

# 2019 CERTIFICATION IMPACTS REPORT: RESEARCH GUIDES OUR WAY FORWARD



The Rainforest Alliance is an international non-profit organization working in more than 70 countries at the intersection of business, agriculture and forests. We are building an alliance to create a better future for people and nature by making responsible business the new normal.



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# INTRODUCTION

We are building a powerful alliance to create a better future for people and nature. By joining forces with more than two million Rainforest Alliance Certified™ farmers—in more than 70 countries around the world—we are working to transform our relationship to the land to make that relationship work better for all of us. In addition to certification, we offer training to farmers in more sustainable practices that boost climate resilience, conserve biodiversity, and promote worker wellbeing—while also helping to increase productivity and improve rural livelihoods.

But the responsibility for sustainability should not fall on farmers’ shoulders alone. The Rainforest Alliance also engages with businesses to create demand for more sustainably produced commodities, improve accountability and transparency in global supply chains, and enable companies (and, in turn, consumers) to make more responsible purchasing decisions. We also work to secure stronger government commitments by advocating for far-reaching policies that support sustainable production and trade. In combination with our landscapes and communities work, these approaches can expand and deepen our impact on some of the most pressing social and environmental challenges of our time.

As part of this 360-degree approach, certification can be a powerful tool for advancing sustainability.

Thanks to market recognition and consumer reach, it has the potential to generate impact on a massive scale. But the sectors and landscapes we work in have changed dramatically since the Rainforest Alliance first began pioneering certification 30 years ago. And the merger of the Rainforest Alliance and UTZ in 2018 was a natural moment for us to take a step back and consider how certification can—and must—evolve. Our 2020 Certification Program<sup>1</sup> represents an important step forward in this journey.

Our new certification program, published in June 2020, guides farmers along a path of continuous improvement. When developing our new standards, it was important to reflect on the impacts of our previous certification programs. This report looks back on lessons learned from the previous Rainforest Alliance and UTZ programs by reviewing the independent research on the impacts of certification for each of our four primary crops: cocoa, coffee, tea, and bananas. These literature reviews include a wide range of evidence depicting the main strengths and weaknesses of the Rainforest Alliance and UTZ certification programs in these sectors. Many of the topics addressed here have been systematically reviewed elsewhere, including previous Rainforest Alliance Impacts Reports,<sup>2</sup> UTZ Impacts Reports,<sup>3</sup> and the online platform Evidensia.<sup>4</sup> Unless otherwise stated, all impacts results noted in this report are statistically significant (p<=0.05).





# LOOKING BACK: LESSONS FROM THE PAST

Today, as a merged organization, we are building on more than 30 years of experience and a wealth of learning amassed by the Rainforest Alliance and UTZ certification programs. Our own observations on the successes we have had and the challenges we still face are enhanced by an ever-growing body of scientific research rigorously assessing the impacts of certification.<sup>5</sup> In this section, we reflect on this research, as well as lessons learned in the field, and consider their implications for our 2020 Certification Program.

**1. Sustainability is a journey that doesn’t end when a certificate is awarded.**

The Rainforest Alliance certification program has sustainability benchmarks that all farmers must meet. Both the 2017 Rainforest Alliance Standard and the UTZ Standard motivated farmers to *exceed* those benchmarks by including time-bound progress requirements for priority issues. However, we now recognize that we can do more to support producers in continuous improvement. Therefore, our 2020 Sustainable Agriculture goes even further by empowering farmers to choose from an array of additional improvement requirements, each exceeding the mandatory requirements. What does this mean in practice? On the issue of decent wages, for example, it means that farmers must first ensure that workers are paid the legal minimum wage—a mandatory requirement in the standard—but farmers, depending on the size of the farm, must then make clear progress toward paying a living wage (the amount of money a household needs to cover basic expenses, like food and housing, and put aside a little for emergencies). Similarly, farmers are required to prevent deforestation—and then enhance on-farm natural ecosystems and, in some cases, expand them. Farmers must meet the mandatory requirements, but they can also choose certain improvement requirements that they consider most urgent or beneficial for their farm.

**2. Farmers, businesses, and consumers are hungry for data—and our new certification system can provide it.**

As the old saying goes, “knowledge is power.” For farmers, there is much to be gained from systematic recordkeeping on yields, the use of inputs (such as fertilizers and compost), and other variables—such as actions taken to combat pest infestations. Inde-



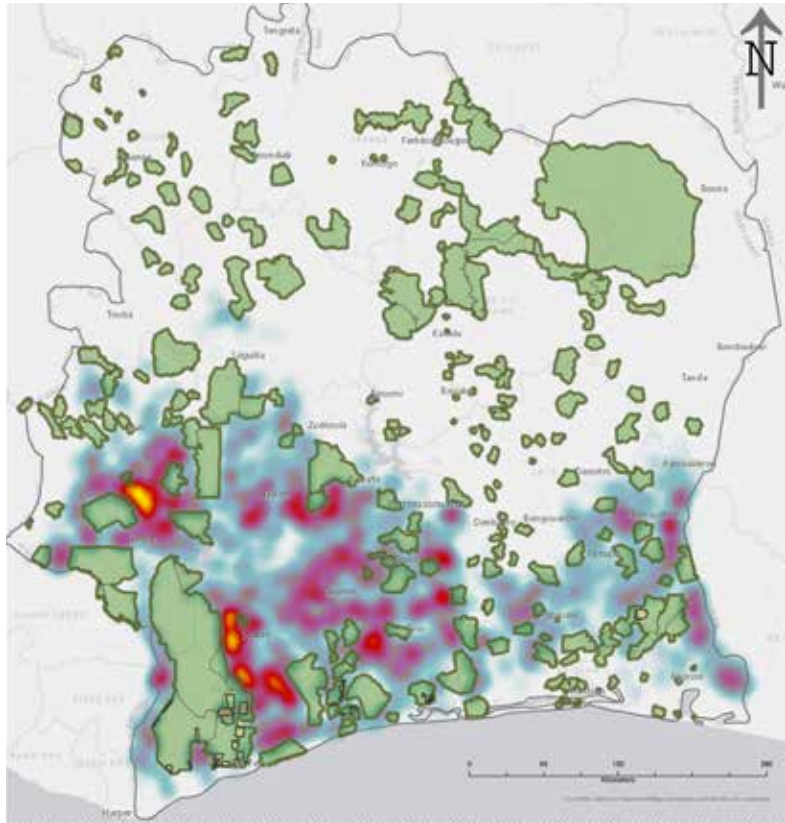


pendent research has shown that Rainforest Alliance and UTZ Certified farms are better at recordkeeping than non-certified farms and that good farm documentation informs sound business decisions and improves traceability.<sup>6</sup> Many businesses, including

retailers who sell certified products, also want more data, so that they can better communicate their sustainability impacts to consumers and understand risks in their supply chains. The 2020 Rainforest Alliance Certification Program will address these needs by providing context-specific data on an array of key farm performance indicators—generating continuous insight into agronomy, impacts, and local risks.

### 3. Risk mapping will enhance the ability of auditors to tackle critical issues.

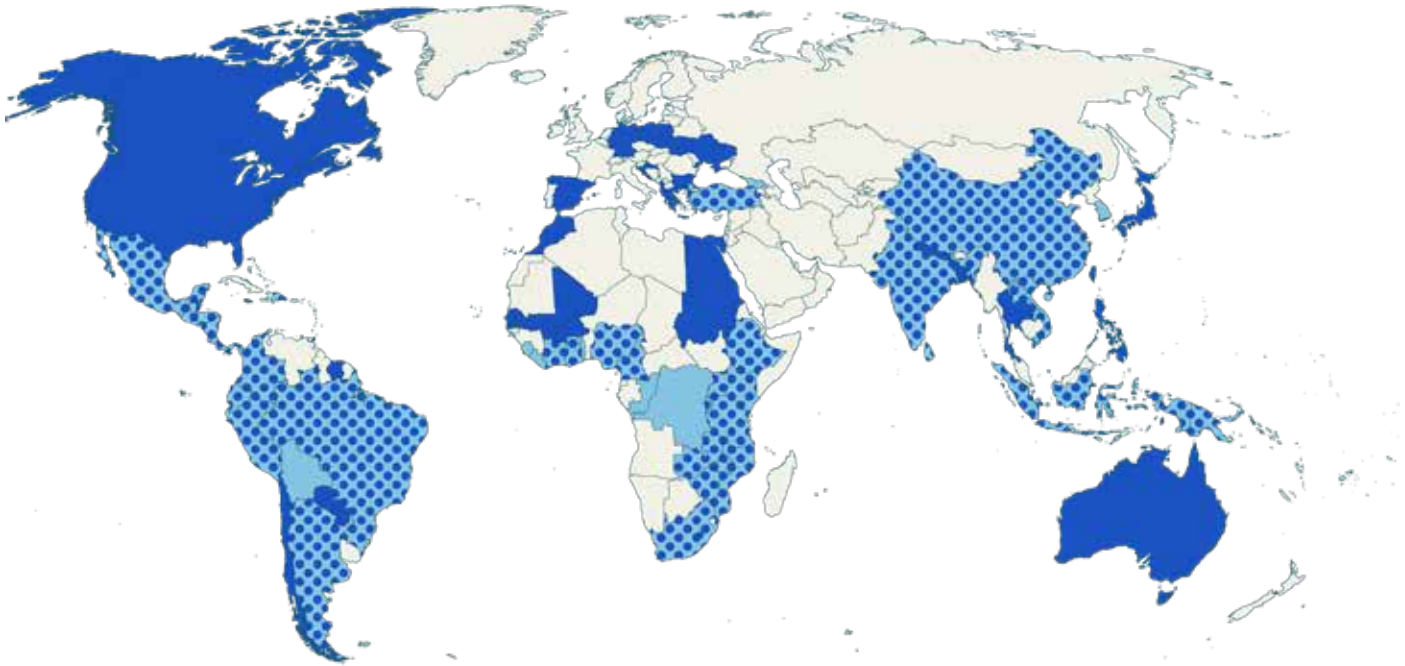
In the past, an auditor's assessment was informed primarily by their observations—as well as the testimonies of farmers, workers, and other stakeholders. Under our new certification program, auditors can use custom risk maps and accurate spatial data to help determine if issue-specific risks, such as child labor and deforestation, are present before they even step foot on a farm. If risks are present, auditors will carry out an enhanced audit and will also



Map<sup>7</sup> showing the density of certified cocoa farms and the locations of protected areas in Cote d'Ivoire. Farm location data and maps such as this one are used to assess the risks of deforestation and farm encroachment into protected areas.

# OUR GLOBAL REACH

● Rainforest Alliance program ● Rainforest Alliance and UTZ programs ● UTZ program



require producers to undertake extra steps to address the issues. We believe that this change, combined with increased audit oversight and advanced auditor training, will make our assurance processes far more effective, and will allow stronger, more rigorous evaluations.

### 4. The costs of sustainability must be shared more equitably across the supply chain.

Companies and consumers ask certified farms to invest time, labor, and resources to make their farms more sustainable: plant trees to protect rivers and streams; pay workers a living wage; find alternatives to pesticides—the list goes on. But what do farmers get in return? The good news is that Rainforest Alliance and UTZ Certified farms are often more

productive,<sup>8</sup> with farmers generally making higher profits<sup>9</sup> and, in turn, better incomes.<sup>10</sup> Despite these benefits, however, many certified farms are still unable to earn a decent standard of living for themselves and their families.<sup>11</sup> And while some farmers report receiving price premiums,<sup>12</sup> others do not.<sup>13</sup> An essential part of the solution is to share the responsibility, costs, and benefits of sustainability more equitably throughout the entire supply chain. The 2020 Standards require a mandatory sustainability differential (premium) for producers.<sup>14</sup> Together, they also support progress toward a living income for farmers—the net annual household income required to afford a decent standard of living for all members of that household—and promote greater transparency regarding sales and sustainability differentials (premiums) throughout the supply chain.





# COFFEE

## INTRODUCTION

Coffee is one of the world's most commonly traded agricultural goods.<sup>15</sup> Grown across the tropics, it plays an important role in the rural economies of many countries in Latin America, Africa, and Asia. However, volatile coffee prices (often dropping below production costs) have made it difficult for farmers to earn a living income—let alone pay their workers a living wage.<sup>16</sup> For some coffee smallholders, the struggle has been so great it has led them to abandon coffee farming altogether. And in some coffee growing regions, climate change poses daunting additional challenges, with yields suffering due to unpredictable rainfall and increased outbreaks of diseases, such as coffee rust.

On the farm level, conventional coffee growing practices can impact biodiversity and water quality. For example, although the coffee plant naturally evolved to grow under the shaded canopy of taller trees, many farms grow full-sun varieties in an effort to boost yields. And this, in turn, has led to less on-farm tree cover.<sup>17</sup> Similarly, coffee processing generates acidic organic waste, which, if not treated correctly, can degrade water quality and impair downstream water uses.

The Rainforest Alliance seeks to address these issues through a range of complementary strategies: promoting best management practices for more profitable, diverse farming systems; helping farmers develop resilient and productive agroforestry systems to conserve biodiversity; and supporting stronger cooperatives and other forms of producer groups. In order to broaden our impact beyond the farm level, the 2020 Certification Program further emphasizes more responsible business practices throughout the entire coffee supply chain: from better accountability and tracking of certified products to mandatory sustainability differentials (premiums).

## REACH<sup>18</sup>

# certified farmers

**400K+**

# hectares

**1 MILLION+**





## IMPACTS

Our understanding of the impacts of Rainforest Alliance and UTZ certification on coffee farms draws on a rich evidence base (more than 15 studies over the past decade). We have gained valuable insights into our programs and a greater understanding of their environmental and socioeconomic impacts—from biodiversity conservation and coffee yields to market prices and farmer incomes.

Several studies indicate that Rainforest Alliance and UTZ Certified coffee farmers often earn higher revenues<sup>19</sup> and coffee incomes<sup>20</sup> than non-certified farms. In many cases, the economic bottom lines of certified farms are stronger because they have higher yields<sup>21</sup> and receive higher market prices.<sup>22</sup> Notably, certified farms have attributed improved yields to the training they receive on better agronomic practices.<sup>23</sup>

Despite these positive findings, certified coffee farmers are not immune to the economic challenges facing agricultural communities across the tropics. Due in part to low coffee prices and fluctuating yields,<sup>24</sup> smallholders still struggle to earn a living income<sup>25</sup> while workers often are not paid a living

wage.<sup>26</sup> The 2020 Certification Program is working to address these challenges by requiring a sustainability differential (premium) for certified coffee, strengthening farmer training, and helping farmers calculate—and start closing—the living wage gap for their workers.

In terms of conservation impacts, research shows that Rainforest Alliance and UTZ Certified coffee farms generally perform better than non-certified farms, especially with regard to forest cover<sup>27</sup> and the protection of riparian areas (the land bordering waterways such as rivers and streams).<sup>28</sup> Studies also reveal that certified coffee farms have a higher diversity of on-farm tree species<sup>29</sup> and higher quality forests.<sup>30</sup> Furthermore, while the wealth of wild bird species found on certified farms does not rival that of natural forests<sup>31</sup>, shade cover on certified farms provides many of the same ecosystem services (such as food availability<sup>32</sup>) and even small patches of on-farm forest are beneficial for bird conservation.<sup>33</sup>

*Several studies also show that the positive environmental impacts of certification extend beyond the farms themselves.*

For example, in countries such as Ethiopia, Colombia, and Costa Rica, certification is not only associated with higher forest quality in areas surrounding certified coffee farms<sup>34</sup> but also greater habitat connectivity<sup>35</sup> and better water quality protection.<sup>36</sup>



### Box 1

## The impacts of Rainforest Alliance certification for coffee smallholders in Honduras

A 2019 study of Rainforest Alliance Certified coffee in Latin America highlights many positive impacts of certification for smallholder coffee farmers.<sup>37</sup> Comparing 76 Rainforest Alliance Certified farms to non-certified farms, the study assessed the effectiveness of certification in promoting worker welfare and supporting the livelihoods of coffee farmers in Honduras.

The researchers found that Rainforest Alliance Certified farms performed better than non-certified farms on multiple indicators related to worker safety and wellbeing: preventing the hiring of minors, paying higher wages, providing personal protective equipment and first-aid kits, storing agrochemicals safely, and treating wastewater. Certified farms and non-certified farms were found

to be equally diligent in terms of forest protection with both avoiding expansion into forested areas.

The study also showed that certified farms received significantly higher prices for their coffee (\$2.03 USD/kg versus \$1.80 USD/kg for non-certified coffee) and the researchers observed that this differential enabled farmers to pay their workers significantly higher wages. Farmers earning higher prices were also more likely to implement more sustainable practices—even if these required additional financial investment—such as worker safety measures, wastewater treatment, and conservation of forested land. This finding underlines the market value of certified products and the importance of price premiums to help support key sustainability outcomes.





# COCOA

## INTRODUCTION

Chocolate is enjoyed all around the world. But sadly, the cocoa sector is contending with severe and entrenched social and environmental challenges, from deforestation and poverty to child labor. In some countries in West Africa, which produces the majority of the world's cocoa, up to two-thirds of cocoa farmers live in poverty.<sup>38</sup> Poverty often leads to farm expansion into critical habitats, leading to large-scale biodiversity loss. In Côte d'Ivoire and Ghana, cocoa production is a major driver of tropical deforestation.<sup>39</sup>

The Rainforest Alliance is working diligently to tackle these challenges. On the ground, we're training cocoa farmers in more sustainable farming practices that can help make their businesses more profitable by increasing the quality and quantity of their yields. And through our new Chain of Custody Standard, we are working to improve economic transparency throughout the supply chain to help cocoa farmers earn a living income and, in turn, pay their workers a living wage.

As part of our commitment to drive deep-rooted change in the cocoa sector, we are continually working to strengthen and improve the Rainforest Alliance certification program. Recently, we identified serious non-compliances with our requirements on certified farms in West Africa with regard to traceability, deforestation, and the destruction of protected areas. In response, a number of farm groups were decertified for non-compliances. In addition, we launched our Cocoa Assurance Plan in April 2019, which sets forth a stricter approach to cocoa certification in West Africa.<sup>40</sup>

We made the decision to temporarily halt the expansion of our cocoa certification programs in Ghana and Côte d'Ivoire until significant improvements are observed. The goal of this controlled growth, along with new, stricter mapping requirements, is to provide the highest level of assurance regarding the conditions under which certified cocoa is produced.

Our 2020 Standards will take this focus on improved assurance even further. Expanded mapping requirements, investment in technology, and a stronger risk-based approach will allow us to monitor and halt expansion of certified cocoa farms into forested land. Further, through our new "assess and address" approach to child labor, we are working with farmers to identify and eliminate the root causes of human rights abuses. And by requiring the payment of a sustainability differential and promot-



ing other ways for markets actors – including retailers – to directly invest in more sustainable production, we are helping cocoa communities improve their livelihoods and move toward a better future.

REACH<sup>41</sup>

# certified farmers

900K+

# hectares

3 MILLION



IMPACTS

Several studies show that Rainforest Alliance and UTZ Certified cocoa farmers have higher yields than non-certified farms.<sup>42</sup>



*In many cases, farmers attribute higher yields to the training they receive on practices to bolster productivity and improve crop quality and resilience.*

This includes training in more sustainable farming techniques such as integrated pest management, pruning, and agroforestry.<sup>43</sup> However, though higher yields sometimes lead to higher incomes, farmers and cocoa workers are often still living below the poverty level.<sup>44</sup> Farmers note that certification increases their costs<sup>45</sup> and does not always bring a higher price for their cocoa.<sup>46</sup> Despite these limitations, research has found that certified farms often report that their economic outlook has improved since achieving certification.<sup>47</sup>

While the environmental impacts of cocoa certification have been less studied, the available evidence is positive. One study showed that Rainforest Alliance Certified cocoa farms had a higher density of shade trees than non-certified farms.<sup>48</sup> A second study found that certified farms reported positive change across a range of environmental indicators, including forest health, biodiversity, soil fertility, and water quality.<sup>49</sup> In contrast, non-certified farms in this study reported neutral or negative change for most of these indicators, and positive change only for one (soil fertility).

Box 2

## The socioeconomic and environmental impacts of UTZ certification on cocoa farms in Côte d'Ivoire

In a 2018 study, researchers compared changes over time between certified and non-certified cocoa farms—focusing on the role of farmer cooperatives and the services they provide to producers.<sup>50</sup> By interviewing farmers, traders, and cooperative managers in 2013 and 2017, the researchers were able to measure changes in key indicators and understand how UTZ certification contributed to these outcomes.

Overall, they found that certified farms had higher yields and higher net cocoa income per hectare compared to non-certified farms. However, per capita net income was similar between the two and was below the living income level of \$2.15 USD/day. While certified cocoa received a premium and non-certified cocoa did not, the premium generally did not cover the cost of investing in the more sustainable practices (labor and inputs such as mulch and compost) required to maintain certification. Certified farms also showed improvements in environmental indicators, such as soil and water quality and the number of shade trees planted, although these results were not tested for statistical significance.

Certified farms received more services—such as training, farm inputs, and access to credit—than non-certified farms. In turn, farmers who benefited from these services had significantly higher net cocoa income and yields, reinforcing the argument that training and other inputs go a long way toward advancing farmers' productivity and profitability. The findings of this study, therefore, demonstrate the need for tailored training programs and the importance of strengthening economic incentives for farmers and other supply chain actors to adopt more sustainable practices.







# TEA

## INTRODUCTION

On any given morning, two billion people around the world start their day with a cup of tea—the world’s most popular beverage after water. China and India lead tea production globally, while the largest exporter by volume is Kenya. As tea is usually hand-picked, the sector is often an important employer in countries where it is grown.

Like many agricultural producers, tea estate workers and smallholder farmers face a range of challenges. Workers are typically paid far below a living wage and sometimes even below the legal minimum wage.<sup>51</sup> Employee housing on many tea estates is often rundown, overcrowded, and unsanitary. Despite the enormous global demand for tea, the price paid per kilo is lower than it has been in a decade. And since supply slightly exceeds demand, it is difficult for farmers to find the resources to invest in more sustainable practices.

The tea sector faces significant environmental challenges as well. In many places, the tea drying process relies on large amounts of wood for fuel, which can lead to deforestation or the planting of exotic tree species for future logging. Often located on slopes, tea farms can contribute to soil erosion and downstream water pollution from sedimentation and overuse of fertilizers. Excessive pesticide use can have toxic effects on the environment and worker health and can hinder sales if on-product residues are too high.

The Rainforest Alliance’s tea sector strategy works to address these challenges in ways that are most effective in each context.

*The 2020 Standards will require certified tea estates to take steps toward paying a living wage, based on a rigorous living wage benchmarking process.*

In India, where challenges related to working conditions are most entrenched, the Rainforest Alliance has recently enhanced certification protocols to include more extensive audits and ensure that systemic issues such as poor housing and worker discrimination are better identified and addressed during the certification process.<sup>52</sup> Our tea sector strategy is also designed to foster increased transparency in the supply chain and boost demand for more responsibly sourced tea in regions where it has typically been low, such as China and India.





**REACH**<sup>53</sup>

# certified farmers  
**900K+**

# hectares  
**600K+**

**IMPACTS**

Independent studies on the impacts of Rainforest Alliance and UTZ certification in the tea sector have primarily focused on farm productivity and income, worker wages, and living conditions for workers and their families. Only a small number of studies have examined environmental topics.

To help farmers achieve certification, we provide on-the-ground training in more sustainable growing practices, which can boost productivity. Multiple studies show that training does lead to improved practices, such as better weeding, safer agrochemical handling practices,<sup>54</sup> and more thorough recordkeeping,<sup>55</sup> which can inform business decisions and improve traceability.<sup>56</sup> Trained farmers are also found to pluck tea leaves and apply compost more frequently, which enhances quality and yield.<sup>57</sup>

However, evidence on the impacts of certification and training on yields, farmer incomes, and other benefits is mixed. Some studies show that certified tea farmers produce better quality tea<sup>58</sup> and have higher incomes<sup>59</sup> and savings<sup>60</sup> than non-certified farms. Other studies suggest that high input costs,<sup>61</sup> low tea prices,<sup>62</sup> and finding fewer buyers than expected<sup>63</sup> prevent certified farms from increasing their net income, even if their yields are higher.<sup>64</sup> Two studies point to benefits of certification for workers, including higher worker wages<sup>65</sup> and overtime rates,<sup>66</sup>

more regular pay,<sup>67</sup> and paid leave.<sup>68</sup> A study in India, however, found that participation in certification did not improve worker wages or bring other benefits.<sup>69</sup>

There is some evidence that Rainforest Alliance and UTZ certification positively impact worker health and living conditions. In India, one study found that more workers on certified estates reported positive changes to their health compared to workers on non-certified estates.<sup>70</sup> Accordingly, certified estates were found to have fewer cases of worker absences related to illness. This study also found that workers on certified tea estates were more satisfied with their employer-provided housing than those that live on non-certified estates. In addition, this study found that a higher proportion of children attend school on certified estates, and that parents

were more satisfied with their schooling.<sup>71</sup> In Kenya, certified farms reported increased use of personal protective equipment,<sup>72</sup> improvements in health and safety conditions,<sup>73</sup> better wash and sanitation facilities,<sup>74</sup> and annual medical checks.<sup>75</sup>

Research on the environmental impacts of Rainforest Alliance and UTZ certification on tea farms is very limited. Two studies documented higher rates of implementation of water-friendly practices on certified farms or those where farmers had received training. These practices included the use of riparian buffers along water bodies,<sup>76</sup> monitoring water quality,<sup>77</sup> and prohibiting the application of agrochemicals near water bodies.<sup>78</sup> Another study examined the effects of widespread certification on downstream water quality (see box #3).

**Box 3**

**Using ecosystem modeling to understand the landscape-level impacts of Rainforest Alliance tea certification**

A 2019 study applied ecosystem modeling techniques to investigate the impact of Rainforest Alliance tea certification on water quality in Kenya's Upper Tana watershed, which supplies almost all of Nairobi's domestic water and 50 percent of the country's hydropower.<sup>79</sup> The researchers hypothesized that practices included in the 2017 Rainforest Alliance Sustainable Agriculture Standard might reduce the negative impacts of tea farming on downstream quality. For example, planting vegetation on streambanks can reduce soil erosion and the damaging buildup of sediment in downstream waterways. Similarly, using soil tests to guide fertilizer application can help farmers apply the optimal amount of fertilizer, thereby reducing the amount of harmful nutrients that are washed into waterways by the rain.

Reduced sedimentation has clear and tangible benefits for the functioning of hydropower and water treatment infrastructure. The models found that Rainforest Alliance certification did

result in lower amounts of sediment in the Upper Tana watershed—310,000 tons per year compared to an estimated 495,000 tons per year for the non-certified scenario.

Contrary to expectations, the researchers found that nutrient levels in waterways were higher under certification due to increased fertilizer use. However, they also learned that farmer purchasing power and better understanding of the benefits of fertilizers had increased through certification—both desired outcomes. Additional research could clarify whether fertilizer application was increased to correct for previous under-application, or whether its application post-certification was truly excessive. The researchers acknowledge that their model did not account for riparian buffer zones, which are required by the 2017 Rainforest Alliance standard and have been shown to reduce the transfer of nutrients from farms to waterways. This exclusion might have caused the models to overestimate nutrient levels in the certification scenario.





# BANANA

## INTRODUCTION

Bananas are the world's most popular fruit, but their production is often associated with excessive agro-chemical use, low prices and wages, and systemic violations of workers' rights. The Rainforest Alliance began certifying banana farms in Costa Rica almost 30 years ago and has since expanded to 18 countries around the globe. Our goal is to promote workers' rights, improve livelihoods, reduce the impact of pesticides and fertilizer use, and increase the profitability of banana production.

Commercial banana farming is dominated by one particular variety of banana, the Cavendish. As bananas are especially prone to damage from fruit-eating insects and diseases, plantations often use high levels of strong pesticides, which (if stored and used incorrectly) can negatively impact the health of workers, local communities, and surrounding ecosystems. To minimize these risks, the 2020 Rainforest Alliance Sustainable Agriculture Standard requires farmers to implement integrated pest management practices that reduce chemical use through better monitoring and preventative measures, as well as natural (manual and non-chemical) pest control. The new standard also prohibits the use of most Highly Hazardous Pesticides (as listed by the FAO and World Health Organization) and requires strict mitigation measures for allowed substances that pose specific risks to people or the environment.

The 2020 Standards also build on several other existing certification requirements related to workers' rights, health and safety, forest and stream protection, and more. For example, across the banana sector, many plantation workers earn less than a living wage. The 2020 Standards aim to drive progress on this issue by including a living wage tool that helps producers understand the living wage gap and then set mandatory targets and a timeline for progressing toward a living wage for their workers.

*The Rainforest Alliance believes that greater progress can be made if responsibility for the costs of sustainable banana production is shared more equitably across the supply chain.*

As a result, the 2020 Standards will include a mandatory sustainability differential (premium) for certified bananas as well as measures to increase economic transparency.





REACH<sup>80</sup>

# certified farmers

2,000+

# hectares

185K+

## IMPACTS

There are three published papers that have assessed the impact of Rainforest Alliance certification in the banana sector; all of these studies investigate agrochemical use and provide a range of conclusions about the effectiveness of certification in addressing pesticide risk.

In Ecuador, researchers assessed the environmental risk posed by banana farming through a comparison of certified and non-certified farms.<sup>81</sup> The study found that Rainforest Alliance Certified banana farms used more sustainable practices in the areas of agrochemical management, pest control, and water quality than non-certified farms. For example,

certified farms tended to select agrochemicals based on the presence of safer active ingredients, while non-certified farms selected chemicals based on cost and efficacy.

In Costa Rica, researchers investigated agrochemical practices and biodiversity on Rainforest Alliance Certified, organic, and non-certified banana farms.<sup>82</sup> While organic farms used far fewer pesticides, the amount of pesticides and usage patterns were found to be comparable between Rainforest Alliance Certified and non-certified farms. Similarly, the composition of bird species on Rainforest Alliance Certified farms was statistically the same as that on non-certified farms. The researchers suggest that the similarity between Rainforest Alliance and non-certified banana plantations may be due to the uptake of more sustainable practices across the banana sector in Costa Rica. However, the fact that biodiversity was highest on organic farms suggests there are biodiversity benefits of reducing agrochemical use.

Most recently, a 2019 study looked at various socioeconomic and environmental factors on both Rainforest Alliance Certified and non-certified banana farms in Colombia.<sup>83</sup> The study found that wages and working conditions on certified farms were better than those on non-certified farms, and that certified farms employed better practices regarding pesticide use and worker safety (see box #4).

### Box 4

## Wages and worker health and safety on Rainforest Alliance Certified banana farms in Colombia

A 2019 study of Rainforest Alliance Certified banana farms in Colombia found that certified farms scored higher on most socioeconomic indicators than non-certified farms. However, the researchers present these findings with certain caveats.<sup>84</sup> For example, hourly wages were higher on certified farms, but only because these farms employed a higher proportion of permanent workers, who receive higher wages than temporary workers. Workers on certified farms also received higher monthly wages and greater benefits such as paid leave. Although wages on all farms—certified and non-certified—were above the minimum wage, workers reported that they were still not high enough to cover their basic daily needs.

Workers on certified farms were more likely to wear all their protective gear, and while pest management practices were similar on certified and non-certified farms, these activities were better managed on certified farms. Notably, certified plantations placed longer restrictions on entry periods after pesticide spraying and had better practices for notifying workers about fumigations. Further, all certified farms

were found to have a designated occupational health and safety professional, compared to only 19 percent of non-certified farms. Certified workers also reported feeling more protected by their farms' grievance systems and were freer in their right to organize, compared to workers on non-certified farms.

The researchers also found that certified plantations had significantly higher yields than non-certified plantations. However, the difference between the two was modest (43 boxes per hectare each week on certified farms compared to 39 on non-certified farms) and the researchers caution that this difference is likely affected by the size difference between certified and non-certified farms (on average 25 ha and 5 ha, respectively).

This study provides valuable baseline data and highlights areas for improvement, many of which have been built into the 2020 Rainforest Alliance Standards. Although the findings of this study mainly reflect the situation of smaller farms in Colombia, the need to protect workers' rights and support better livelihoods applies to the entire banana sector.





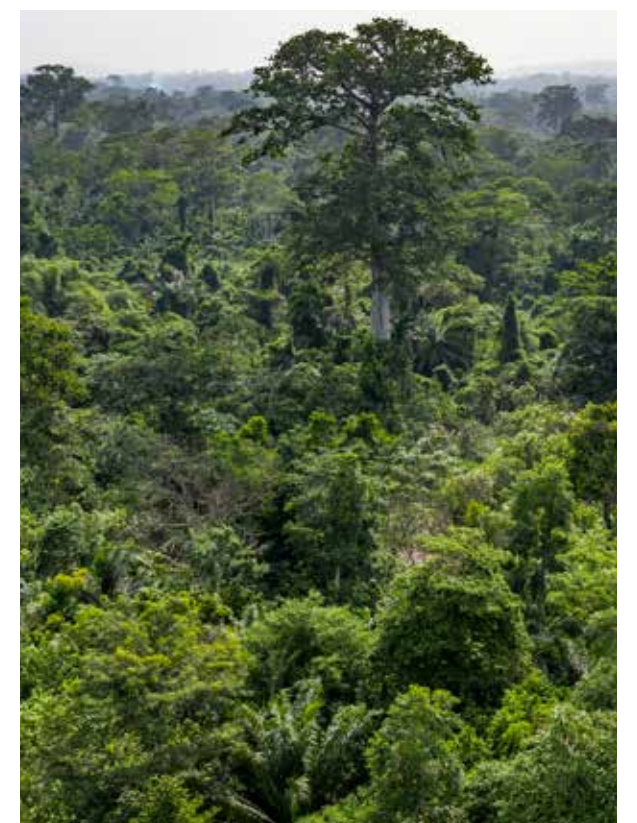


# LOOKING FORWARD

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The Rainforest Alliance envisions a world where people and nature thrive in harmony. As an evidence-based organization, our path forward continues to evolve as we actively conduct and learn from scientific research and synthesize insights from our vast field experience across more than 70 countries. The research findings summarized in this report have strongly influenced the development of our new certification program. This rich evidence base provides critical insights into the strengths and limitations of our previous standards and, in turn, supports our ability to continually improve and innovate.

In the past, the Rainforest Alliance and UTZ standards have always required farmers to implement measures for the protection of forests and other natural ecosystems—and research shows that this approach has been effective. Certified farms not only have lower rates of deforestation, compared to non-certified farms, but also have a higher degree of on-farm tree cover and a wider diversity of tree species. Certified farms also enjoy greater habitat availability and connectivity—both critical for maintaining healthy wildlife populations. The 2020 Certification Program builds on these positive results by strengthening requirements for the conservation and regeneration of natural ecosystems.







How will we know whether the innovations in the 2020 Certification Program are working? In addition to independent studies and commissioning new research where we see gaps, the Rainforest Alliance collects data on a variety of indicators throughout the audit process.<sup>85</sup> Some of these data points—such as the number of workers on certified farms—have been collected over many years, giving us a long term perspective on the number of people our programs reach. Other indicators have been introduced and are expected to provide a more nuanced and context-specific view of sustainability performance and trends on certified farms.

We urgently need to make agriculture more sustainable—but the underlying social and environmental challenges are among the most difficult that our global society faces. By learning from experience, responding openly and constructively to scientific evidence, and working closely with our stakeholders, we are confident that together we can find the best solutions to these challenges. We are excited about the new path we have forged with our 2020 Certification Program and we invite you—whether you're a farmer, scientist, business leader, or consumer—to join us as we continue on our journey.

There has been fairly extensive research into the impacts of Rainforest Alliance and UTZ certification on farmers' livelihoods, but here the results are more mixed. While some studies show that certification improves farmers' incomes (due to better yields and higher crop prices), others observe that these improvements are still not enough to ensure a decent standard of living. The 2020 Standards strive for better outcomes through the introduction of a mandatory sustainability differential (premium) in addition to continued efforts to boost farm productivity and support progress towards a living wage.

The impacts of Rainforest Alliance and UTZ certification on climate resilience have also been well studied, albeit indirectly. Research shows that training is effective in encouraging farmers to adopt climate-smart agricultural practices that can help them adjust to pressing challenges such as rising temperatures and unpredictable rainfall. Conversely, research on the impacts of certification on human rights issues is sparse. Nevertheless, the research that has been done is generally positive, indicating that workers on certified farms are more likely to enjoy important protections such as the right to freedom of association and access to grievance mechanisms.







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# ENDNOTES

1 Unless otherwise noted, '2020 Standards' refers to both the Sustainable Agriculture Standard and the Chain of Custody Standard; '2020 Certification Program' refers to the two standards plus the tools, guidance, and training materials that facilitate their uptake and implementation.

2 Newsom & Milder (2018).

3 UTZ (2016).

4 [www.evidensia.eco](http://www.evidensia.eco)

5 See Evidensia, [www.evidensia.eco](http://www.evidensia.eco)

6 Kruger et al. 2014; differences not tested for statistical significance.

7 The map is based on the locations of 240,948 UTZcocoa farms certified in Ivory Coast for 2019–2020. The data came from the certified farm groups and third-party sources and was received by 2020 April 6. The Rainforest Alliance cannot guarantee the full accuracy of the data. This map cannot be used to check compliance of UTZ certified farms with the UTZ standard.

8 Beekman et al. 2019; Mitiku et al. 2018; Akoyi & Maertens 2017; Ingram et al. 2017; Bini et al. 2016; Fenger et al. 2016; Hughell & Newsom 2013; Barham & Weber 2012.

9 Mitiku et al. 2018; Bini et al. 2016.

10 Akoyi & Maertens 2017; Ingram et al. 2017; Mitiku et al. 2017; Barham & Weber 2012.

11 Deppeler et al. 2014; Borg & Selmer 2012.

12 Mitiku et al. 2018; Hagggar et al. 2017.

13 Akoyi & Maertens 2017; Hagggar et al. 2017; Bennet et al. 2012.

14 The 2020 Sustainable Agriculture Standard does not set a mandatory level of sustainability differential to be paid. Specific guidelines will be developed for different sectors on how this should be implemented.

15 Voora et al. 2019.

16 Panhuysen & Pierrot 2018.

17 Jha et al. 2014.

18 All data is accurate as of December 2019 Includes both Rainforest Alliance and UTZ Certified farms, with totals calculated using estimates of how many farms are certified by both programs. The size of the certified farmland includes production area of the certified crops only.

19 Mitiku et al. 2018; Hughell & Newsom 2013; Barham & Weber 2012.

20 Akoyi & Maertens 2017; Mitiku et al. 2017; Kamau et al. 2010.

21 Akoyi & Maertens 2017; van Rijsbergen et al. 2016; Hughell & Newsom 2013; Barham & Weber 2012

22 Mitiku et al. 2018; Hagggar et al. 2017; Bini et al. 2016; Hagggar et al. 2012; Kamau et al. 2010.

23 Dietz et al. 2019a; Dietz et al. 2019b; Barham & Weber 2012.

24 Akoyi & Maertens 2017; Hagggar et al. 2012.

25 Dietz et al. 2019a.

26 Dietz et al. 2019b

27 Rueda et al. 2014; Rueda & Lambin 2013; Takahashi & Todo 2013.

28 Rueda & Lambin 2013; Hughell & Newsom 2013; Hagggar et al. 2012.

29 Rueda & Lambin 2013.

30 Hagggar et al. 2017; Takahashi & Todo 2017; Hardt et al. 2015.

31 Aerts & Spraghers 2017; Komar 2012.

32 Aerts & Spraghers 2017.

33 Komar 2012.

34 Takahashi & Todo 2017.

35 Rueda et al. 2015.

36 De Jesús-Crespo et al. 2016.

37 Dietz et al. 2019b.

38 World Cocoa Foundation, n.d.

39 Kroeger et al., n.d.

40 Rainforest Alliance, 2019.

41 All data is accurate as of December 2019. Includes both Rainforest Alliance and UTZ Certified farms, with totals calculated using estimates of how many farms are certified by both programs. The size of the certified farmland includes production area of the certified crops only.

42 Ingram et al. 2017; Fenger et al. 2016; Deppeler et al. 2014; Bennet et al. 2012; Borg & Selmer 2012; Krain et al. 2011.

43 Ingram et al. 2017; Fenger et al. 2016; Deppeler et al. 2014; Krain et al. 2011.

44 Deppeler et al. 2014; Borg & Selmer 2012; LeBaron 2018.

45 Deppeler et al. 2014.

46 Waarts et al. 2015; Deppeler et al. 2014; Bennet et al. 2012.

47 Fenger et al. 2016; Bennet et al. 2012; Borg & Selmer 2012.

48 Borg & Selmer 2012; significance not reported.

49 Fenger et al. 2017; significance not reported.

50 Ingram et al. 2017.

51 Sarkar & Reji, 2019; Ansari & Sheereen, 2016.

52 Rainforest Alliance, 2020.



53 All data is accurate as of December 2019. Includes both Rainforest Alliance and UTZ Certified farms, with totals calculated using estimates of how many farms are certified by both programs. The size of the certified farmland includes production area of the certified crops only.

54 Haagsma et al. 2016, differences not tested for statistical significance; Esham et al. 2019.

55 Esham et al. 2019; Waarts et al. 2012.

56 Kruger et al. 2014, differences not tested for statistical significance.

57 Waarts et al. 2012.

58 Haagsma et al. 2016, differences not tested for statistical significance; Waarts et al. 2012.

59 Premaratne et al. 2018, differences not tested for statistical significance.

60 Stathers & Gathuthi 2013.

61 Waarts et al. 2012.

62 Esham et al. 2019.

63 Haagsma et al. 2016, differences not tested for statistical significance.

64 Haagsma et al. 2016, differences not tested for statistical significance; Waarts et al. 2012

65 Stathers & Gathuthi 2013, differences not tested for statistical significance.

66 Lalitha et al. 2013.

67 Stathers & Gathuthi 2013.

68 Lalitha et al. 2013.

69 LeBaron 2018, differences not tested for statistical significance. This study grouped results from Rainforest Alliance and three other sustainable tea certification programs together.

70 Lalitha et al. 2013.

71 Lalitha et al.2013.

72 Stathers & Gathuthi 2013.

73 Haagsma et al. 2016, differences not tested for statistical significance; Stathers & Gathuthi 2013.

74 Haagsma et al. 2016, differences not tested for statistical significance; Stathers & Gathuthi 2013.

75 Stathers & Gathuthi 2013.

76 Ochieng et al. 2013.

77 Ochieng et al. 2013.

78 Waarts et al. 2012.

79 Willemen et al. 2019.

80 Data accurate as of December 2019. UTZ program doesn't include bananas.

81 Melo & Wolf 2007.

82 Bellamy 2016. Although this study reports some significant differences, it has many methodological weaknesses. The data were collected over a decade ago, in 2007; each group of farmers (organic, Rainforest Alliance, and non-certified) was located in a different biological zone; and the average size of the sampled organic farms was 1/10<sup>th</sup> the size of the sampled conventional farms, and nearly 1/20<sup>th</sup> the size of the sampled Rainforest Alliance certified farms.

83 Beekman et al. 2019.

84 Beekman et al. 2019; Although certified and non-certified plantations were comparable on most factors, they differed in terms of their size and trader affiliation, which could affect access to training. Therefore, the differences reported in this study are potentially due to attributes besides certification alone.

85 Rainforest Alliance, n.d.

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