b>742</b>	<b>503</b>	<b>1'904</b>

Table 1. Overview of sample

To conduct the impact assessment, we used the propensity score matching technique and matched on a range of covariates such as gender, age, farm size, or education. To increase the robustness of our analyses, we conducted linear and logit regressions using the same covariates. In the following, we present group-wise findings.

#### 4. Results

To assess the impact of certification programs on the ground, we compared the production practices and economic outcomes of certified producers to comparable producers that did not carry the seal in question. This section summarizes the results for 10 economic, 11 social, and 17 environmental indicators, and across Fairtrade, Fairtrade-organic, Rainforest Alliance, UTZ Certified, 4C, Nespresso AAA, and Starbucks C.A.F.E. Practices certification. We here present broad trends of whether indicators showed significant positive, significant negative, or non-significant impacts. Appendix 1 holds a table with disaggregated results by indicator and sub-group.

First, the overview of all programs shows that of all evaluated indicators, the majority (63%) did not show positive or negative differences between certified or non-certified farmers. Around one-quarter showed positive changes, and in 10% of cases, certified farmers performed worse than non-certified ones.

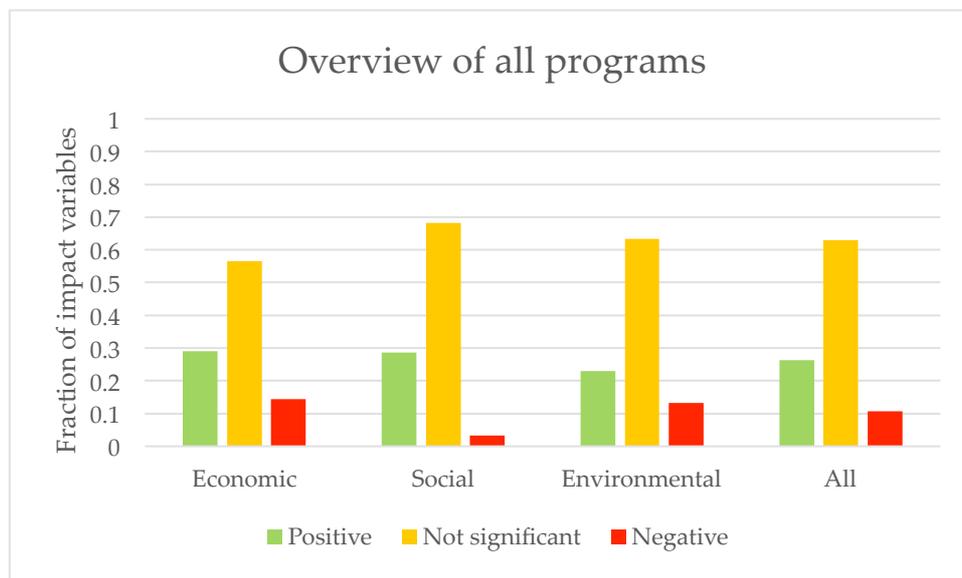


Figure 4. Impact variable overview of all programs

We further see that according to our dataset, certifications appeared to work best on social sustainability issues – these have the highest share of positive impacts (though perform very similar to economic indicators) and the lowest share of negative impacts. On the other hand, environmental indicators fare worst, with fewer positive and more negative indicators than in the social category.

Disaggregating by standards, we find important differences. The standards that fared the best in our analysis are the Fairtrade/organic and Rainforest Alliance certifications. They showed 61% and 55% of positive improvements across all indicators, respectively (see Figures 5 and 6).

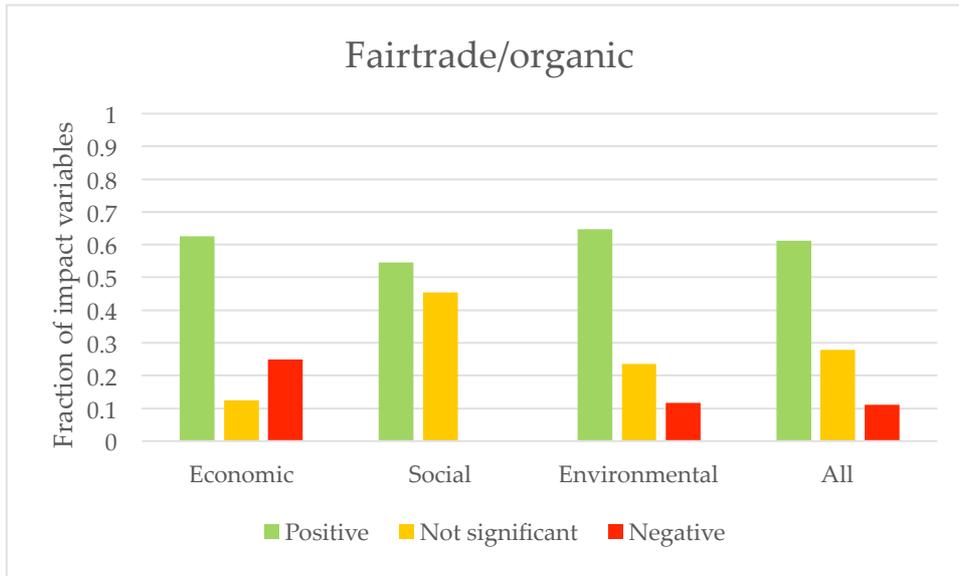


Figure 5. Impact variable overview of Fairtrade/organic certification

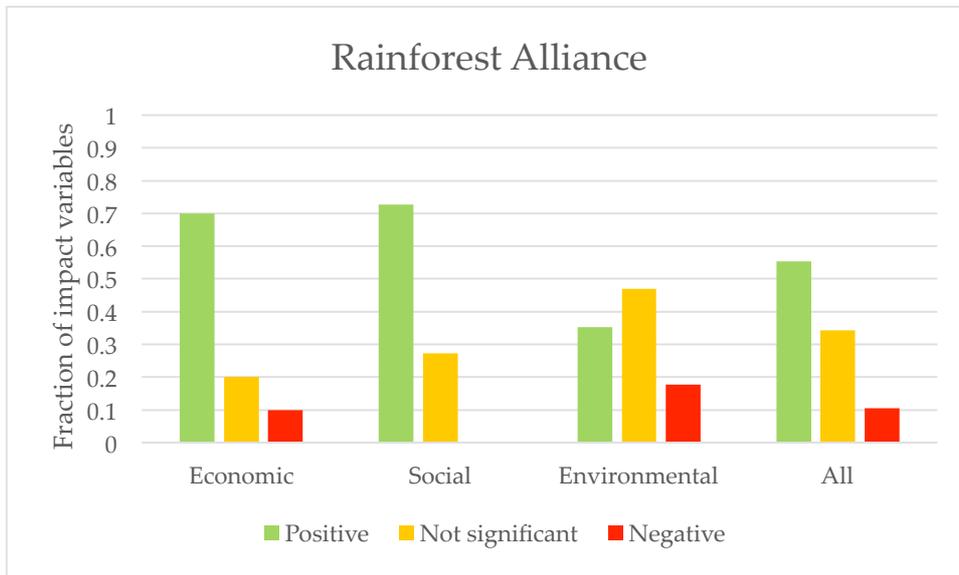


Figure 6. Impact variable overview of Rainforest Alliance certification

Yet, while Fairtrade/organic fares best on the environmental variables, Rainforest Alliance fares better on social and economic variables, and – surprisingly – worst on environmental variables, with some indicators worsening compared to the control group.

This pattern (albeit with higher levels of non-significance) is also apparent in the groups that hold the Rainforest Alliance certification in combination with Nespresso AAA or Starbucks C.A.F.E. Practices programs.

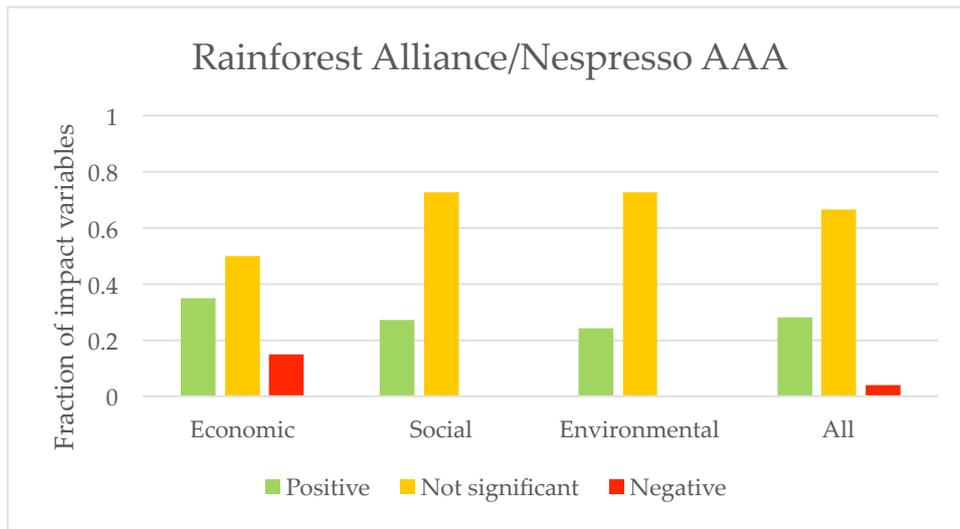


Figure 7. Impact variable overview of Rainforest Alliance/Nespresso AAA certification

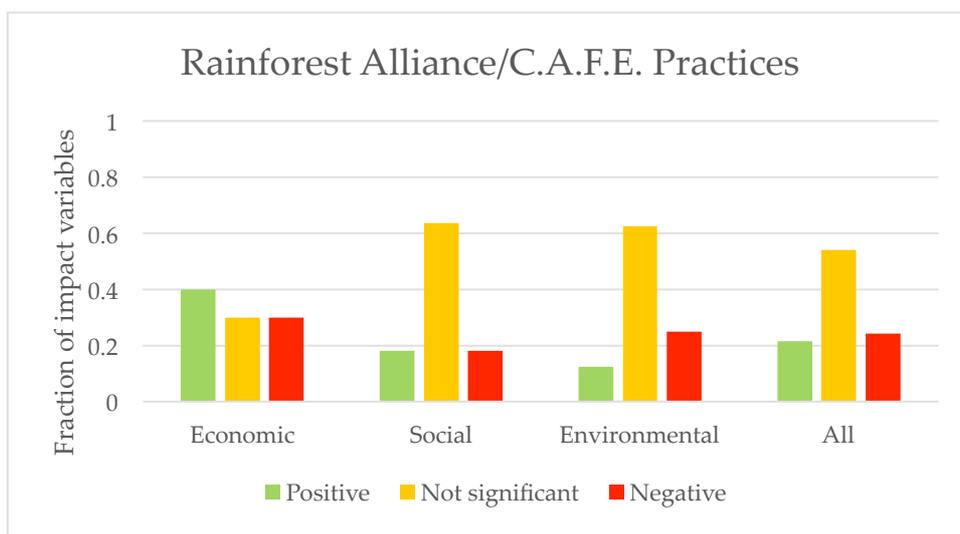


Figure 8. Impact variable overview of Rainforest Alliance/C.A.F.E. Practices certification

On the other end of the spectrum lie standards with very limited additionality outcomes. Here, 4C (the Common Code for the Coffee Community) leads the field (see Figure 9), with 80% of non-significant indicators. Nespresso AAA (79%), UTZ Certified (76%), and Starbucks C.A.F.E. Practices (73%) are not far behind. In these cases, certification does not appear to affect the status quo of smallholder production.

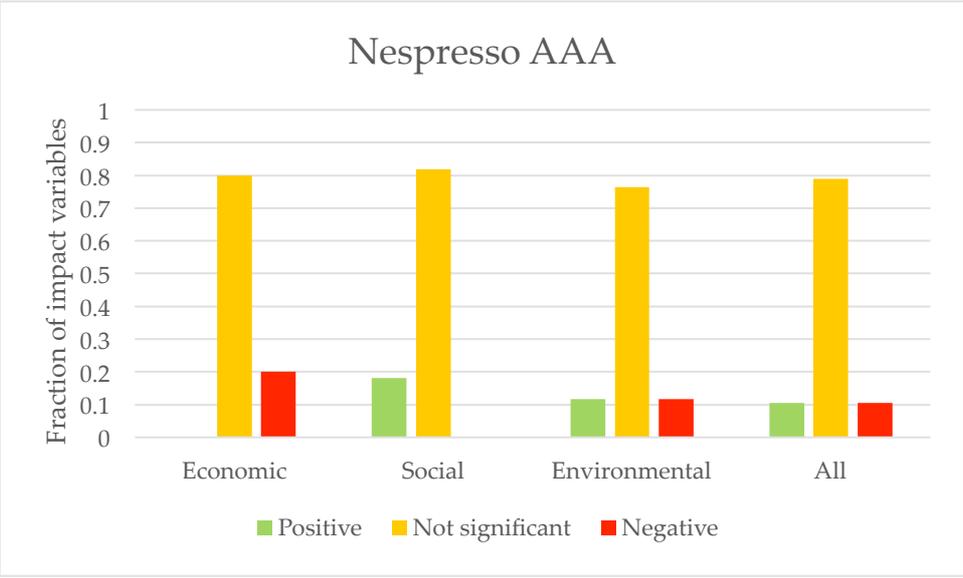
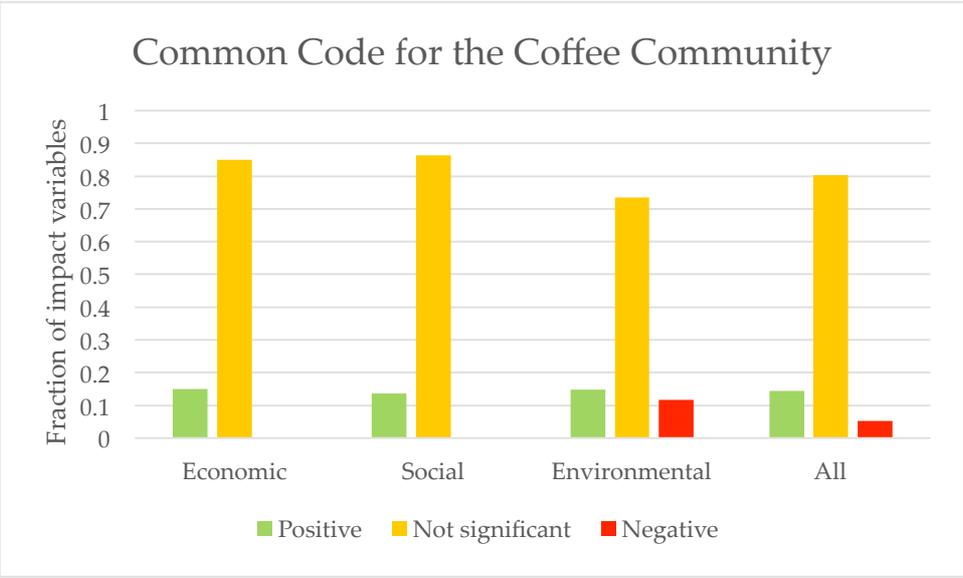
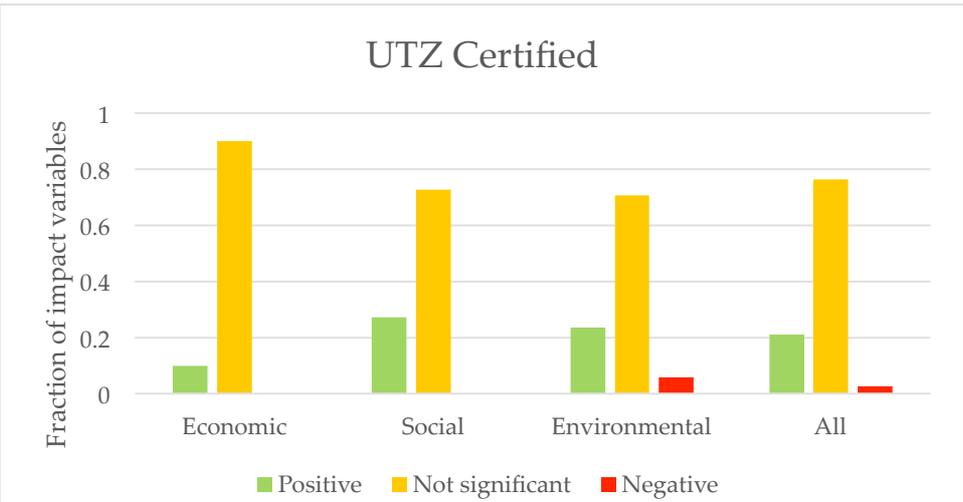


Figure 9. Impact variable overview of 4C certification

Figure 10. Impact variable overview of Nespresso AAA certification

Figure 11. Impact variable overview of UTZ Certified certification



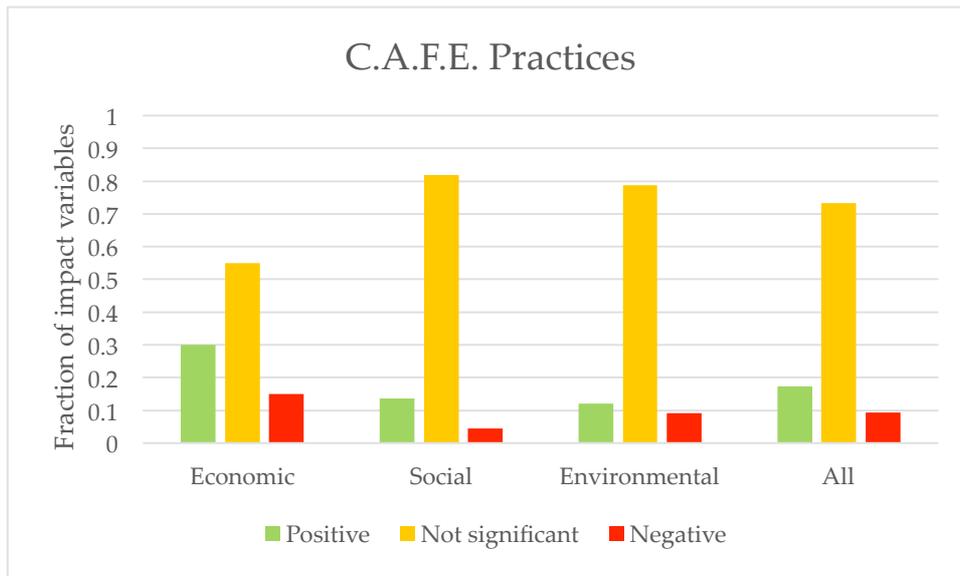
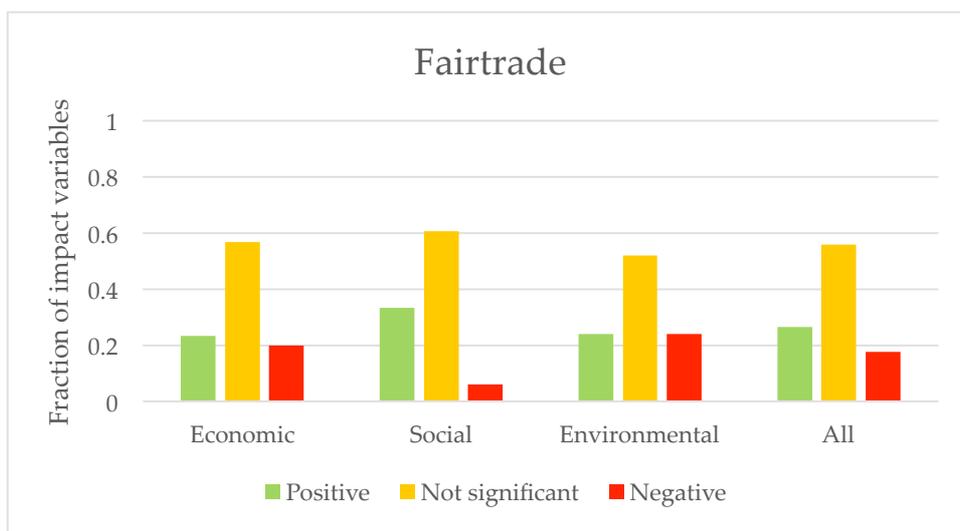


Figure 12. Impact variable overview of C.A.F.E. Practices certification

Fairtrade is a mixed case with 26% positive, 56% non-significant, and 18% negative changes



compared to non-certified farmers.

Figure 13. Impact variable overview of Fairtrade certification

When we compare the empirical results with the standard requirements on paper, as analyzed via the VOCSI, we see some correspondences, but also some enduring puzzles. The VOCSI identified 4C, Nespresso AAA and Starbucks C.A.F.E. Practices as standards with relatively low requirements, at least regarding requirements that are binding for scheme participation. This feature was likely to lead to few behavioral changes in practice, as confirmed by the empirical results. On the other hand, the Rainforest Alliance's high level of standard ambition corresponded to relatively strong results in practice, though these depended on context (showing more additionality in Honduras, with a relatively low baseline, than in Colombia and Costa Rica). Yet, there are some schemes – notably the UTZ standard – which showed a very strong performance in the VOCSI but almost no effect in

our sample. We hypothesize that this is due to the mainstreaming paradox of VSS, as shown in Figure 14.

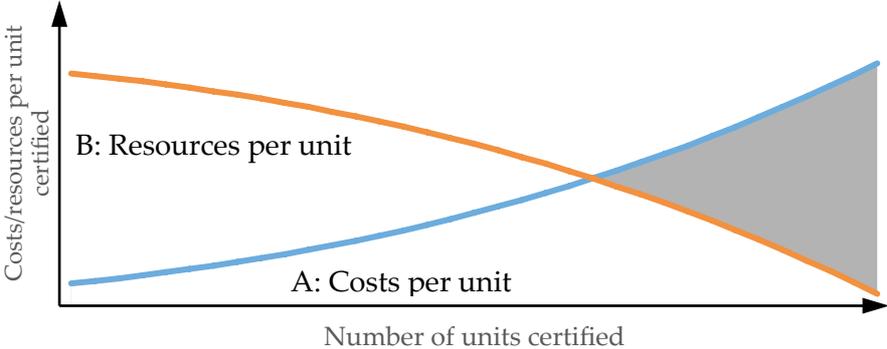


Figure 14. The mainstreaming paradox of private standards

The **mainstreaming paradox** occurs as standards aim to expand and cover a growing number of producers in their schemes. This strategy requires going beyond ‘low-hanging fruit’, that is, producers whose production methods are already close to the standard, and include farmers who require large investments in infrastructure and training to become standard compliant. This is represented in a rising cost of certification per additional unit. On the other hand, during mainstreaming the resources deployed by private companies and civil society organizations per farmer tend to decrease compared to pilot projects. In schemes with group certification, group sizes of up to 1000 farmers are not uncommon. As per-farmer costs for compliance *increase* while resources to assist compliance *decrease*, a decoupling of standard and practice and implementation gaps is to be expected.

And indeed, this is what we find in the field. Only where high requirements are also compensated through high premiums and per-capita investments in capacity-building – for instance in the Honduran Rainforest Alliance and Fairtrade/organic groups – did we see a strong additionality of private governance schemes. Where standards were relatively low compared to the baseline, we observed few changes in practices. And where relatively stringent standards are implemented in a context of low per-capita investment, as in the Honduran context where the average UTZ Certified group was made up by 800 producers, we find enduring implementation gaps that may weaken consumer confidence in the standard.

	<b>High standards</b>	<b>Low standards</b>
<b>High premiums and per-capita capacity investment</b>	Rainforest Alliance Fairtrade/organic  <i>Expectation: Low dissemination – confirmed, RA also some implementation gaps</i>	Fairtrade/conventional Nespresso AAA  <i>Expectation: Few change in practices - confirmed</i>
<b>Low premiums and per-capita capacity investment</b>	UTZ Certified  <i>Expectation: Implementation</i>	4C Starbucks C.A.F.E. Practices  <i>Expectation: Very few changes</i>

	<i>gaps - confirmed</i>	<i>in practices - confirmed</i>
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*Figure 15. Standards and their implementation realities*

Figure 16. Overview of impact trends by indicator and certification group

	Fairtrade	Fairtrade/organic	Rainforest Alliance	UTZ Certified	4C	Nespresso AAA	C.A.F.E. Practices
<b>Economic sustainability</b>							
Gross profits (\$/ha)	●●●	○ ○ ○	●●●	● ○ ○	●●○	○●○	○●●
HH income	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Poverty/wealth	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
GAP training	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Record-keeping	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Soil analysis	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Productivity	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Lower costs (\$/ha)	●●●	○ ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Higher prices	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Access to finance	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
<b>Social sustainability</b>							
Chemical training	●●●	● ○ ○	●●●	● ○ ○	● ○ ○	○●○	○●○
Minimum wage	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Hiring minors	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Schooling	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Worst child labor	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Pesticide types	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Use of PPE	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Pesticide storage	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
First-aid kit	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Potable water	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●
Food security	●●●	● ○ ○	●●●	● ○ ○	●●○	○●○	○●●

	Fairtrade	Fairtrade/organic	Rainforest	UTZ Certified	4C	Nespresso	C.A.F.E.
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			Alliance			AAA	Practices
<b>Environmental sustainability</b>							
Enviro training	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Pesticide use rate	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Fertilizer use rate	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Organic inputs	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Soil cover	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Cover crops	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Erosion barriers	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Erosion signs	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
IPM 1 (traps)	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
IPM 2 (collection)	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Water treatment <sup>1</sup>	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
River protection	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
No deforestation	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Reforestation	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
> 25% shade	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Agroforestry	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●
Only organic	● ● ●	● ○ ○	● ● ●	● ○ ○	● ● ●	○ ● ○	○ ● ●

○ Results from Honduras      ● Positive impact      ● Non-significant impact      ● Negative impact      ○ No data  
○ Results from Colombia  
○ Results from Costa Rica      ○ Results from Rainforest Alliance/Nespresso AAA and Rainforest Alliance/C.A.F.E. Practices groups

Significant impact = \*\* or \*\*\* in either PSM or regression, or \* in both

## Glossary of indicators

<sup>1</sup> In Costa Rica, coffee is milled collectively; therefore the farm-level water treatment is not applicable.

<b>Economic sustainability</b>	<b>Definition</b>
Gross profits (\$/ha)	Coffee income minus variable costs (input, labor, transportation costs), calculated in US\$/ha per crop year
HH income	Total household income from both coffee and non-coffee sources (without considering costs), in US\$/year
Poverty/wealth	Poverty Probability Index (for Honduras and Colombia), wealth index (for Costa Rica)
GAP training	Participation in training on good agricultural practices
Record-keeping	Keeps records of farm activities
Soil analysis	Has received soil analysis to determine optimal fertilization rates
Productivity	Yields of coffee per hectare of farmed coffee surface
Lower costs (\$/ha)	Total input, labor, and transportation costs of coffee, calculated per hectare of farmed coffee surface
Higher prices	Weighted price of coffee received (coffee cherries, wet or dry parchment depending on farmer context)
Access to finance	Has access to formal sources of credit
<b>Social sustainability</b>	
Chemical training	Participation in training on safe use of agrochemicals
Minimum wage	Pays minimum wage to on-farm workers (permanent and daily workers)
Hiring minors	Does not hire children below the minimum legal working age (14 in Honduras, 15 in Colombia and Costa Rica)
Schooling	School-age children attend school
Worst child labor	Children are engaged in worst forms of child labor (heavy lifting, application of agrochemicals)
Pesticide types	Elimination of most hazardous pesticides according to standard catalogue
Use of PPE	Uses full personal protection equipment (mask, gloves, rubber boots, apron)
Pesticide storage	Has separate pesticide storage facility to keep pesticides safe from unauthorized use and children
First-aid kit	Owens complete first-aid kit
Potable water	Has access to potable water
Food security	Has not experienced periods of food scarcity in the past year
<b>Environmental sustainability</b>	
Enviro training	Participation in training on environmental management
Pesticide use rate	Pesticide efficiency, calculated in liters of pesticide per 100 lbs of output
Fertilizer use rate	Fertilizer efficiency, calculated in bags of fertilizer per 100 lbs of output
Organic inputs	Application of organic fertilizer on coffee farm
Soil cover	Has soil cover on over 50% of soils

Cover crops	Has planted cover crops
Erosion barriers	Has erected erosion barriers (wooden or stone) to fortify slopes against erosions
Erosion signs	Does not show signs of erosion
IPM 1 (traps)	Uses traps against pests (coffee berry borer)
IPM 2 (collection)	Picks up leftover coffee cherries after harvest to avoid infestation of coffee berry borer
Water treatment	Treats coffee processing wastewater before leading it back into streams
River protection	Has full protection of river (fence, protection of riparian zone, no visible contamination)
No deforestation	Has not expanded coffee onto previously forested land
Reforestation	Has planted trees on farm in the last year
> 25% shade	Coffee farm has over 25% shade cover
Agroforestry	Coffee farm follows strong agroforestry practices (multi-story, native shade in over 50% of farm)
Only organic	Only uses organic inputs/eliminated chemical fertilizers and pesticides

# TRANS SUSTAIN

## THE EFFECTIVENESS OF VOLUNTARY SUSTAINABILITY STANDARDS



Ministerium für  
Kultur und Wissenschaft  
des Landes Nordrhein-Westfalen



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