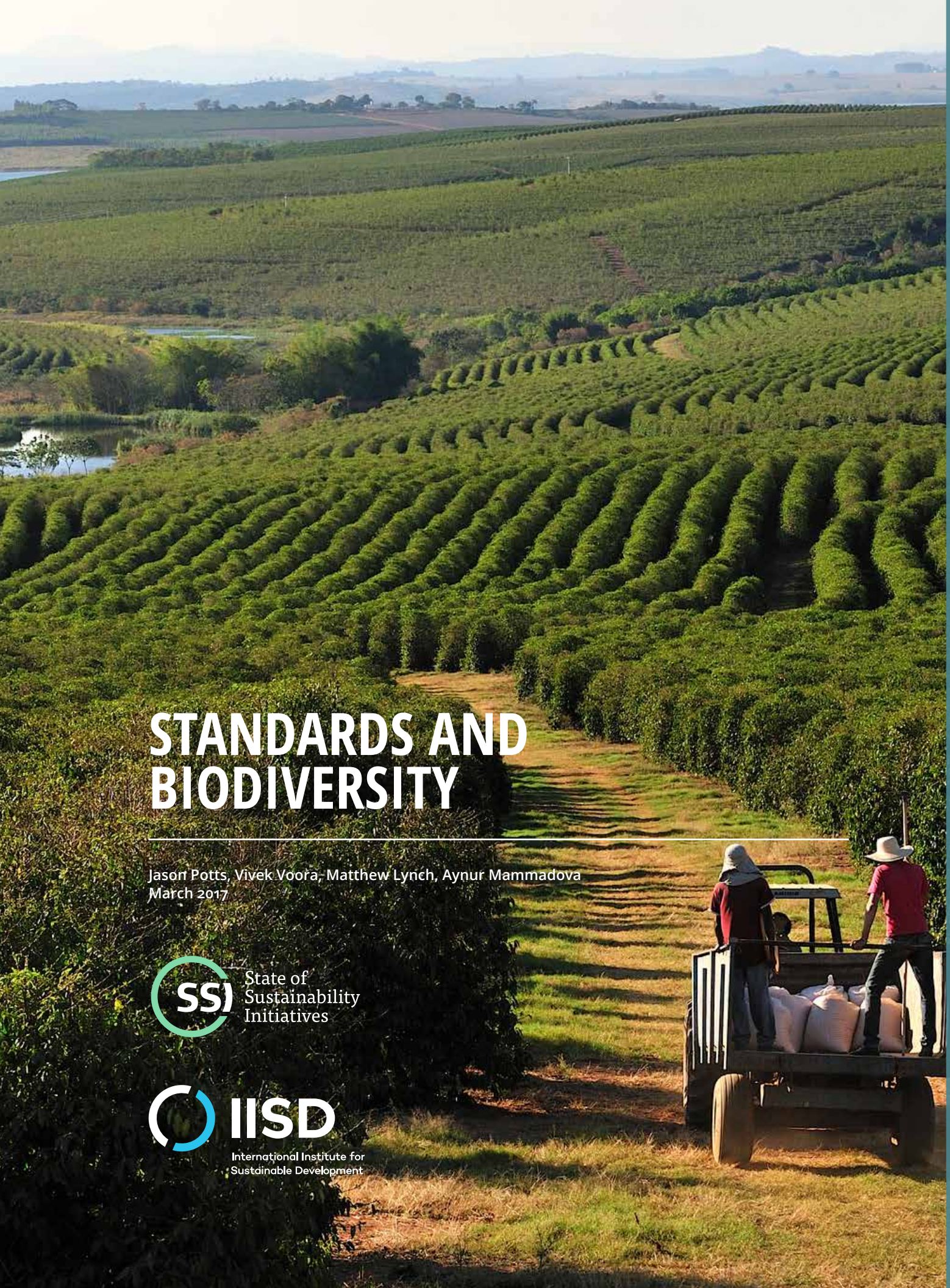

STANDARDS AND BIODIVERSITY

Jason Potts, Vivek Voora, Matthew Lynch, Aynur Mammadova
March 2017

State of Sustainability Initiatives

IISD
International Institute for Sustainable Development

Thematic Review

Foreword

The importance of biodiversity and healthy ecosystems for agricultural production is increasingly being recognized, including in the 2030 Agenda for Sustainable Development. At the same time, while more sustainable practices are increasingly being adopted in agricultural production, agriculture remains the single largest cause of biodiversity loss.

A number of voluntary standards for reducing adverse impacts on ecosystems and biodiversity have been developed for a number of key agricultural commodities. However, such standards were not necessarily developed from a common basis and are lacking for many other commodities. With this in mind, the Secretariat of the Convention on Biological Diversity undertook to identify, with inputs from a range of experts, a core set of biodiversity indicators that might be applied by parties and their agricultural sectors to gauge and compare the respective contributions of these factors in reducing negative impacts on biodiversity. The resulting Biodiversity Impact Indicators for Commodity Production (BIICP) provide a tool for testing and use by these actors. It was also envisioned that they could be further taken up by existing initiatives and standards that address the interface of biodiversity and agricultural commodities. This is all the more urgent, as the growing demand for agricultural commodities will increase the pressures on biodiversity, unless these pressures are appropriately addressed.

Voluntary sustainability standards are an important element of the necessary policy mix to redirect funding towards sustainable production practices and reducing biodiversity loss. This report makes an important contribution by providing a better understanding of the role and potential of different voluntary sustainability standards, and what policy-makers can do to promote their wider application and their more robust integration into overall policy frameworks.

My appreciation and thanks go to the International Institute for Sustainable Development for this timely report. I hope that its analysis and recommendations will be taken into account in the further design of standards and associated public policies.

Cristiana Paşca Palmer, Ph.D
Executive Secretary
Convention on Biological Diversity

Preface

Agricultural production currently accounts for an estimated 40 per cent of global land surface, arguably making it the single most important segment of the economy from a sustainable development perspective. In addition to playing a major role in poverty reduction (SDG 1), zero hunger (SDG 2) and climate action (SDG 13), it is also one the single most important factors determining global ecosystem health and biodiversity (SDG 14 and SDG 15). What happens in agriculture matters.

Any plausible approach to a wide-scale transformation of agriculture toward sustainable practices must include a vision that directly links economic growth (SDG 8) to sustainable consumption and production (SDG 12).

In this context, the recent growth of voluntary sustainability standards represents a major opportunity. Voluntary sustainability standards set common rules of practice across all actors within the global economy and allow producers and companies to compete on non-price factors, including social, economic and environmental sustainability. They have the potential to create systemic and enduring economic incentives for the adoption of sustainable practices.

The opportunities presented by voluntary standards are particularly acute within the context of biodiversity conservation. With much of the early growth of voluntary sustainability standards having occurred within the agricultural sector, itself the single greatest driver of biodiversity loss, and the vast majority of voluntary standards including significant environmental criteria, they would appear to be well positioned to play a major role in biodiversity conservation.

However, sustainability standards, being voluntary in nature, have developed through an idiosyncratic mix of political, economic and sustainability concerns, giving rise to a high degree of variability among standards systems themselves. And while the diversity of voluntary standards has enabled much-needed innovation in the definition, monitoring and enforcement of sustainable agricultural production, it has also given rise to its own set of questions. How do different initiatives compare in their treatment of biodiversity conservation? What are the actual impacts of such initiatives on biodiversity, and where are these impacts occurring?

Although this report makes no pretense to answering such questions definitively, it does provide an important starting point for making such determinations. By linking the latest criteria and market data for major agricultural standards, with the recently developed Biodiversity Impact Indicators for Commodity Production (BIICP), the report offers a uniquely generic and multi-pronged framework for understanding the potential contribution of voluntary standards to biodiversity conservation.

Ultimately, one of the most important findings of the report may be in its acting as a reminder of how close we are to the beginning of this trajectory. Although markets for certified products have been growing rapidly over the past decade, they still only represent a small portion of overall agricultural production, with many regions of production entirely absent. We all still face a steep learning curve in understanding how these initiatives can be leveraged to their intended outcomes in the most effective way. We hope that this report can play a helpful role in this learning process.

Scott Vaughan
President-CEO
International Institute for Sustainable Development

Executive Summary

Between 2015 and 2016, the Secretariat of the Convention on Biological Diversity convened a multistakeholder group of experts to identify a core set of biodiversity indicators that might be measured by member countries as a basis for understanding the state of biodiversity risk posed by agricultural production within their respective jurisdictions. The resulting Biodiversity Impact Indicators for Commodity Production (BIICP) offer a starting point for understanding the contribution of agricultural practices to biodiversity protection. Voluntary sustainability standards (VSSs) are increasingly being adopted in a variety of sectors as a basis for promoting sustainable agriculture at production. This review attempts to understand the degree to which major VSSs operating in the agriculture sector are aligned with the specific biodiversity-related objectives targeted by the BIICP. The following is a summary of the findings based on our analysis.

The growth of standard-compliant production continues to outpace growth for conventional products in the eight sectors where standards are most active. Standard-compliant production is on track to reach 10 per cent or more of global production across each of these sectors by 2020.

Commodity production compliant with one or more of the 15 voluntary standards covered in this review across the banana, cotton, coffee, cocoa, tea, sugar, palm oil and soybean sectors combined grew, on average, 35 per cent per annum between 2008 and 2014. The average growth of conventional production over the same period was 3 per cent. By 2014, four of the eight markets reviewed had achieved compliance rates of 10 per cent or more of global production. Based on current market trends and existing "unimplemented" corporate commitments to sustainable sourcing, we expect that standard-compliant production for each of the eight markets will have reached 10 per cent or more of total global production by 2020.

Notwithstanding the significant market growth of voluntary standards across select agricultural sectors, standards remain a negligible force across global agricultural production as a whole.

The total area covered by standards in the eight sectors where standards are most active reached 14.5 million hectares in 2014, accounting for less than 1 per cent of global agricultural area. Similarly, we estimate that 100 per cent certification of these eight agricultural commodities would amount to a mere 12 per cent of global agricultural land area. If voluntary standards are to play a major role in reducing the impacts of agriculture on biodiversity loss, they will have to, at a minimum, establish a significant presence among other crops—most notably, staple crops such as wheat, maize and rice.

The requirements specified by voluntary standards prioritize protection against habitat loss, historically the single most important driver of agriculturally caused biodiversity loss.

The voluntary standards reviewed display a clear emphasis on requirements directed toward habitat conservation. Of the standards reviewed, 87 per cent prohibit production on land recently converted from some or all types of forestland while seven of the top 10 requirements (in terms of average coverage) targeted habitat conservation. Given that habitat loss, principally due to land conversion, represents the single most important driver of biodiversity loss arising from agriculture, the focus of voluntary standards on habitat protection is encouraging from a biodiversity perspective.

Voluntary sustainability standards are less well prepared to deal with impending drivers of biodiversity loss such as climate change.

While forest conversion has traditionally been one of the most important drivers of biodiversity loss, climate change is expected to replace conversion as the most important driver as opportunities for expansion decrease and climate change impacts become more severe. Climate change-related requirements had the lowest level of coverage among the standards reviewed, with none of the standards including strict (critical) requirements on the measurement or reduction of greenhouse gasses (GHGs). Meanwhile requirements explicitly focusing on biodiversity protection are relatively rare among the initiatives surveyed, with only 40 per cent of initiatives specifying critical requirements for risk assessment of biodiversity impacts and 13 per cent requiring that agricultural practices produce no net loss of biodiversity. More explicit attention to biodiversity loss and GHG measurements could facilitate better management of biodiversity loss in the future.

Requirements under existing standards prescribe practices rather than performance outcomes, leaving a vacuum of data and evidence with respect to impacts.

The vast majority of requirements specified under agricultural sustainability standards specify ***practices*** rather than performance ***outcomes***. Moreover, requirements tend to focus on practices that ***protect*** ecosystems rather than practices related to the monitoring, measurement or restoration of such systems. Thus, although standards typically maintain a sophisticated auditing infrastructure that is capable of collecting outcome data, the actual requirements associated with the standards are not prone to producing such data. These observations underscore an outstanding opportunity for standards to play a more proactive role in data collection linked to biodiversity performance targets.

The geographic distribution of compliance with voluntary standards dictates their area of influence on biodiversity protection but poor spatial data limits specific understanding of potential spatial impact.

In markets where standards only represent a fraction of overall production, their ability to prevent the most egregious threats to biodiversity depends on their relative presence in those regions where such threats exist. A spatial mapping of those commodities where standards are most active against key BIICP reveals a mixed degree of overlap of standards and key biodiversity impact pathways. At current compliance levels, every sector reviewed is potentially subject to significant leakage through conventional production in areas of biodiversity risk. The absence of comprehensive GIS location data for certified production represents a significant challenge in understanding the distributional effect of standards adoption on areas of strategic importance to biodiversity conservation.

Commodity-Specific Observations

Banana certification may be limited by the small portion of production that is traded internationally.

Bananas, as an agroforestry product, have the potential to support relatively high levels of biodiversity. However, banana production is typically grown in a monocrop environment and is one of the most intensive sources of pesticide application in agriculture (second only to cotton by volume). Unlike most of the other commodities reviewed, growth of banana certification has been modest over the past five years, with the per annum growth ranging from 4 to 13 per cent among active initiatives (2008–2014). Moreover, although only 7 per cent of global production is certified, we estimate this constitutes more than 65 per cent of globally traded bananas, suggesting that a glass ceiling on growth may be imminent in the absence of new demand from Southern countries.

Cocoa certification appears to be well positioned to promote improved soil fertility where it matters most through strong presence in countries facing soil fertility challenges.

Cocoa production is one of a handful of crops that enjoys shade cover in its regular production and thus can play an important role in protecting forest-related biodiversity. Global cocoa production, however, has faced stagnant and often decreasing per-hectare yields across several of the major African producing countries, due in part to reduced soil fertility. Cocoa standards, which have relatively strict requirements on crop rotation and intercropping, can offer a pathway for improved soil management. As of 2014, 30 per cent of global production was standard-compliant, with the vast majority of compliant production located across African countries with lower soil qualities. Distributionally speaking, cocoa standards appear to be targeting some of the most strategic regions from a soil management perspective. Significant opportunities exist for cocoa standards to play a more proactive role with respect to the protection of high-fertility soils in Indonesia.

Coffee certification appears to be well positioned to limit the eutrophication-related impacts of coffee production.

Coffee, like cocoa, can be grown as an agroforestry product under shade conditions and therefore has the potential to protect forest-based biodiversity through environmentally sound production practices. Since the 1990s, coffee production has been transitioning from shade grown to full sun coffee, generating increased pressure on key biodiversity hotspots. In addition to the obvious problem of reduced forest cover and related ecosystem integrity, the transition to full sun production has resulted in increased fertilizer use and, correspondingly, nitrogen runoff to water bodies. A mapping of the distribution of voluntary standards reveals that standards are highly active in areas where the threat of eutrophication from coffee production is most prominent. Voluntary standards also exhibit a strong presence in many countries that still rely on traditional shade practices. The promise of higher prices and better market access associated with standard compliance may also limit coffee-related eutrophication by reducing market pressure on farmers in these regions to transition to full sun production.

Cotton certification appears to be under-represented in countries where cotton-related water use is most problematic.

Cotton requires significant amounts of water for commercial production and has historically been a driver of water scarcity in several major producing regions. Water use efficiency is thus an essential component of sustainable cotton production. Water use requirements across cotton standards emphasize water recycling and efficient irrigation practices, with the Better Cotton Initiative (BCI), the dominant cotton standard, reporting critical requirements across all water use indicators measured. By 2014, 1.9 million Mt or 7 per cent of global cotton lint production was standard compliant, up from 163 thousand tonnes or one per cent in 2008. BCI alone aims to have 30 per cent of the world's cotton production certified under the program by 2020. Although both African and Asian countries have been experiencing growth in certified production, Brazil clearly dominates the market, accounting for 41 per cent of all certified cotton in 2014. Expansion of certified cotton across Pakistan and India offer significant opportunities and should be considered to be of strategic importance from a cotton water management perspective.

Palm oil certification is geographically focused where forest conversion is most problematic but may nevertheless have limited impact due to the scale of demand for conventional palm oil by Asian countries.

Oil palm expansion has been linked to massive deforestation threatening biodiversity in the major producing regions. Over 80 per cent of palm oil exports come from the biodiversity hotspots of Indonesia and Malaysia, 60 per cent of which are estimated to have directly displaced forests since the year 2000.

The Roundtable on Sustainable Palm Oil, which has prohibitions against oil palm production on recently converted ***primary*** forests but, importantly, not all forests, is the dominant certification system operating in the sector—accounting for 99.5 of all standard-compliant production in 2014. By 2014, 55.4 million Mt or 20 per cent of the world's oil palm was standard compliant, up from around 2 per cent in 2008. Virtually all of certified oil palm is sourced from Malaysia, Indonesia and Papua New Guinea—key targets for addressing natural habitat loss arising from oil palm production. The most important challenges facing certification effectiveness in the oil palm sector may be limited demand for certified palm oil across India and China, which together account for 40 per cent of global demand. Unless buyers in these countries require compliance with standards, significant markets for uncertified palm oil can be expected to continue to drive deforestation and/or low standards in producing regions, potentially limiting the effectiveness of certification.

Soy certification is most active in key areas of biodiversity vulnerability but has low adoption rates due to low demand for certified soy from China, the world's most important importer.

Rapid expansion of soy production over the past two decades has driven significant deforestation, particularly in South America. Meanwhile, more than 80 per cent of global soy production is genetically modified, giving rise to increased use of herbicides. Both trends, combined with soy's pronounced overlap with high-biodiversity areas more generally, pose significant biodiversity threats. Although the highest percentage of certified soy comes from the Latin American region where soy expansion poses a particular biodiversity threat, overall certification levels have remained at below 3 per cent despite the active presence of a global mainstream initiative for more than a decade and more than two thirds of soy production being traded on international markets. One of the main hurdles to significant expansion of certified soy production has been the dominance of Chinese demand, which accounts for two thirds of global soy imports but has not, as of yet, generated significant demand for sustainable soy.

Sugarcane certification is disproportionately concentrated in Brazil, which has lower per-volume fertilizer use than other major producing countries.

Sugarcane is associated with high levels of fertilizer and water inputs and thus poses a significant threat to water quality. Sugarcane standards have strong requirements limiting pesticide use and requiring pesticide monitoring. Between 3 and 4 percent of global sugarcane production is certified with Bonsucro, accounting for the vast majority of certified production (52 million tonnes). The overwhelming majority of standard-compliant sugarcane (79 per cent of global) comes from Brazil, which generally has lower per-volume fertilizer inputs than other major producing countries such as India, China, Pakistan and Mexico. These countries represent strategic opportunities for the expansion of certified sugarcane aimed at protecting water quality.

Tea production compliant with standards accounts for 18 per cent of global tea production (by volume) but only 13 per cent of global area under tea production.

Habitat conversion, caused by the plantations themselves when they replace tropical forests and the removal of timber for use in the tea-drying process, represents one of the most systemic threats to biodiversity arising from tea production. By 2014, standard-compliant tea accounted for 18 per cent of global production, up from 6 per cent in 2008. Meanwhile, Rainforest Alliance-certified production, the dominant certifier in the sector, grew at a rate of 25 per cent per annum from 2012 to 2014. Notwithstanding these impressive results, certified tea area only represents 13 per cent of global area under tea production. The adoption of standards in tea, as with standards adoption in many other commodities, tends to occur in farms that already employ more sophisticated practices and are associated with higher yields. Strategic intervention by policy-makers may be necessary to enable certification in lower-yielding regions.

Policy Options

Based on our review, it is clear that the major agricultural standards contain significant requirements related to biodiversity conservation. It is also clear, however, that the ***implementation*** of standards, being driven by market forces, is, at best, only partially aligned with biodiversity protection. Policy-makers have a role to play in leveraging the momentum and infrastructure behind voluntary standards to promote a more intentional, strategic and, ultimately, effective implementation of voluntary standards for biodiversity conservation. Key policy options include:

Policy Option 1 – Support Biodiversity-Driven Implementation: Policy-makers can collaborate with voluntary standards during the rollout strategies in their respective countries to facilitate and provide incentives for adoption in areas where they will have maximum impact. Setting national targets and/or requirements for levels of standard-compliant production could support the achievement of Sustainable Development Goal (SDG) 2, SDG 12 and SDG 15 simultaneously.

Policy Option 2 – Offer Leadership in the Development of Integrated Data Systems: Policy-makers can finance the development of national, regional and international data collection and sharing systems that enable voluntary standards (and other stakeholders) to share data with the general public and policy-makers along harmonized parameters so that their role as data collectors can be leveraged to support effective biodiversity management at the national and regional levels.

Policy Option 3 – Support Voluntary Sustainability Standards in the Development of Effective Requirements: Policy-makers can provide financing to standards and research partners to determine the biodiversity-specific impacts of agricultural production within specific crops so that these can be effectively integrated into the standards development and implementation processes.

Policy Option 4 – Support Impact Research and Analysis: Policy-makers can provide financing to researchers to determine the biodiversity impacts of voluntary standards operating in key sectors as a basis for continual improvement and for determining the strategic application of policy support to such initiatives. Impact data and analysis at the field level as well as data on market distribution and trends should be prioritized, allowing for farmers and other stakeholders to make real-time course corrections toward sustainability and biodiversity protection.

Policy Option 5 – Implement a Policy Framework for Credibility Assurance: To ensure market fairness and the overall effectiveness of the voluntary sustainability standards sector in meeting stated (biodiversity) objectives, policy-makers can set credibility, accuracy and evidence-based ground rules to ensure that market claims are supported by responsible practice and evidence-based outcomes.