



THE DRIVE TO PROTECT FORESTS: INTRODUCING SUSTAINABLE CATTLE CERTIFICATION IN BRAZIL, 2009–2016

Blair Cameron drafted this case study based on interviews conducted in São Paulo, Brazil during August and September 2016. The British Academy-Department for International Development Anti-Corruption Evidence (ACE) Program funded the development of this case study. Case published November 2016.

SYNOPSIS

In 2009, after environmental action group Greenpeace labeled cattle ranching in Brazil as the biggest cause of deforestation worldwide, the country's giant beef industry got on the defensive. For many years, ranchers and land speculators had illegally cleared the Amazon rain forest and other important ecosystems to satisfy demand for beef. Amid calls for change, the Sustainable Agriculture Network, a global alliance of environmental organizations, created a certification system designed to encourage the adoption of sustainable ranching practices and foster a market for forest-friendly beef and leather products. After some early success—getting certified beef onto the shelves of a major supermarket chain—the initiative stalled. Few consumers and corporations cared about where the beef they bought came from, and ranchers were reluctant to change their ways in the absence of significant financial incentives. By late 2016, only a handful of ranchers, whose combined holdings represented a tiny fraction of 1% of Brazil's pastureland, had received certification. However, the program succeeded in developing niche markets for certified beef, and proponents expressed hopes for more gains as consumers became more interested in the sustainability of food production.



INTRODUCTION

“My dad and my grandfather were old school, so they never paid much attention to sustainability and preservation,” said Bruno Andrade, a young Brazilian cattle rancher who in 2016 gained certification for his ranch from the Sustainable Agriculture Network (SAN), a global partnership of nongovernmental organizations (NGOs). “My father always wanted to cut the forest down and put more cattle [on the land]. But I always looked at it with a different view.”

Andrade’s ranch was one of the first to gain SAN sustainable cattle certification. Soon after, his beef products—labeled with the little green frog seal of the Rainforest Alliance, one of the nine NGOs that formed SAN in 1997—hit gourmet supermarkets in Brazil in August 2016.

Andrade’s shift to sustainable ranching was part of a movement to protect important ecosystems and improve food production. “We have a limited volume of natural resources, and we have been using more than the planet can replenish,” said Carlos Saviani, a former rancher who in 2014 became vice president of sustainable food at the World Wildlife Fund, an international environmental NGO. “If we don’t do anything, then in 20, 30, or 50 years, we will not be able to feed humanity, and the planet will be totally destroyed. We have to dramatically reduce the environmental footprint of food.”

Brazil’s cattle herds had perhaps the largest environmental footprint of any food source in the world. The Brazilian economy had boomed throughout the 2000s, and Brazilians’ appetite for beef had expanded with their incomes. The international market also grew rapidly. In 2004, Brazil became the world’s largest beef exporter, accounting for roughly a quarter of the global beef trade.¹ To feed consumer demand, cattle ranches expanded nationwide—most notably into the Amazon rain forest. In 2004 alone, more than 27,000 square kilometers of the rain forest were cleared, amounting to the highest level of annual deforestation in a decade (see Figure 1), with the forest’s destruction contributing to air and water pollution, biodiversity loss, and global warming.²

For many years, the Brazilian government had set stringent requirements whereby landowners in the Amazon region had to preserve natural vegetation on at least 80% of their property and had to reforest previously cleared land if their property did not meet that minimum standard. Landowners in other regions were required to conserve smaller proportions of forested area. In the Cerrado, the tropical savanna covering one-fifth of Brazil’s territory, landowners had to protect forest on 35% of their property; in other regions, 20%. But compliance was the exception rather than the rule, and the law, known as the forest code, was never enforced effectively.

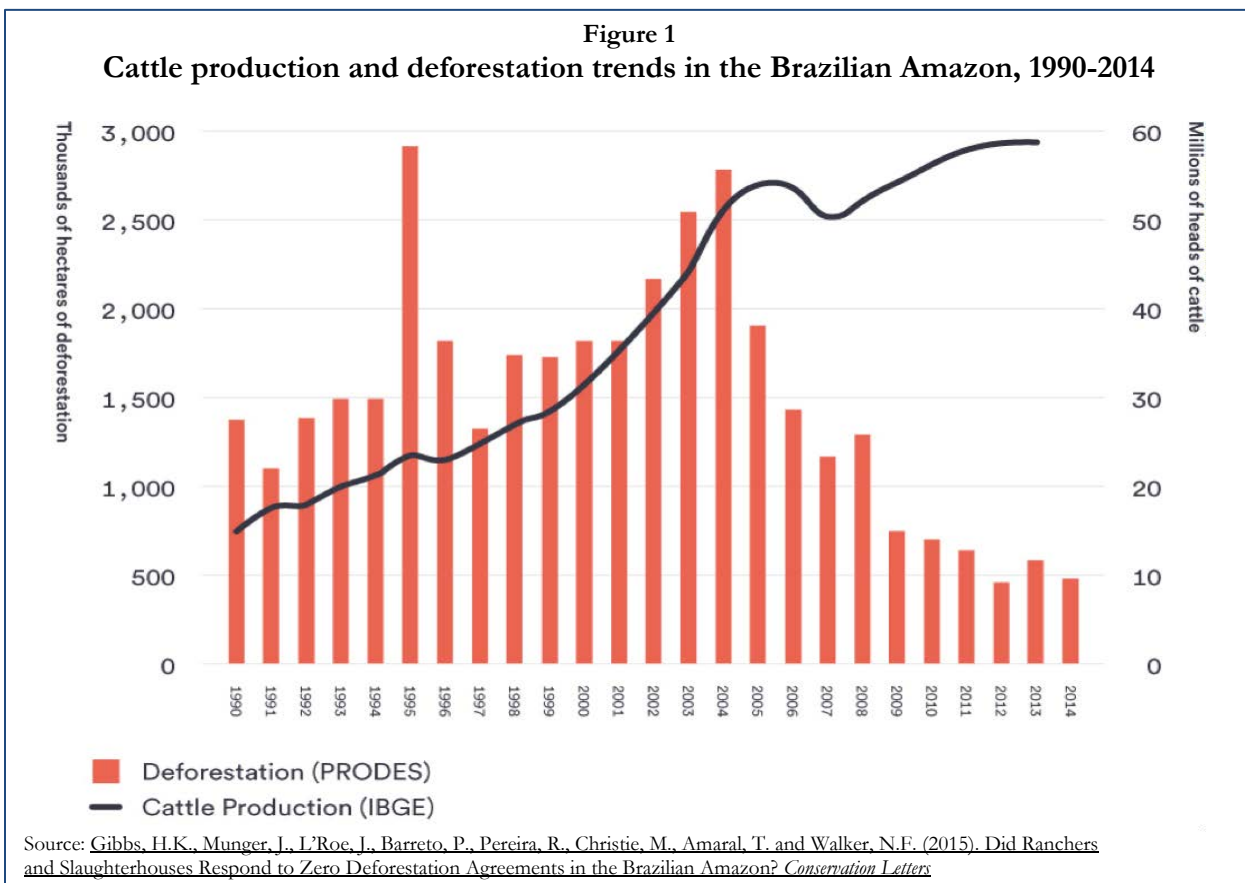
As Brazilian beef exports increased, conservation activists began to raise awareness about the troubling connection between cattle ranching and forest loss. The movement gained international prominence in 2009, when

environmental action group Greenpeace published *Slaughtering the Amazon*, which identified cattle ranching in Brazil as the biggest cause of deforestation worldwide.³ The report “showed that it was not a local problem; it was a global problem,” said Adriana Charoux of Greenpeace’s office in Brazil. “The cattle being slaughtered in the Amazon were arriving to the US and European markets.”

The Greenpeace report drew global attention, and multinational corporations named in it—including Walmart of the United States, Carrefour of France, and Tesco of the United Kingdom—scrambled to provide answers. But few of the companies knew exactly where in Brazil the beef or leather they bought came from—let alone how it was produced.

The new awareness of the link between cattle and deforestation prompted companies and NGOs to take steps to promote sustainable production. One of those efforts was the SAN voluntary certification system. SAN, headquartered in Costa Rica, specialized in certification systems for agricultural commodities such as bananas, coffee, and tea. Like SAN certification for other products, the new system aimed to validate the origin of cattle and guarantee that approved ranches met strict requirements for sustainability.

In the late 2000s, Imaflores, a Brazilian NGO and SAN member, saw certification as a possible solution to the problems exposed in the beef and



leather supply chains. “When cattle became an issue and all the links with deforestation were made, SAN decided that our system had to offer a contribution,” said Luis Fernando Guedes Pinto, executive director of Imaflora at the time. The big question was whether certification could work in an industry as complex, opaque, and environmentally harmful as cattle ranching.

THE CHALLENGE

Until 2007, when SAN staff first began thinking about creating a cattle standard, the organization had worked solely with crop certification. The supply chain for cattle was far more complex than that for other SAN-certified commodities. Whereas crops were grown and harvested in the same locales, cattle herds often moved from place to place, sometimes hundreds of miles, during the three phases of production: breeding, raising, and fattening. Because many ranches specialized in just one stage of the cycle, cattle were constantly being bought and sold before eventually arriving at a slaughterhouse.

After Greenpeace released its report, Brazil’s meatpackers came under intense pressure—from their corporate customers, NGOs, and the government—to do something. “We and the other meat processors were coresponsible for the deforestation,” said Mathias Almeida, a beef trader at Marfrig, one of the four largest meat processors in Brazil at the time. Multinational companies that bought Brazilian beef and leather demanded a solution from the meatpackers, and federal prosecutors threatened to fine those that sourced cattle from recently deforested areas. As pressure grew, Marfrig appointed Almeida, who had a master’s degree in environmental management, to the newly created position of sustainability manager.

In late 2009, Marfrig and the three other major meat processors—Minerva, JBS, and Bertin (later bought by JBS)—signed agreements with Greenpeace and federal prosecutors to stop buying cattle from ranches linked to deforestation in the Amazon region and to begin monitoring their direct suppliers for land-clearing violations. Although the agreements represented a significant step by recognizing the problem, the complexity of the cattle supply chain limited the effectiveness of the approach. Because cattle born on a newly deforested ranch on the agricultural frontier in the Amazon could end up being raised or fattened on a ranch that was owned by someone else many miles away, meat processors had no way to track the animals’ deforestation footprint. In addition, the cattle agreement was limited geographically: The meat processors used the government’s satellite data to detect deforestation, and no such data was collected outside the Amazon. As a result, cattle suppliers in other regions, including Brazil’s vast Cerrado, the world’s most biodiverse savanna, were not monitored.

To complicate matters, ranchers involved in deforestation had plenty of ways to circumvent the system. First, they could sell their cattle to smaller

meat processors that did not monitor their suppliers for deforestation. Another ploy was to “launder” their cattle by selling their herds to other ranchers who would then sell the stock to major meat processors along with their own animals. “It is impossible to avoid cattle laundering,” said Almeida. “If the rancher is taking animals from other farms that have deforested and is bringing them to sell through his own name, it is impossible to trace.”

Wary of customer backlash, some companies, including giant restaurant chain McDonald’s, had already stopped buying cattle from slaughterhouses in the Amazon region. But such corporate policies were problematic because they did not consider forestlands outside of the Amazon region or the geographic span of the supply chain. Only by knowing each step in the production cycle could McDonald’s and other companies ensure that the products they bought did not contribute to deforestation.

Tracing cattle was a major challenge to setting up a certification system, but an even higher hurdle involved persuading ranchers to adopt sustainable practices, which meant getting them to change deeply entrenched ways of doing things. Most of Brazil’s cattle ranches were low-cost, low-productivity operations, and herds grazed on pastures that were much larger than necessary. “Cattle ranchers have usually done this kind of production for decades,” said Leila Harfuch, a researcher at Agroicone, a Brazilian agribusiness research institute. Further, she said, cattle ranchers were very risk averse: “They can produce cattle in an extensive way and still make money—not a lot of money, but the risk of losing money is very small.” Farmers who grew such crops as soy or sugarcane, which required new investment every year, quickly went out of business if their farms weren’t profitable. Ranchers, on the other hand, could endure many years of low profits without going out of business entirely.

Ranchers can “keep going and going, sometimes losing, but they rarely feel the need to change,” said Beatriz Domeniconi, executive coordinator at the Brazilian Roundtable on Sustainable Livestock, a multi-stakeholder group also working to make the cattle industry more sustainable (see Textbox 1).

Improving productivity had never been a major concern for many ranchers. Often, returns on land appreciation were greater than what ranchers made selling cattle. Braz Peres Neto, a young law school graduate whose family owned three ranches, said his family had bought the land as an investment opportunity. Peres Neto said his father “would put cattle on the land, but the main goal was land appreciation.” His family earned its primary income from a textile business, and land speculation was a way to earn a second income with little time commitment.

Cattle ranching was inexpensive, required little technical expertise, and ensured that cleared forests did not regenerate. “Cattle are the best way to make sure the place stays completely denuded,” said Chris Wille, a founder of the Rainforest Alliance. “They are constantly working eco-destruction machines.” Wille said that although most of the recently deforested land got

Textbox 1: The Brazilian Roundtable on Sustainable Livestock

The Brazilian Roundtable on Sustainable Livestock, known by its Portuguese abbreviation, GTPS (Grupo de Trabalho para Pecuária Sustentável), started as a working group in 2007, when beef industry groups began discussing the issue of sustainability. Environmental NGOs had expressed outrage when the World Bank agreed to finance the expansion and improvement of slaughterhouses in the Amazon region for Bertin, Brazil's second-largest meat processing company at the time. After Greenpeace's *Slaughtering the Amazon* report was released in 2009 and the World Bank canceled its loan to Bertin, the working group formalized as an NGO.

The GTPS included representatives of retailers, restaurants, NGOs, the Ministry of the Environment, financial institutions, industry groups, producer associations, and ranchers. "It was really difficult in the beginning to get everyone looking in the same direction," said Beatriz Domeniconi, who became executive coordinator of the organization in 2016 after previously working for the Brazilian Beef Exporters Association.

Unlike other sustainable-commodity groups like the Roundtable on Sustainable Palm Oil and the Roundtable on Responsible Soy, the GTPS did not aim to set a standard and create a certification system. "That system would not work for livestock," said Domeniconi. "Most farmers were not even complying with the forest code. . . . The number of producers [that could not meet a standard] would be huge. The idea was to be inclusive. We wanted to bring people into the system."

The GTPS focused on the creation of a handbook that would help ranchers begin to increase productivity on existing land and to comply with the forest code. "One of the most effective ways to put the forest code into practice is to have money," said Domeniconi. "It is expensive to plant trees . . . so if you have no profit from your activity, you cannot do it. Our intention is to help producers improve their productivity in areas they have already deforested, so that they don't have to clear any new area." The extra income could pay for the restoration of riparian areas, hillsides, and the *reserva legal*—the forested area whose conservation was required in accordance with the forest code.

The GTPS handbook listed potential steps that ranchers could take toward sustainability; the steps were ranked by cost-effectiveness. "Sometimes ranchers don't know where to start," Domeniconi said. With the manual, "they can choose a very simple or a very cheap technology that has a deep impact on productivity. There are several ways farmers can improve without any advisor, any technician, any other system that they need to pay for; they can do it by themselves. It's simple and a very good way to start. After doing that, they can take another step. It's a very simple concept."

In 2016, the GTPS created an indicator system that enabled ranchers to self-assess their farms for sustainability according to a number of criteria. "We are working on a self-assessment system," said Domeniconi. "It's like a pyramid. The very good guys [at the top] can be certified by other systems. Then there are some that need to improve just a little bit to get certification. But what about those other guys? They are the majority, and we need to improve them. We need to help them start to improve, not stay stuck where they are [at the bottom of the pyramid]. . . . Our idea is to support that group to improve itself and especially to become legally compliant. So we're working on helping the process to get legal—the first step. No certification is going to do that."

In 2012, the GTPS was one of the founding members of the Global Roundtable on Sustainable Beef, which supported individual-country roundtables in the development of their own guidelines and indicators for sustainability. As of 2016, just two roundtables had released indicators: the GTPS and the Canadian Roundtable for Sustainable Beef.

quickly occupied by cattle, “much of the deforestation for cattle would happen whether there was a market for beef or not.”

The structure of demand also complicated the task of creating a functional certification system. Whereas certification systems in other industries such as coffee and tea had gained popularity globally, most of the demand for certified products came from North America and Europe, where many consumers were willing to pay more for products produced sustainably. But Brazilian meat processors exported only a small amount of their beef to Europe—and none to the United States. Nearly 80% of beef was consumed domestically, and consumers in Brazil—where incomes generally allowed less leeway for discretionary spending—were unlikely to pay a significant premium for sustainable products. Consumers in Russia and the Middle East, which were major markets for Brazilian beef exports, also were unlikely to pay extra for certified meat.

In addition to a product price premium, certification had to offer other financial benefits, such as increased productivity, to ranchers who implemented the standard’s requirements. “If you have to invest or incur higher costs to be certified . . . you have to have a very strong business case: ‘If you do as we suggest, then you will be more profitable and make more money,’” said Saviani of the World Wildlife Fund.

Imaflora, which had no prior experience in working with cattle ranchers, faced a tough challenge in trying to convince ranchers that implementing SAN-mandated practices would increase productivity and profitability. Disseminating information was difficult because cattle ranches were spread all over the country, whereas crop cultivation was concentrated in specific regions. “Beef producers are very fragmented,” Saviani said. “When you have this big a number . . . it makes it very hard for certification programs because they have to reach a huge number of producers.” Moreover, cattle ranchers varied greatly in their practices. For example, the situation was far different from farming soybeans or other common crops grown by way of fairly standard methods, and the companies that bought the crops often even specified the use of certain seeds and fertilizers. “In agriculture, we have no big differences between the base producers and the top producers. They are kind of similar in terms of productivity, incomes, knowledge, and risk taking. But in livestock, they are totally different,” said Domeniconi, who had worked for industry associations in both the soy and beef industries. “The basic producers in livestock are really different from the top producers. . . . The systems are different, the pastures are different, the way they produce is different.”

With such a complex supply chain and with most ranches not meeting even the minimum legal requirements set by Brazil’s forest code, SAN faced difficult work in trying to usher the cattle industry into an era of environmental sustainability.

FRAMING A RESPONSE

Certification systems always faced a trade-off between (1) setting a high bar that aimed to achieve a significant end result but was difficult for farmers to meet and (2) setting a lower standard with a less ambitious goal but that made it easier to get more farmers on board. SAN had always opted for the former. “Our standard is positioned as a high standard: robust and rigorous, and at the top of the pyramid of sustainability. That is our identity,” said Guedes Pinto of Imaflora. He added that setting the standard lower than that in other industries would raise the risk of greenwashing, a term used for claiming that production was more environmentally friendly than it actually was. “The role of SAN standards is to push toward the highest level of sustainability,” Guedes Pinto said. “We decided not to go lower; other initiatives could deal with that.”

Whereas other organizations like the Brazilian Roundtable on Sustainable Livestock and collaborations led by environmental NGOs cast a wide net, aiming to incrementally increase productivity and environmental sustainability in the beef sector for a broad spectrum of ranchers (see Textboxes 1 and 2), SAN took a different path. The group wanted a standard that would initially target the most well-managed and technically-advanced ranches and require them not only to comply with the forest code but also to commit to higher levels of environmental and social responsibility than the law required. The new cattle standard was to be used in coordination with SAN’s existing Sustainable Agriculture Standard. That standard, created in 2005, had merged all of the organization’s standards for individual crops into a single policy that was applicable to all agricultural crops, from bananas to cocoa, to palm oil.

But because the production of cattle was markedly different from the cultivation of crops, SAN had to develop criteria specific to the cattle industry. As a member of the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance, an organization that set procedures for developing effective certification standards, SAN would submit the new standards for public consultations before implementing them. The objective of public consultations was “to not only make the standard as meaningful and practical as possible, but also to get buy in from actors all along the supply chain,” said Wille.

The next task was to recruit ranchers. SAN expected that some of the few ranches already known for sustainability and innovation would pioneer the new standard. “Certifiers often start with the easiest farms that are already selling to the most-progressive buyers,” said Wille. “They are often the ones with resources, and most importantly, the interest.”

After the first ranch joined the program, SAN and Imaflora expected the volume of certifications to grow steadily. Wille said that, in general, once a pioneer farm was on board, “neighbors start following suit,” and as the supply of certified goods grows, “the market starts asking for certified

Textbox 2. Collaboration between Multinationals and NGOs: The Novo Campo and São Félix do Xingu Projects

While SAN certification targeted the top tier of ranchers, other programs in Brazil worked with less-advanced ones. Two of those programs worked in municipalities in the Amazon region and created partnerships with the entire value chain, from rancher to meat processor, to retailer.

The Novo Campo program was launched in 2012 by the Instituto Centro de Vida (ICV), based in Alta Floresta in Mato Grosso state. Several other NGOs, including Imaflora, helped the ICV with implementation. The Novo Campo program tried to transform the way ranchers managed their farms, using the *Guidelines for Good Agricultural Practices* (known by its Portuguese acronym BPA) manual published by Embrapa, a research institute affiliated with the Ministry of Agriculture. The ICV started with a pilot project of 14 ranches, and it trained people and financed the investments necessary to implement the BPA systems on the pilot ranches. “At each of those ranches we did a module of 30 hectares of intensification with pasture reform,” said Laurent Micol, the director of ICV at the time. “And some of them were implemented at the ranch level. The results were really strong. They showed increased productivity and reduction in emissions.”

The BPA system focused on farm practices. “The BPA standard is more complete than the SAN standard in some of the cattle and pasture management issues,” Micol said. “The SAN standard is more robust for social issues, some environmental issues, and some management systems. The BPA can be a good step toward SAN certification.” The ICV used a satellite and on-site monitoring system to ensure that ranchers were complying with BPA practices and not deforesting their land. “If any deforestation happens at one of the ranches registered in the system, the system registers an alert, and if confirmed, the ranch gets excluded from the program,” Micol said. Unlike the SAN system, the Novo Campo program did not require extensive audits, and ranches did not receive formal certification.

After a successful pilot, the program was expanded in 2015. To scale up more quickly, Micol and others involved in the project created a new company that would partner with ranchers to improve management practices, and set up a collaboration with the Althelia Climate Fund, a European impact investment firm, to finance it. The idea was that the company, PECSA (Portuguese acronym for Amazon Sustainable Cattle Ranching), could pay the up-front costs of implementing the BPA system and then later profit from ranches’ increased productivity. The company began implementing the BPA system on 10,000 hectares across five ranches.

ICV partner with JBS, the world’s largest meat processor, and McDonald’s, the giant restaurant chain, on the program. In 2016, McDonald’s announced it would buy beef from Novo Campo—the first time in more than two decades that the company would be buying meat from the Amazon region. Sustainably produced meat was another step forward for McDonald’s, which had already committed to buying certified sustainable coffee and fish.

Leonardo Lima, sustainability director at Arcos Dorados (Spanish for Golden Arches), owner of the McDonald’s brand in Latin America, said the company’s decision was part of a long-term strategy. “We have more than 50 years [of history] as a company, and we’re looking for the next 50,” he said. “The only way to have raw materials in the future is if the materials are produced, harvested, and transported in a sustainable way.”

After implementing the BPA system, the ranches that were part of the Novo Campo program in late 2016 were not far from complying with the SAN standard. However, it was unlikely that ICV, PECSA and the ranchers would press ahead for SAN certification until the economic benefits of doing so were clear. “We received a visit from the Rainforest Alliance and Imaflora,” said Micol. “They said the system we have, the investments we make in the ranches, and our management practices are certifiable. Of course, we would have to make some adjustments here and there and systematize things, but they said we would not have to add significant costs to what we are already doing. But we would do that only if it added value to our product.”

Another NGO-led project that worked with ranchers, meat processors, and a multinational corporation was a partnership between The Nature Conservancy, Walmart, Marfrig, and ranchers in Pará state’s São Félix do Xingu municipality. The pilot project provided training and funding for 16 ranches, and productivity on those ranches increased by more than 50%, according to Francisco Fonseca of The Nature Conservancy. The NGO also created a monitoring and traceability system for the project to ensure participants did not deforest. The first beef from the project—labeled with a new seal, Xingu Beef—became available at Walmart stores in Brazil in August 2016.

products.” If enough top ranchers opted for certification, Guedes Pinto said, sustainable practices could spread through the entire cattle sector.

Scaling up the initiative required collaborating with organizations that had broader reach or more market clout. In other industries, in which SAN-certified products accounted for 5 to 10% of global production, multinational organizations or corporations had invested in technical assistance to help farmers implement certification. For example, in the coffee industry, a seven-year, US\$12-million United Nations Development Programme project had helped farmers convert to sustainable practices and enabled the Rainforest Alliance to market the coffee to receptive consumers in Europe, North America, Japan, Australia, and New Zealand. “That serious investment at scale . . . was really what took coffee certification to another level,” said Sabrina Vigilante of the Rainforest Alliance. “And eventually, we reached that tipping point where things were able to move on their own.”

In the tea industry, commitment and investment had come from the private sector. “We did not certify a single tea bush until an executive decision was taken within Unilever [one of the world’s largest consumer goods firms] to have all Lipton brand tea come from Rainforest Alliance–certified tea plantations,” said Vigilante. “Unilever made significant investments in technical assistance and also put some of the responsibility on its suppliers. . . . That mandate created such energy in the industry that tea producers were scrambling to get on board.”

In other industries, purchasers paid price premiums for certified products that reflected the extent of end-user demand. Although Rainforest Alliance staff could help market certified beef to international buyers, the organization had little experience in marketing to the Brazilian companies that served the country’s less-affluent consumer market. Imaflora, industry groups, and ranchers themselves would have to negotiate with Brazilian purchasers to win contracts that gave extra value for certification. Guedes Pinto said Imaflora assumed “the market would give value” and expected industry groups to drive the demand for certified beef.

GETTING DOWN TO WORK

SAN had to develop practical standards for the program and implement a rigorous process for ranches to earn and maintain certification. The group enlisted an initial rancher to pioneer the new system while it worked to build a market for environmentally sustainable beef.

Setting the standard

Because SAN had had no experience in working with cattle ranches, the organization sought help from the Tropical Agricultural Research and Higher Education Center (known by its Spanish acronym, CATIE) when it began working on the cattle standards in 2007. CATIE was based in Costa Rica,

near SAN headquarters, and had a team of sustainable ranching experts who were working on a livestock and environmental management program.

The SAN–CATIE team wrote a preliminary standard and submitted it for public consultation in August 2009. The proposed standard consisted of 49 criteria covering water conservation, waste management, cattle management, pasture management, and animal welfare. The new criteria were in addition to 92 already outlined in the 2005 Sustainable Agriculture Standard that had applied only to crops. SAN set up a website through which anyone could submit comments or suggestions on criteria for the new cattle standard, and SAN-member NGOs in Brazil, Colombia, Costa Rica, Honduras, and Nicaragua organized in-country workshops.

Imaflora worked to ensure that the perspectives of those working in Brazil were heard by the team developing the standard. “We wanted a standard that was applicable and coherent with the situation of cattle in Brazil,” said Guedes Pinto. “It had to be rigorous, but it also had to be real. We were afraid that the standard might not have a lot to do with the local reality in terms of pasture management, use of substances for cattle, and so on.”

Imaflora organized an event to discuss the preliminary standard and invited academic experts, other NGOs, cattle industry groups, and farmers that had SAN certification for other commodities. Taking into account the feedback from the workshops and the more than 2,000 online comments from 18 countries, the working group amended the standard and submitted it for a second round of consultations in March 2010. For a further 60 days, computer users could submit comments on the draft, and SAN-member NGOs held more workshops, including another in Brazil.

During that time, Imaflora conducted diagnostic audits on cattle ranches to ensure the standards were applicable and understandable to both auditors and ranchers. “It helped us a lot to understand the meaning of each criterion,” said Tharic Galuchi, Imaflora’s agriculture certification coordinator. “The auditors and the farmers were sometimes uncertain about the meanings of particular criteria, so the diagnostics were helpful in creating a common understanding.” Trial audits were also conducted in Australia, Colombia, Costa Rica, Kenya, and Nicaragua.

The final standard, approved by SAN’s board of directors in early 2010, had 36 criteria divided into five categories: cattle management, pasture management, animal welfare, reducing carbon footprint, and additional environmental requirements. To obtain certification, ranches also had to meet the newly revised agriculture standard’s 100 criteria, grouped into 10 categories: social and environmental management, ecosystem conservation, wildlife protection, water conservation, fair treatment for workers, occupational health and safety, community relations, integrated crop management, soil management, and waste management. In total, there were 22 critical criteria that certified ranches had to adhere to. In addition, the

ranches had to comply with at least 80% of all criteria and at least 50% of the criteria under each category. Ranches had to adhere to more non-critical criteria each year in order to maintain certification.

Imaflora required ranchers to “demonstrate a commitment” to comply with the forest code by writing action plans that outlined the steps they would take to do so. Full compliance with Brazil’s forest code would have been unrealistic because its strict requirements had never been enforced and the law was under revision by the legislature at the time. In 2012, under strong pressure from rural lobby groups, the Brazilian legislature weakened many parts of the forest code and granted amnesty to landowners who had illegally deforested their land prior to July 2008. The government set tiered deadlines for landowners to comply with each requirement of the new code.

In addition to the provision for legal compliance, the SAN standard required ranchers to meet several criteria that were similar to those contained in the law, such as the reforestation of areas near rivers and streams. SAN also required ranchers to prove there had been no deforestation on their ranches since 2005, and they had to compensate for the impact of any deforestation that took place after 1999—for example, by setting aside an equivalent area for conservation.

In May 2012, SAN also published a new chain-of-custody standard that would apply to intermediate players in the supply chain, such as slaughterhouses. The criteria stipulated requirements with regard to environmental responsibility, labor conditions for workers, and strict conditions for ensuring that SAN-certified commodities be traceable and never mixed with noncertified products. With the introduction of the chain-of-custody standard, SAN broadened its program to include slaughterhouses as well as ranches.

Tracking cattle

Traceability was a challenging problem because cattle bred on one ranch often moved elsewhere for raising and fattening. “We have ranchers that do full cycle, but most of them do parts,” said Guedes Pinto. “They buy cattle from anyone, and the cattle move huge distances. The main issue was: How could we set a criterion for deforestation that wouldn’t have leakage or be greenwashing?”

Guedes Pinto feared that if the standard did not demand traceability, the result would be leakage; that is, SAN could end up certifying cattle that had originated in deforested areas. On the other hand, strict traceability requirements would create problems, too. “If we were too rigorous, we would certify nobody,” he said. “But if we looked only at the last farm, where the animal stays two or three months, there would be huge leakage, and then we would be certifying something with a deforestation footprint. . . . We had to strike a balance that was not greenwashing but was compatible with what we had in Brazil.”

SAN strengthened the traceability criterion after the initial draft, which had required only first-tier traceability to track cattle from the fattening ranch to the slaughterhouse. The final standard required certified ranches to hold cattle for at least six months and to check the ranch the cattle had been purchased from for deforestation, child labor, forced labor, discrimination, involvement in criminal or illegal activities, and inhumane treatment of animals. Ranches were not required to trace cattle back to earlier stages in the supply chain, such as the breeding ranch.

The standard allowed certified ranches to have some cattle that did not meet the traceability standard, but only animals that met the requirements could be sold as SAN certified.

Finding a pioneer

From their experience in certifying other commodities, Imaflora staff expected they would find pioneer ranchers who wanted to be the first to get certified. “In our experience with pioneering SAN standards with other crops, we had those producers that wanted to be different no matter whether the market paid [premium prices] or not,” said Guedes Pinto. “They want to be recognized. It happened with coffee, with oranges, with cocoa, and with many other sectors. We supposed that some ranchers would be pioneers independent of economic incentives.”

Shortly after the cattle standard was launched in 2010, Imaflora received its first indication of interest. Fazendas São Marcelo (FSM) operated two cattle ranches in Mato Grosso state: one 6,000-hectare fattening ranch in the Cerrado and one 25,000-hectare breeding ranch in the Amazon. The two ranches together had about 12,000 hectares of pasture and 19,000 hectares of conserved forest. FSM was operated by JD Group, a French-owned company that also owned Brazil’s biggest grape producer, Fazendas Labrunier, a grape farm that had already been certified to the SAN agriculture standard. Arnaldo Eijsink, chief executive of JD Group, said that obtaining certification was part of the company’s strategy to be “a kilometer ahead of what retailers demand.”

Even though his company received no price premium for its certified grapes, Eijsink said SAN certification was valuable. “When you have the right certification, [retailers] prefer to buy from you rather than from your competitors,” he said. His company’s position as a favored seller was especially important because fruit had to be sold quickly after harvest, he added.

Eijsink said he hoped that obtaining SAN cattle certification would provide similar benefits for his beef business. “No one asked us to certify our meat, but we wanted to be in front of others,” he said. “We wanted to show to the slaughterhouses and to consumers that we were the only company in the world with Rainforest Alliance–certified meat. Then we wouldn’t have to sell the beef; they would come to buy.”

Eijsink was open about the main motivation for obtaining SAN certification. “The certification was purely to make more money on the farm,” he said. FSM had already earned certification from other organizations. The first was in 1995, when the ranch became certified for animal welfare. Eijsink said the motivation for that, too, was simple: “Cattle grow faster if they are treated better.” After implementing the requirements for certification, Eijsink found that FSM could sell more meat per animal because the meat was not damaged by cattle prodding or poor transport conditions.

FSM had other certifications as well, and had experimented with organic certification. After changing many of its processes and inputs, the ranch was certified organic in 1998 by the Instituto Biodinâmico, Brazil’s largest certification company. In 2010, however, Eijsink decided to stop producing organic beef. “It was not cost-effective,” he said. “The animals took longer to fatten, and only a small portion of the animal was sold at a higher premium.” SAN certification, on the other hand, promised greater productivity, not less. “The implementation of certification is a good machine to improve the productivity of farms,” said Imaflora’s Galuchi. “When they work with certification, they start to improve management, and then productivity increases.”

Both the pasture and animal management principles of the SAN standard required implementation of practices that would result in productivity gains, especially in the long run. For example, individually tagging cattle—a critical criterion—meant cowboys could identify poor-quality animals (such as those that took longer to fatten) and eliminate them from the herd. The pasture management principle called on ranches to use techniques that reduced degradation and ensured optimum pasture growth, which would eventually increase productivity.

“Pasture management is your first class in agronomy; it is very easy to do,” Galuchi said. “Everyone knows [how to do it], but no one does it. It costs a lot, and the ranchers don’t receive the money back for three or four years or more.” Galuchi said certification could motivate ranchers to implement pasture management techniques that would improve their output.

Because FSM had already implemented many SAN-required practices in order to comply with prior certification initiatives, the ranch did not have to make as many upfront investments as other ranches would have had to. “It was not easy to get Rainforest Alliance certification; they have 135 criteria they ask for,” said Eijsink. “But because we were already certified organic, it was not so difficult. If we had been starting from zero, it would not have been easy.”

Certifying the first ranch and processor

Despite its previous experience with certification, FSM had to make several changes in order to pass SAN’s audit process. Under the process, a

farmer could request a pre-audit evaluation wherein staff from the local SAN-member NGO would visit the farm to identify any changes needed to comply with the standard. Next, a team of approved auditors would conduct a full evaluation of the farm to determine whether it met requirements. Such audits often took several days to complete, after which the auditors prepared a report that identified criteria the farm complied with and criteria with which it did not.

If necessary, the auditors checked back to make sure the farm had introduced any necessary changes to meet minimum requirements before certification was awarded. After a farm achieved certification, another team of auditors would conduct yearly reviews; and every three years, the farm would again undergo a full certification audit. If anyone complained that the farm was not complying with the standard, SAN or its member NGOs would investigate.

In Brazil, Imaflora had six auditors on staff, one of whom was Galuchi. “The staff are very general; for example, I work with citrus and tea plantations” as well as cattle, he said. The organization also employed freelance consultants who had special skills and knowledge. Galuchi said Imaflora hired 12 to 15 consultants, 3 of whom specialized in cattle. All auditors had to go through a standardized training process and were evaluated annually on their work.

FSM’s long-standing commitment to sustainability and previous experience with other certifications helped prepare the ranch for the audit process. “We already complied with a lot of what the standard required,” said Leone Furlanetto, FSM’s ranch manager. “We had always prohibited hunting on the ranch to preserve our fauna, and we were already restoring degraded areas.” However, the preaudit evaluation indicated that the ranch did have to make several changes in order to meet the SAN standard. Furlanetto said FSM had to regulate agrochemical use, improve housing for the 33 families that lived and worked on the ranch, and keep better records about how the ranch was managed.

To pass the audits, FSM also had to pay more attention to the ranches from which it bought cattle. “We could not buy from just anybody anymore,” said Eijsink. FSM owned two ranches—one for breeding and one for fattening—but also bought animals from other ranches to fatten before slaughter; and in order to comply with the standard, FSM had to begin checking all of its suppliers against federal databases that listed ranches with deforestation violations, or that employed slave labor, or that had infringed on protected lands.

The cattle bought at the fattening stage stayed at FSM’s ranches only for three or four months so did not comply with SAN’s requirement that certified animals spend the last six months before slaughter on a SAN-certified ranch. As a result, FSM had to be able to identify which animals were certified and which were not. Furlanetto said FSM sent about 30,000

cattle for slaughter each year. About half of those cattle spent less than six months on the ranch. To ensure that the noncertified animals did not get mixed with the certified ones, each animal bought was tagged on arrival at the FSM ranch.

FSM also tracked all of the animals bred on its own ranch. “When the animal is born, within 24 hours we put a number inside each ear with a type of ink that can’t be removed,” Eijsink said. The double inking was necessary because “sometimes a crocodile will eat an ear when cattle are drinking water.” The inked number was entered into a computerized system. When the calf was weaned, the rancher tagged each animal with a traceability code that matched the original number and then sometimes branded the animal’s hide “to make it easier for the cowboys,” said Eijsink. All in all, each animal had at least two, and sometimes four, individual identifiers.

Another criterion that FSM had to implement was the reforestation of riparian areas—the areas around waterways that were particularly important to keep forested. Eijsink said Imaflora auditors told him to fence riparian areas so that cattle could not damage the forests. “It was a lot of investment, so we agreed on an action plan whereby I could do it step by step,” he said.

After making all the necessary changes and drawing up action plans to comply with other criteria, FSM gained SAN certification. To get its certified beef on the market, however, FSM needed a slaughterhouse with a SAN chain-of-custody certification. Eijsink turned to Marfrig, the meat processor that already bought FSM cattle, and asked the company to seek certification.

Eijsink organized a market for certified beef even before achieving certification. JD Group was a major supplier to French multinational supermarket chain Carrefour, and Carrefour had agreed to stock Rainforest Alliance–certified beef in its nearly 300 Brazilian stores—and to pay a premium for it. With a guaranteed market and a monetary incentive, Marfrig was willing to pay the audit costs and become SAN chain-of-custody certified.

Marfrig and most other major meat processors in Brazil already had strict quality control systems in place at their slaughterhouses. Marfrig’s slaughterhouses were federally inspected, which meant the company could sell beef throughout Brazil and on the export market. Smaller meat processors, many of which lacked comprehensive quality-control policies, were monitored by state or municipal inspectors. Federally inspected plants “have a federal agent on the ground while they are in operation,” said Fernando Sampaio, head of the Brazilian Beef Exporters Association. “At all times, you have someone there who is responsible for checking the quality of the product you’re selling for public health issues.” Sampaio said that, because they supplied national retailers and international markets, federally-inspected slaughterhouses were under more pressure to control potential labor or environmental issues. “Local slaughterhouses don’t have that pressure, and can barely assure quality control,” he said.

Marfrig's slaughterhouses were already certified as compliant with International Organization for Standardization (ISO) standards for environmental management and food safety management. Because its slaughterhouses already complied with legal requirements and ISO standards, Marfrig was well-placed to meet the labor, environmental, and health and safety requirements of the SAN standard. The new requirement was traceability, but Marfrig had its own procedures to trace every animal back to its specific supplier ranch. Marfrig was awarded SAN certification without having to make any changes to its operations.

Building a market

After FSM and Marfrig received certification, JD Group, Marfrig, and Imaflora wanted to get the certified beef on the market as soon as possible. JD Group's close ties with Marfrig and Carrefour made the process easier, and beginning in 2013, Rainforest Alliance–certified beef became available in Carrefour supermarkets in several Brazilian cities. “We launched it as a premium product in terms of quality,” said Fernando Careli, Carrefour Brazil's sustainability manager. “In the beginning, as with all launches, it was difficult . . . but demand grew fast in the following months.” Carrefour soon began offering Rainforest Alliance–certified beef at all of its stores across Brazil.

To promote the new certification, the Rainforest Alliance struck an agreement with Italian handbag company Gucci to create a limited-edition handbag made of leather from FSM's certified cattle. The product was launched during Paris Fashion Week in March 2013. After the quick successes with Carrefour and Gucci, however, the Rainforest Alliance found it difficult to expand the market for certified cattle products. The biggest barrier to expansion was that the only certified cattle available were from FSM, and the supply was too small to meet the requirements of the large companies that had committed to buying other Rainforest Alliance-certified products. Vigilante said that was the same problem that had arisen during efforts to expand the market for other certified commodities. “The response is always, ‘Come back to us when the supply is there,’” she said. “So it's a chicken-and-egg equation. We dealt with the same thing when we were beginning to work in the coffee realm. . . . It's not unusual that in the beginning things are slow to start up, but it's frustrating.”

The uncertain economic benefits of certification made it more difficult for Imaflora to persuade more ranchers to become certified. “The question from the industry and the farmers was always the same,” said Guedes Pinto. “‘Are we going to have incentives? Are we going to be rewarded? Is anybody going to pay more? Is the market going to recognize and give value to those who are certified?’” Imaflora could not promise ranchers a price premium for certified beef, and the productivity benefits of certification were mostly long-term and often difficult for many ranchers to understand.

“Certification has a very clear economic cost [in terms of audit fees]. It’s not that expensive, but it has to create a clear cash inflow to offset the costs,” said Peres Neto, who considered seeking SAN certification after FSM’s Eijnsink recommended it to him at a cattle genetics workshop. But Peres Neto said he could not justify certification for his family’s three ranches, which together had 3,500 hectares of pasture. “Marfrig would not pay any premium on our meat for the certification,” he said. “They were open to it, but they said they could not consistently sell the meat for a premium on the Brazilian or export market. If you have neither premium prices nor huge volumes to justify [certification], then it doesn’t make sense. In the case of big producers like Fazendas São Marcelo, which has a way bigger area than we do, I think it works for them in terms of process improvement. You have to formalize a lot of things, and it makes more sense at a larger scale. The problem is that very few ranches in the country work as well and are as large as São Marcelo.”

Imaflora ran into similar problems in trying to persuade other industry players like JBS and Minerva to buy certified cattle or to persuade their suppliers to try certification. No one was sure whether restaurants and retailers would pay for sustainability. Saviani of the World Wildlife Fund said Brazil’s consumers would usually buy the cheapest beef and would pay more only if the beef was of higher quality. Sustainability was rarely a consideration. “Most people just want to be able to eat,” he said. “They want to eat something good and something cheap. Without that consumer pressure, it’s really hard to get certification moving.”

Vigilante said patience and perseverance were necessary to recruit major retailers to make long-term commitments to sustainable beef. The Rainforest Alliance had approached several large European companies, but none had made major commitments to buying certified beef. “Everyone we spoke to was interested in what we were doing, but they were slow to take action,” she said.

Imaflora had to wait for the market tide to turn in favor of beef certification. “Our strategy was that the industry would make it happen; it was not going to be a bottom-up process whereby farmers looked for us,” Guedes Pinto said. “In coffee, cocoa, and tea, everything changed when Kraft, Mars, Nestlé, and Unilever decided to ask their suppliers to become certified. It came from the top. We thought the same would happen with beef.”

Recruiting ranchers

Because of uncertainty about the outlook for the nascent, certified-beef market, FSM remained the only SAN-certified cattle ranch in Brazil for several years. Without a clear profit incentive, ranchers were reluctant to spend the time and money needed to meet the SAN standard, which often involved overhauling their entire operations, including maintaining close control of their cattle and keeping detailed records—activities that were

foreign to many who operated their ranches more on the basis of family and social relationships than business principles. “Cattle farms were managed in a very informal way, and the standard asks for formal, robust management of the property,” said Guedes Pinto.

Because their financial management was typically lax, ranchers were sometimes unable to determine the bottom-line impact of a decision to implement certification. Without hard evidence of the advantages, they preferred to stay with the status quo. “The majority of ranchers—especially the smaller ones—don’t make such calculations; they don’t even understand their costs,” said Pedro Burnier from NGO Amigos da Terra.

In addition, the certification process entailed other business-related policies that were foreign to the average rancher. “The standard required compliance with health and safety laws, overtime pay, formal hiring practices, worker housing, and potable water,” said Guedes Pinto. “Those issues were not on the agenda for cattle farmers.”

Although Imaflora was flexible in pressing ranchers to invest in new buildings and procedures, the costs of assembling the necessary infrastructure discouraged many ranchers. The SAN standard called for high quality corrals, separate storage facilities for agrochemicals, veterinarian supplies, and fuel, and high-quality fences for managing pastures. Imaflora approved ranches that lacked some of the required infrastructure, but the owners still had to meet certain minimum standards and outline a plan to comply with the other infrastructure requirements.

In 2015, more ranchers began working toward certification, but they were mostly enterprises that already had advanced infrastructure and access to niche markets. For example, the second ranch owner to participate in the program already had a guaranteed market for certified beef—at high-end restaurants in Brazil. Another certified ranch was owned by a Dutch company linked to Zandbergen, one of the biggest beef importers in Europe. In October of that year, Zandbergen introduced a new premium product, a Rainforest Alliance–certified hamburger, made with certified beef from Brazil.

Andrade, who was the fourth Brazilian rancher to obtain certification, said he found out about the SAN program after searching online for “sustainable beef certification.” In the absence of a general market for certified beef, Andrade created his own high-end brand, Gran Beef, and forged partnerships with two gourmet retailers to stock his product. Andrade’s 1,200-hectare ranch, Fazenda do Bugre, was less technically advanced than other ranches that had earned certification, but it had more conserved forest.

Galuchi said one commonality among the early adopters was that they had a “technical person who can make decisions, understands the standard, and is willing to implement it.” At Fazenda do Bugre, that person was

Andrade. “He’s almost an environmental campaigner,” said Galuchi. “He wants to create a different kind of cattle production.”

Andrade said he liked the dual goal of improving both productivity and environmental sustainability simultaneously. “On one side, we get more money with the farm and make it generate more benefits for us, and on the other side, we’re doing something for the planet and for future generations,” he said. “So I think it’s perfect: you get more money and you preserve the planet.”

OVERCOMING OBSTACLES

Accurate tracking of individual animals was a crucial element in the effort to ease the environmental impact of raising cattle in Brazil. Even though improved practices on ranches that sold cattle directly to slaughterhouses was a step in the right direction, the supply chain could never become sustainable unless all of the earlier links in the chain also cooperated. The situation remained unresolved in late 2016 for several reasons.

Two government tracing mechanisms that were in place to reduce the spread of mad cow, hoof-and-mouth, and other diseases offered the possibility of help for the tracking effort. The first, called SISBOV (Brazilian System of Identification and Certification of Cattle and Buffalo), tracked individual animals and recorded the information in a national database. The second, the Animal Transport Guide, known as GTA, was a document required to transport cattle between ranches and from ranches to slaughterhouses. It included details on the animals’ origin and destination and on the number of cattle being transported.

SISBOV was limited in scope and used by few ranchers. The reporting system was compulsory only for cattle destined for the European market, and it tracked animals only during their last 90 days before slaughter. Ranchers had to pay for tracking devices, and ranchers that did not export meat to Europe had no incentive to use the system.

Although SISBOV might be expanded to broaden the scope of traceability, there was little interest in doing so. Amigos da Terra’s Burnier said individual tracking was not viable on a large scale because of the increased costs to ranchers: “Who’s going to pay the bill? In the end, ranchers would have to pay for animal identification, and they’re not willing to take on the extra costs.”

The GTA system, which was compulsory for all transported cattle, seemed to be a better solution to the traceability issue. “If we had access to the GTA database, then we would be able to see where all the animals come from,” Burnier said. But despite pressure from NGOs for more transparency in the cattle supply chain, the state agencies responsible for GTA documents did not usually allow public access to the information. Most ranchers preferred that the documents remained private. “You have a lot of resistance

from ranchers who have privacy concerns,” said Sampaio of the beef exporters association. Ranchers did not want everyone to be able to know how many cattle they had and how many were being moved, Sampaio said. He also noted that using the GTA for a purpose other than what it was created for could have unintended consequences. “The GTA was originally conceived for animal health control,” Sampaio said. “To associate environmental requirements with the GTA would change its function and could have undesirable effects on animal health control.”

A new rural environmental registry (known by its Portuguese acronym, CAR, for *Cadastro Ambiental Rural*) had the potential to make the GTA an even more powerful tool. The CAR, a requirement in Brazil’s forest code, obligated all farmers to document the boundaries of their properties and the *reserva legal*—the forested area they were required to conserve in accordance with the forest code. In combination with CAR data, the GTA system could help trace cattle that originated on deforested ranches; but in late 2016, the idea remained only a concept because ranchers had until 2017 to register their properties in the CAR system, and most state government agencies kept CAR information private, as they did with GTA documents.

Despite the lack of progress in improving traceability at an industrywide level, SAN decided in 2016 to increase the level of traceability required for certification in order to reduce the risk of deforestation in the certified cattle supply chain. The revised SAN standard, which demanded full traceability of cattle from birth to sale, was to become effective in July 2017, and Guedes Pinto said the tightened traceability requirement “may narrow the number of farms that are certifiable.” Until the tracing of cattle became easier and more widespread, expanding SAN certification in the cattle industry remained a significant challenge.

ASSESSING RESULTS

Although SAN achieved quick success in getting Rainforest Alliance–labeled beef from the world’s first certified sustainable cattle ranch to market, the program stalled because the product failed to excite consumers’ appetites. As of late 2016, the initiative had made little progress toward improving the cattle supply chains it had hoped to transform. Just five ranches, constituting about 16,000 hectares of Brazil’s nearly 200 million hectares of pastureland, had achieved certification. “We failed at increasing scale fast; it took five years to get the second certificate,” said Guedes Pinto. “But since certifying Fazendas São Marcelo, we have had the beef with the frog [seal] at Carrefour in many cities across the country. . . . It was only small volumes, but the beef was there; the choice for consumers was there.” Outside Brazil, other SAN-member NGOs certified one ranch in Guatemala (which later dropped out of the program) and one dairy farm in Costa Rica.

Despite the sluggish growth, Guedes Pinto remained optimistic that SAN certification might gradually reshape the business of cattle ranching and beef production in Brazil. “We don’t need to certify 100%, but we need to certify a reasonable percentage of the sector to show it is possible—until that backbone influences the whole sector,” he said. “In Brazil, less than 10% of coffee is certified, and because of that, sustainability is an issue for every coffee grower in Brazil. For cattle, we need to hit a minimum for it to have an influence on the whole sector.”

SAN’s original cattle standard was generally seen as comprehensive, but one weakness was that it did not require full traceability of cattle from birth. Without full traceability, it was impossible to verify whether—during an earlier phase in the cattle production cycle—SAN-certified cattle had been on ranches linked to deforestation. Although SAN planned to require full traceability beginning in mid-2017, it was unclear whether ranchers would be willing or able to meet the requirement.

Another uncertain factor was Brazil’s approach to its forest code, which was one incentive for ranchers to participate in the SAN program. The five Brazilian ranches that had achieved certification by September 2016 were ahead of most other ranches in complying with the forest code. Whereas other landowners in Brazil waited for the forest code to become enforced, certified ranches had to implement plans to conserve their forested land and protect and reforest waterways regardless of when, or whether, the law was implemented. But because the government had extended the deadline for CAR registration—an important part of the law—many ranchers were skeptical about whether the forest code would ever be fully implemented. The original CAR deadline of May 2015 got delayed twice, to May 2017.

A second forest code requirement—the submission of plans for the restoration of hills, riparian areas, and the *reserva legal*—would likely take even longer than CAR registration because of the greater costs involved.

Future success of the SAN certification program for cattle ranches would depend on ranchers’ perceptions of the benefits of certification and the size of the market for certified beef. The first ranch to obtain certification, FSM, provided a strong economic case for doing so. “I was the only one in the world that had Rainforest Alliance certification, so all of the [slaughterhouses] wanted to buy from me in order to show on their websites that they had [certified] meat,” said Eijsink. “I don’t need to go the market and sell. The market comes to me to buy. . . . Life is easier.” Andrade, on the other hand, was still waiting to see an economic return on the investments he had made in certification. “I am just beginning,” he said. “But I really believe it is going to be very profitable.”

As part of its pasture management plan (a SAN cattle standard criterion), FSM began restoring degraded pastures and piloted new techniques to improve productivity. The ranch began a pilot pasture rotation project and divided one of its 50-hectare pastures into 10 pieces. Cattle were

moved to a new section of the pasture every three days to allow the other sections of the pasture to regenerate.

After establishing pilot pasture rotations, Eijsink said he found that “you can have more animals per hectare than normal,” which increased the ranch’s profitability. In 2016, FSM had implemented pasture rotation on 10% of its pastures and had plans to increase pasture rotations annually. Furlanetto said that because of the new systems the ranch had implemented, FSM had “more or less doubled its productivity in the past few years.”

A guaranteed premium price would encourage more ranchers to join the program, but ranchers also might be swayed if SAN could prove greater profitability as a result of implementing the standard’s criteria. “The first question a rancher asks is, ‘What am I going to get if I get the certification?’” said Burnier. “Sometimes you can’t get a premium price. But the major benefit for them is that when they follow the certification checklist, they will have a much-better-managed farm and better productivity.”

Successful models helped make the case for adopting the standards. Most ranchers “don’t want to be the first ones, but if they see a good example, they will follow that,” said Burnier. “They don’t like to see their neighbor making more money than they do.”

The missing link in the chain was consumer demand, and opinions differed on whether consumers would buy more-sustainable beef in the near future. “You need to have the supply chain asking for it, and that was never the case in Brazil,” said the World Wildlife Fund’s Saviani. “Most consumers are concerned about price, nutritional value, food safety, and taste. That’s it. Most consumers don’t make the connection between food and the environment—especially in developing countries.”

Andrade, whose ranch was certified in 2016, said he thought it was only a matter of time before the market for sustainable beef took off. “I think the world is looking for products with seals. People want to know how things are being produced and where they are being produced,” he said. “I think the ranchers that adapt first will reap the benefits.”

REFLECTIONS

Part of the reason that the Sustainable Agriculture Network (SAN) cattle standard failed to capture more of the beef market quickly was the organization’s decision to adopt a stringent standard. Voluntary certification systems faced a trade-off between setting a high bar that made compliance difficult for most and setting a low bar that made certification more achievable.

Imaflora’s Luis Fernando Guedes Pinto said that setting a high standard requiring ranchers to meet many environmental and social criteria was part of the organization’s strategy. “The SAN standard is comprehensive . . . and that’s why [uptake] is small: because it deals with all of these issues at once,” he said. SAN cattle certification was achievable only for well-managed

ranches, and the organization relied on other initiatives for working with lower-capacity ranchers. The Brazilian Roundtable on Sustainable Livestock, for example, focused on a smaller number of criteria and was open to all ranchers.

Carlos Saviani of the World Wildlife Fund said certification systems “set the gold standard. They show that producing food in a more sustainable way is possible.” But he added that other initiatives were always necessary to transform an entire industry. “Certification schemes have been rewarding companies that were already doing great things, more than really changing the bottom line,” he said. “Most of the problems in several different commodities are not coming from the top performers, but from the bottom half. You have a lot of producers that are underperforming and have high environmental impacts . . . probably for those producers we need to have a different solution.”

Reaching small producers and underperformers remained an unsolved problem in late 2016. Although SAN had a group standard that could make certification a viable option for smaller ranches that applied in groups, few such groups existed in Brazil. Imaflora had begun working with a group of smallholders in Uruguay with the goal of certifying their ranches, but from an initial group of 85, the number still pursuing certification had dropped to 25. “It is very hard to work with smallholders,” said Tharic Galuchi of Imaflora. “Smallholders have the same challenges, but the more people, the more complexity. It is much easier to manage one owner than 85 owners. Also, smallholders often don’t have money to invest.”

Most ranchers, especially smallholders, did not have access to the credit necessary to introduce sustainable practices on their ranches. In 2010, the government launched one credit program, the Low Carbon Agriculture Program, which was supposed to offer low-interest loans for farmers that committed to implementation of production techniques that lowered greenhouse gas emissions. But for many farmers, interest rates on the loans were still too high, and most ranchers were unable or unwilling to go through the bureaucratic process required to obtain credit through the program.

Some observers said the government ought to step in with policies that would make the cattle industry more sustainable—and certification more feasible. Potential public policy solutions included making the GTA and CAR information publicly available in order to increase traceability, offering technical assistance to small and medium-size ranchers who could not afford agribusiness consultants, and adhering to the forest code’s stipulated deadlines.

By twice extending the deadline for CAR registration, the government sent signals to ranchers that implementation of the forest code would take longer than originally expected and that ranchers might not have to restore forests—at least in the short term.

The future of the program in 2016 appeared to hinge on the perceived relative value of short-term economic considerations, long-term environmental demands, and the fickle appetites of consumers in Brazil and around the world. But despite the challenges associated with improving cattle supply chains and implementing sustainable certification in Brazil, observers agreed that the entire sector recognized a pressing need and had begun to inch toward improved sustainability, a topic that had been absent from the industry's agenda until 2009. "In the past five years, the beef sector has started to get more conscious about sustainability," said Saviani. "It's not everywhere; it's still restricted to the highest segment of the beef industry. But it's moving forward. The good news is that more and more companies and more and more people are engaging with the idea of working with sustainability . . . [but] we have to move faster."

An important question that remained was whether growing demand for beef might outpace Brazil's shift to more-sustainable production. As more and more consumers entered the middle class, especially in emerging economies like Brazil, beef often became a larger part of their diets. Adriana Charoux of Greenpeace said reducing beef consumption was a crucial complementary goal. "Can we intensify forever?" she asked. "We need to think about how much we can produce in a sustainable way. I do not believe it is really possible to have sustainable livestock at the level of production necessary to meet the growing domestic and international demands for Brazilian beef. We have to ask consumers to reduce beef consumption."

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