Cooperativism and Agroforestry in the Eastern Amazon: The Case of Tomé-Açu
Jessica Piekielek

Latin American Perspectives 2010 37: 12
DOI: 10.1177/0094582X10382097

The online version of this article can be found at:
http://lap.sagepub.com/content/37/6/12

Published by:
SAGE
http://www.sagepublications.com

On behalf of:
Latin American Perspectives, Inc.

Additional services and information for Latin American Perspectives can be found at:

Email Alerts: http://lap.sagepub.com/cgi/alerts
Subscriptions: http://lap.sagepub.com/subscriptions
Reprints: http://www.sagepub.com/journalsReprints.nav
Permissions: http://www.sagepub.com/journalsPermissions.nav
Citations: http://lap.sagepub.com/content/37/6/12.refs.html
Cooperativism and Agroforestry in the Eastern Amazon

The Case of Tomé-Açu

by

Jessica Piekielek

An agricultural cooperative in the eastern Amazon region composed primarily of Japanese immigrants and their descendants practices agroforestry with black pepper, cacao, and tropical fruits as the principal crops. Its success is largely contingent upon institutional flexibility and long-term economic and environmental sustainability. It has developed strategies for responding to environmental and economic changes and constraints and has discovered important principles of adaptation—diversification, innovation, and shared decision making. Ethnic identity has also played an important role by helping unite members and by linking the cooperative to Japanese markets and financial capital. The next test of the cooperative’s ingenuity and flexibility may be whether its model can be extended to non-Japanese-Brazilian small producers.

Keywords: Cooperatives, Sustainable development, Agroforestry, Japanese-Brazilians

Agricultural cooperatives in Latin America have often been formed as a way of addressing market inequalities and providing services and supports not offered to small farmers by larger economic institutions or the state (Vasquéz-Léon, this issue). Scholars such as Gertler (2006) and Glasbergen (2000) have suggested that cooperatives may also be well positioned to pursue sustainability agendas, a path of critical importance in places like the Amazon region. In tropical northeastern Brazil, a small community of Japanese-Brazilian farmers runs an agricultural cooperative, the Cooperativa Agrícola Mista de Tomé-Açu (Tomé-Açu Mixed Agricultural Cooperative—CAMTA), that exemplifies the possibilities for cooperatives as institutions for sustainable development. More than 70 years old, the cooperative and the farming community have weathered war, economic booms and busts, and ecological changes. In the process, producers have developed strategies to buffer themselves from the negative impacts of change, using the advantages provided by cooperative association, and have drawn on a variety of forms of capital, created or accessed

Jessica Piekielek is a postdoctoral fellow in environmental anthropology in the Department of Sociology and Anthropology at Millsaps College. She previously served as a research assistant for the Bureau of Applied Research in Anthropology at the University of Arizona. This study is a part of a USAID-funded project entitled “Development and Expansion of Economic Assistance Programs That Fully Utilize Cooperatives or Credit Unions” and conducted in collaboration with Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance. The author thanks CAMTA members for their generous hospitality and for sharing their stories and expertise. In addition to the collaborative efforts in conducting fieldwork, Olga Lucia Cuellar and Tim Finan contributed to this article through conversations in the field. Marcela Vásquez-León, Richard Stahler-Sholk, and Jan Rus provided helpful comments.
through their cooperative, to develop a model for sustainable farming in the Amazon region.

Identifying examples of sustainable development is difficult and the subject of much debate. Nonetheless, sustainability continues to be pursued as a topic of research and an end goal. The 1987 Brundtland Report offered a deceptively simple definition: “to meet the needs and aspirations of the present without compromising the ability to meet those of the future” (World Commission on Environment and Development, 1987). Typically, sustainability is defined by a three-part model that balances economic, environmental, and social factors, while Stone (2003) suggests that sustainability is defined in action—in the flexibility, innovation, and adaptation of social and environmental systems over the long term.

What might cooperatives, in particular, offer to the pursuit of sustainability? Gertler (2006) argues that cooperatives, drawing on their historic and current strengths, have a number of things to contribute, including the capacity to share information, to respond to interests other than that of the bottom line, and to plan for the long term. In addition, although they are flexible organizations, they are often firmly rooted in specific locations and groups of people, thus opening the possibility that they might be held accountable for their impacts on those environments and communities. Many of these contributions might be classed as different kinds of capital, especially social capital. Social capital, as defined by Bourdieu (1986), is a set of resources collectively held by a social network or group that is available to the group and to individual members through their association. Social capital can be transformed into economic capital and vice versa, though not always easily or seamlessly. With regard to sustainable development, the concept of social capital is useful in several respects. Lehtonen (2004) suggests that it allows for better incorporation of social issues into understandings of sustainability by highlighting the links between social and economic processes. Gertler (2006: 3) says that cooperatives are “learning organizations with the capacity to generate and share knowledge” that is specific to members’ needs and environments. This suggests that cooperatives can support the production of local ecological knowledge that can direct sustainable development. As institutions that create or congeal social networks, they can also effectively disseminate local ecological knowledge as social capital and provide a framework for collective action. Further, cooperatives’ economic capital is more likely to be “patient,” or directed at long-term goals, because it is driven by members’ interests and their long-term social investments in their cooperative (Gertler, 2006). “Patient” capital can also more easily be put toward long-term, sustainable development.

The success of agricultural cooperatives in catapulting Japanese immigrants into the Brazilian landholding, educated middle class is widely recognized. Though a cooperative tradition existed in Japan, Japanese immigrants developed agricultural cooperatives as a means of adapting to a new social and economic environment. Even as these cooperatives are viewed as unique examples of Japanese-Brazilians’ role in Brazil’s agricultural economy, their success has promoted the notion that cooperatives can play an important role in rural development and in work toward narrowing Brazil’s enormous income gap.
More recently, the success of Japanese-Brazilian farmers in Tomé-Açu has generated international attention as a model for sustainable agriculture in Brazil’s tropical forests. CAMTA has played a critical part in this development. Its supportive role parallels many of the possibilities outlined by Gertler and described above, but unique factors in its history, especially related to ethnicity and access to external capital sources, suggest that any replication of this cooperative’s success in promoting sustainable development will require additional flexibility and adaptation.

CAMTA is a Japanese-Brazilian agricultural cooperative located in the eastern Amazonian region that markets black pepper, cocoa beans, and tropical fruits internationally. It has received international recognition for its support of the development of a sustainable form of agroforestry among its members. Following a brief description of its location, this article describes its history from its beginnings in the 1930s to the present. This historical account underscores the different periods of crisis and the ways in which the cooperative has adapted to economic and environmental dilemmas. The second half of the article provides an analysis of the key factors that have contributed to the cooperative’s success. These include the development of knowledge and production systems specific to the Amazonian environment, external and internal capital investment, ethnic identity as a source of unity, and democratic leadership. This article is based on fieldwork that I conducted with Olga Cuellar and Tim Finan during the summer of 2005 for the Bureau of Applied Research in Anthropology at the University of Arizona.

THE STUDY SITE

In a semiremote area of tropical forest in the northern state of Pará, Brazil, roughly 250 kilometers (five hours by car) from the state capital of Belém, sits an unusual historic settlement of Japanese immigrants, Tomé-Açu. The area, like much of the Amazon basin, is hot and humid, with an average annual temperature of 26.5 degrees Celsius (80 degrees Fahrenheit) and 2,663 mm (105 inches) of rain annually, most of which falls between December and May. The River Acará runs along the edge of the town of Tomé-Açu as it flows north to Belém, where it empties into the Atlantic Ocean. Most of the lands in the area are dry lands that are not subject to periodic flooding. Soils in the area are a mix of oxisols and ultisols (Moran et al., 2000)—acidic clay soils with few major nutrients.

Farming has been the backbone of the economy of Tomé-Açu since it was settled by Japanese immigrants. Black pepper, cacao, and passion fruit are key cash crops, sold both on the domestic market and in Europe, Japan, and the United States. The logging industry boomed in the 1970s and 1980s, but while wealthy, logging families and sawmills are still prominent on the social and ecological landscape, timber extraction has since declined. In 2001 the município of Tomé-Açu had a population of 47,404; most of the residents are emigrants from other regions in northeastern Brazil who began arriving in the 1960s. According to the 2001 census, the per capita gross internal product of the município was 3,462 reais (roughly US$1,700). Until the 1970s, transport to the area was limited to riverboats and light aircraft.
CAMTA’S HISTORY

The history of CAMTA reveals a community and a cooperative in constant motion as Japanese immigrants to Tomé-Açu struggled to adapt to a new tropical environment, engage with a fluctuating global economy, and respond to Brazilian state policies. Japanese-Brazilian producers and the cooperative continually initiated “adaptive renewal cycles” (Berkes and Folke, 2002) as they acquired more information and experience and as the ecological, political, and economic contexts changed.

JAPANESE MIGRATION TO THE AMAZON

The first wave of Japanese immigrants to Tomé-Açu arrived in 1929, sponsored by the Companhia Nipônica de Plantações do Brasil (Japanese Plantation Company of Brazil), a Japanese firm that provided immigration services for Japanese migrants and invested in Japanese immigrant communities once settled in Brazil. Japanese immigration to Tomé-Açu was part of a larger pattern of out-migration from Japan to Brazil prompted by population growth in Japan and promoted by Brazilian plans to colonize the country’s interior. The Companhia Nipônica received a land grant from the state of Pará as an incentive to bring settlers and development to the state’s largely unpopulated and remote Amazon interior. Over the course of a decade, the company sponsored and settled 252 households in Tomé-Açu. Immigrant families settled on 25-hectare plots for which they paid the Companhia Nipônica over the course of several years. The Companhia Nipônica proposed cacao, native to the region’s riverbanks, as the cash crop of choice for their new settlement. Immigrant families also cultivated rice, soy, and vegetables for subsistence and, later, for sale. Soon after settlement, Tomé-Açu farmers formed a cooperative to facilitate the marketing of their produce to residents of Belém, which, though it was the closest major market, was too far for members to reach without organizing for transportation and sales collectively.

Immigrant families in Tomé-Açu faced numerous difficulties in the first two decades of settlement. The initial cacao plantings failed as a result of low nutrients in the upland soils and lack of shade (Yamada, 1999: 207). Farmers were very isolated (Tomé-Açu was accessible only by boat) and found little demand for fresh vegetables in Belém. A series of malaria epidemics battered the area. Though several waves of Japanese immigrated to Tomé-Açu between 1929 and 1938, households fled almost as quickly as they arrived, relocating to Belém or the state of São Paulo or returning to Japan. By 1942 only 49 immigrant households remained. With Brazil’s entry into World War II, the Brazilian authorities designated Tomé-Açu as an internment site for enemy aliens in Pará. The Brazilian government expropriated the Companhia Nipônica, as well as individual properties of Japanese immigrants, and denied the immigrants civil rights. Despite the extremely difficult conditions, some relocated Japanese immigrants elected to stay in Tomé-Açu.

BLACK PEPPER’S BOOM-AND-BUST CYCLES

After World War II, Japanese immigrant farmers who remained in the region discovered the viability of black pepper as an alternative cash crop to
cacao. First introduced in the 1930s, by the late 1940s black pepper was being successfully cultivated for commercial production. Both cacao and black pepper had originally been introduced by the Companhia Nipônica. Though not native to the Amazon region, black pepper grows well in hot, humid climates with little seasonal change and can tolerate a range of soil types. Further, requirements for processing and transport of pepper are forgiving. The drying necessary to process black pepper is low-tech and requires minimal labor, and, once dried, pepper stores and transports easily. To facilitate the sale of black pepper, farmers established the Cooperativa Agrícola Mista de Tomé-Açu in 1949, following the model earlier established to market vegetables to Belém residents. Younger residents who had lived in Belém before forced relocation and were proficient in Portuguese initiated the creation of the cooperative (Yamada, 1999: 228).

After roughly 25 years of hardship, Tomé-Açu farmers struck “black gold.” The 1950s was a decade of tremendous prosperity in Tomé-Açu, still remembered by producers who recount that a farmer could sell a ton of pepper and afford a truck imported from the United States. The cooperative’s leaders lent their private savings to members to further pepper production (Yamada, 1999: 230). The apex of the “black gold” period was probably 1956. In that year, CAMTA’s 103 members together produced 1,200 tons of black pepper, which the cooperative sold at an average price of Cr$150 or roughly US$4 per kilo (Yamada, 1999: 255, 259); according to this rough conversion to U.S. dollars, the cooperative grossed US$4,800,000 or about US$46,600 per member. The first to cultivate black pepper in the Americas, CAMTA contributed 5 percent of the total global pepper production in 1960 (Staniford, 1973: 52). It sold its pepper not only domestically but also internationally, especially to the United States and Europe.

The high international price of pepper and the success of the crop in the Amazon climate prompted major increases in cultivation. Between 1947 and 1957, the amount of pepper cultivated by a CAMTA member, on average, rose from roughly one-third ton to 14.5 tons a year (Staniford, 1973: 52). Increases in pepper production required labor; CAMTA members and the cooperative itself sponsored subsequent waves of Japanese immigrants, and members also contracted wage laborers from other parts of the state. Newer waves of Japanese immigrants established their own farms, purchased with money earned as day laborers in the pepper fields, and eventually many were folded into CAMTA’s membership.

Japanese farmers in the 1950s and 1960s relied on CAMTA not only to warehouse and market their products but also to provide basic services. Large profits from the sale of pepper in the domestic and world markets allowed the cooperative to invest in community development, filling the void created by the expropriation of the Companhia Nipônica and left open by the Brazilian state. The cooperative established elementary schools, administered the first hospital, organized members to create and maintain roads, and operated an agricultural supplies store, a repair shop, and a gas station, among other things. Members depended extensively on the cooperative as a liaison with the Brazilian government, produce exporters, and banks. For example, the cooperative provided translation services to help members fill out bank loan applications and government forms. It also sponsored cultural events like baseball games.
and festivals. In many ways, the cooperative became synonymous with the Japanese-Brazilian immigrant community.

Black pepper was a boon for CAMTA, but it was not without its pitfalls. Unprecedented wealth coupled with limited financial and marketing experience left CAMTA and its individual members vulnerable. CAMTA’s debt history began in the 1950s, when the cooperative borrowed US$1.5 million over the course of the decade, capitalizing on its position as a principal exporter. After an unanticipated drop in domestic pepper prices in 1956 and accusations of poor cooperative management, a new, younger management replaced older cooperative leaders. Many farmers elected to grow only pepper, given its high profit. But international prices began to drop, reaching lows by the early 1960s, and the income to which CAMTA and its members had become accustomed dropped precipitously. Then, in the mid-1960s, the region witnessed its first outbreak of *Fusarium solani*, a fungus that affects the roots of pepper. Whole fields of pepper could be wiped out by the disease; one experimental station lost 10,000 pepper vines on a 26-hectare plot in 1963 (Yamada, 1999: 286). The dangers of monoculture in the context of global market fluctuations and environmental vulnerability began to emerge.

After several decades of experience, CAMTA farmers were well aware of cyclical trends in the pepper market, with international prices rising and falling in cycles of roughly a decade. In the early 1980s, the price of pepper fell again. Farmers had begun experimenting with alternative cash crops, but they still relied heavily on pepper. Added to the problems of mounting debt and repeated *Fusarium* outbreaks, the drop in pepper prices precipitated a crisis within CAMTA. Most of the cooperative’s assets were liquidated to repay loans, and the remaining debt was shouldered by members and directors. The cooperative extracted payment from members from the produce they sold through the cooperative to pay 80 percent of the debt, with payments based on total sales to the cooperative. (Some larger producers balked at what they perceived to be an uneven distribution of the debt burden.) The board of directors and fiscal council assumed the remaining 20 percent. Debt burdens and low pepper prices forced some families to sell their farms and move to urban areas in search of other employment. About a third of CAMTA’s members withdrew, many because they had sold their farms but some to express their dissatisfaction with the leadership’s management of its debt and repayment (Yamada, 1999: 310).

**DIVERSIFICATION FOR SUSTAINABILITY**

Since the establishment of Tomé-Açu, producers had experimented with cultivating a variety of crops for commercial purposes, eventually settling on pepper for its value and productivity in a tropical environment. But the volatility of the price of pepper, coupled with a series of *Fusarium* outbreaks, convinced producers of the need to begin experimenting again with cultivation of a range of commercial crops. To address growing concern over the dangers of monoculture production, in the 1960s cooperative leaders and members charged their agronomist with collecting a variety of crops that might prosper in the tropical environment. By the 1970s, the search for alternatives to pepper
was in full swing. Members experimented with products on their farms, hosted experimental plots, and shared results with other members through the cooperative. Producers expanded cultivation to include cacao, passion fruit, melon, and papaya. Farmers’ experiments led to the development of an agroforestry model. CAMTA’s efforts to diversify were complemented by other initiatives in the community. Japanese producers, with assistance from the Japanese International Cooperation Agency (JICA, then an agency of the Japanese government), established a fruit pulp factory in 1980. The Associação de Fomento de Tomé-Açu (Tomé-Açu Development Association—ASFATA) operated the factory as a cooperative, and its membership overlapped substantially with CAMTA’s member base.

After the crisis of the early 1980s, JICA offered CAMTA members debt refinancing and production loans predicated on the replacement of the cooperative’s administration. With additional funds and new leaders, CAMTA set about recovering financial stability and its rapport with producers. Financial stability allowed leaders to strengthen the cooperative’s production diversification strategy and stress the importance of diversifying livelihoods as a means to both economic and environmental sustainability. In 1991 CAMTA purchased the fruit pulp factory from ASFATA, which had closed it in 1988 after a series of problems related to production and marketing. With the assistance of JICA and the Fondo Nacional de Desenvolvimento (a Brazilian development agency), the cooperative also invested in a larger freezer storage unit and began marketing tropical fruit juices to Brazilian supermarkets.

In addition to diversifying production, Japanese-Brazilian households also began to diversify their income sources. An expanding economy in Japan beckoned Japanese immigrants and their descendants to fill an increasing need for labor. In 1990 Japan reformed its immigration laws to allow Japanese-descended citizens of other countries to work legally for three years in Japan. Many Japanese-Brazilian families opted to send a member to Japan, where the average annual salary was eight times that of Brazil (Nishikawa, 1992: 197). Dekassegui, as Japanese-Brazilians working in Japan are known, tend to work less desirable jobs in the service and manufacturing sectors that nonetheless pay well by Brazilian standards. By 1991, according to an estimate by the Japanese consulate in Brazil, 10 percent of the Japanese-Brazilian population was residing in Japan (Ishigaki, 1992: 22). Tomé-Açu households used dekassegui income to reduce farm debts, pay for secondary education, and invest in capital improvements on their farms.

INFLATION, ECONOMY, AND STATE POLICIES

Pepper prices fell again in the early 1990s; this time the fall in price corresponded with the soaring inflation rates, as much as 80 percent a month, characteristic of the Brazilian economy at the time. As a result of inflation, the cooperative faced increasingly enormous debt. To reduce inflation, in 1995 President Fernando Henrique Cardoso implemented the Real Plan, which fixed the Brazilian real to the U.S. dollar. Again the cooperative was forced to liquidate many of its assets, including a gas station and supermarket, and cut most services to members. Directors of the affiliate offices, supermarket, gas
station, and fertilizer production division were strongly encouraged to purchase their units from the cooperative. The cooperative maintained only the pulp factory, office building, and two warehouses for pepper and cocoa beans.

The cooperative was in crisis, and the board of directors was considering disbanding it. A group of second-generation Japanese-Brazilian producers formed a coalition and agreed to run for the board of directors on the condition that they could revise the annual activity plan and that the cooperative would be debt-free on their assumption of leadership. Typically, older first-generation immigrants had been elected to director seats out of respect for their social position in the community. The coalition allowed younger members to run together, rather than alone, against respected elder members. By voting for the coalition, members could cast a vote in favor of passing the directorship to a younger generation of leaders.

The new cooperative leadership was graced with an unanticipated consequence of national economic reform. In 1987, Japanese-Brazilian producers had established the Cooperativa de Electricidade Rural de Tomé-Açu (Rural Electrical Cooperative of Tomé-Açu—COERTA) to bring electricity and telephone lines to farms. CAMTA and COERTA memberships were virtually identical. After initial investment and construction, COERTA turned over the electrical lines to the state electric company in return for company stock that at the time had no market value. With the privatization of state enterprises in the late 1990s, these stocks suddenly acquired value, and COERTA auctioned them off for US$3,300,000. Of that, COERTA lent US$2,000,000 to CAMTA for use in the further development of the pulp factory. CAMTA constructed a new processing plant and purchased an additional freezer storage unit to increase its production capacity. Increased processing capacity allowed the cooperative to expand its line of tropical fruit juices, which are now marketed both nationally and internationally. The cooperative also opened a technical assistance office with three full-time staff.

At the turn of the century, CAMTA leaders hoped that the cooperative was moving into a period of financial stability and even growth. Most CAMTA farmers were financially better off than the majority of the municipio’s population. Members surveyed in 2005 generated the majority of their average annual income of 86,944 reais (approximately US$36,226) from farm production and owned a median of 200 hectares of land. Thus, the average CAMTA member was squarely in Brazil’s middle class. But considerable variability still existed within the membership base. Of the 30 members surveyed, the lowest annual income reported was US$3,993 while the largest was more than US$150,000. All of the wealthiest members (those who earned more than 200,000 reais in 2005) had expanded their farms to include cattle ranching. The cooperative had 113 members, down from the peak enrollment of several hundred during the 1960s and 1970s. But cooperative leaders asserted that members who had withdrawn in the 1980s and 1990s and maintained farms and residences in the municipio had reenrolled during the most recent upturn in the cooperative’s success. In contrast to the situation in CAMTA’s early years, a number of private buyers now operate in Tomé-Açu, but cooperative membership continues to have its advantages. The cooperative provides important services, including better prices for products, technical support, organized
and informal opportunities to share local ecological knowledge, a guaranteed market for tropical fruits, storage for dry goods to facilitate optimal sales times and maximize profit, and association with the cooperative’s historic development role. Finally, in the early 2000s the cooperative opened its membership to non-Japanese farmers.

KEY THEMES IN CAMTA’S LONGEVITY

The narrative offered by CAMTA leaders and members about the history of their cooperative contains several key themes, among them diversification, innovation, internal and external capital investment, cooperative unity, and democratic decision making. While CAMTA’s own version of its history is critical to understanding the success of the cooperative, it obscures some of the internal divisions within CAMTA and the Japanese-Brazilian immigrant community of Tomé-Açu. Some of these internal divisions are brought to the fore in the following discussion as a way of both complicating and highlighting CAMTA’s success.

DEVELOPMENT OF ECOLOGICAL KNOWLEDGE AND AN AGROFORESTRY MODEL

Crop diversification and critical production experience have led to the development of important local ecological knowledge and an agroforestry model well-suited to the Amazonian environment. Agroforestry is not new to the Amazon region, but the particular model practiced by CAMTA farmers emerged out of individual farms and was supported and disseminated in part through CAMTA. Since the 1970s, Japanese-Brazilian producers in the region have worked to develop an agricultural model based on diversified cultivation that is both environmentally and economically sustainable.

The basis of this model is that production is most successful when it mimics some of the important natural processes of the tropical forest. Crops are interplanted, grown with associated crops that complement each other by providing shade and that allow farmers to focus intensively on smaller plots of land. Crops are planted to establish a series of successive harvests. For example, a succession might begin with pepper and then be coupled with shade-giving crops like cacao and *cupuaçu*. Among these crops, farmers plant slower-growing trees for high-quality timber. Combinations include native tropical fruits like *açai*, cacao, passion fruit, and *cupuaçu* and imported crops like black pepper and African oil palm. Crops are intensely fertilized with a variety of organic compounds, including organic wastes, natural fertilizer compounds, charcoal, and bokashi, a type of fermented compost developed in Japan, to ensure that associated crops do not compete for nutrients. In contrast to black pepper, the newer crops require prompt transport and processing.

Japanese-Brazilian farmers have received national and international attention for their agroforestry, which is considered a potential model for sustainable agriculture in the Amazon (Subler and Uhl, 1990; Yamada and Gholz, 2002a). Producers stressed their minimal dependence on chemical pesticides and herbicides and pointed out that visually their farms appeared to mimic
and blend into the surrounding rain forest. Subler (1993) showed that farmers’ agroforestry techniques maintain levels of soil fertility equivalent to neighboring mature forested areas. Some members emphasized their commitment to keeping intact tracts of virgin forest on their properties. According to members, few land parcels in the municipio and surrounding area remained, outside of some Japanese-Brazilian families’ landholdings, that were not logged in the 1980s timber boom. In interviews with CAMTA members, a livelihood identity as sustainable farmers in a threatened Amazonian environment merged with members’ Japanese-Brazilian ethnic identity and the corporate identity of CAMTA.

The development of an agroforestry model grew out of a rich knowledge base rooted in the history, experience, and education of CAMTA’s producer-members and employees. Among members and their families there exists a high level of education in agricultural sciences and an interest in new developments in production technology, especially environmentally sustainable options. Noteworthy are the many producers who are amateur researchers, experimenters, and innovators in agroforestry techniques. CAMTA farmers have often relied on what Yamada and Gholz (2002b: 24) term “adaptive research and development” in their farming practices, particularly in the move from monoculture pepper production to a diversified agroforestry model. Farmers do their best to research techniques and crops, test new crops and strategies, and adapt or discard as necessary, sometimes with minimal outside technical assistance. They need to have substantial knowledge about each crop—both agricultural expertise and global price—and understand how these crops interact with each other as associated crops within the agroforestry system. One of CAMTA’s agronomists thinks that the agroforestry model presents such a variety of products that it becomes more difficult for producers to manage their crops effectively. The lack of effective management can mean that sometimes producers do not recognize that they are losing money. Subler and Uhl (1990) echo this concern.

CAMTA has provided a setting and structure for sharing information among members to develop and manage a complicated agroforestry model. Local ecological knowledge, combined with agroforestry theory and techniques, has become a resource that members share through the cooperative. CAMTA has facilitated the introduction of new ideas and products. For example, its agronomist in the 1960s introduced new fruit and spice crops to the region. When new crops have taken hold, the cooperative has pursued market possibilities for members’ diversified production. The cooperative sponsors seminars and field trips for members on new crops and cultivation techniques. Cooperative committees focused on specific alternative crops serve as a vehicle for members to share information and new developments. These forums help address some production difficulties resulting from the complexity of agroforestry production. CAMTA’s most obvious support to farmers’ agroforestry is its fruit pulp factory, which has expanded and guaranteed a market for farmers’ tropical fruits.

Though CAMTA has supported and promoted the agroforestry model through research, venues for information sharing, and the pursuit of markets for a wider range of products, adaptation of the agroforestry model remains
an individual household decision. Many of the members we talked with displayed and explained with pride their personal applications of the agroforestry model on tours of their farms. Some farmers are at the forefront of agroforestry developments, for example, incorporating crops not currently marketed by the cooperative, such as mahogany and other hardwoods, into their agroforests. But other farmers talked about their interest in profitable monocrops such as African oil palm that required less constant management than a typical agroforestry-style farm. Still others, while recognizing the importance of the agroforestry model for improving farmers’ financial stability and protecting the environment, had branched out into cattle ranching, a livelihood of questionable long-term environmental sustainability in the Amazon (Mattos and Uhl, 1994). If these households were to pursue these alternative models and abandon agroforestry, they might find cooperative membership less valuable.

The long-term economic sustainability of farmers’ diversified production remains to be seen. CAMTA leaders expressed tentative hope that the development of the fruit pulp factory and a guaranteed market for members’ tropical fruits would ensure that both members and the cooperative could avoid crises like the ones caused by declines in the price of pepper. Surveys of members showed households with diverse production. Members on average cultivated five different crops, typically pepper, cacao, and then a selection of fruits for pulp production, such as passion fruit, acerola, and cupuacu. But they still relied extensively on pepper as their primary source of income. On average, roughly half of members’ household income was derived from the sale of pepper in 2004, a year of relatively low pepper prices. During peak price years for pepper, this principal crop likely accounts for an even larger percent of households’ income. Still, CAMTA members think that they are close to decreasing their dependence on pepper to the point that producers and the cooperative will more easily ride through pepper’s boom-and-bust cycles.

STRATEGIC AND CRISIS-DRIVEN CAPITAL INVESTMENT

Another key ingredient in the long-term success of CAMTA has been both strategic and crisis-driven investment of capital at the household and cooperative levels. While capital has sometimes been put toward short-term goals, even in times of crisis it has often been “patient” and invested in long-term production and market development.

The unprecedented wealth brought by the first decade of pepper production was a phenomenal change for farmers who had struggled for decades to make a living in Tomé-Açu. It is remembered by members as a period of ostentation and rampant consumption. Farmers imported new vehicles and constructed two-story mansions on their homesteads to replace small wood-plank homes. Staniford (1973: 48), who conducted research in Tomé-Açu in the mid-1960s, describes the conspicuous consumption typical of wealthier families, including new homes and home appliances and elaborate parties. But households also reinvested profits in farms, expanding production through increased inputs and labor and purchasing additional lands. Additional lands allowed siblings or future generations to establish independent households. Profits
were also used to invest in children’s secondary and university education; some adult children have returned to their family farms with relevant degrees in agronomy and related fields. More recently, a few farmers have invested in cattle and additional lands for pasture.

While in the past high pepper prices provided the opportunity to reinvest farm profits, many households have more recently turned to temporary work in Japan to garner more capital. The CAMTA members we surveyed still rely heavily on farm income (half earn money only from farm activities), but migration plays an important role in livelihood strategies, especially for younger generations. Half of the households surveyed had at least one offspring working in Japan. Six of 30 households reported receiving income from members working in Japan, and this income made up on average about 20 percent of their annual income. Working in Japan presents younger farmers with the opportunity to accumulate capital to invest in heavy equipment, land, and sometimes cattle and has allowed households to pay off debts and provide secondary and university educations to younger members.

Financial capital has also come from external organizations. Japanese development institutions—the Companhia Nipônica and later JICA—played formative roles in the development of the Japanese-Brazilian community in Tomé-Açu. The Companhia Nipônica, with a land grant from the state of Pará and with immigrants’ own capital (paid in advance as a charge for immigration and settlement services), invested in basic services and shaped the initial development of Tomé-Açu as an agricultural settlement with the aim of commercializing agricultural crops for export. JICA offers technical assistance worldwide, but it has special technical, financial, and educational programs specifically for Japanese emigrant communities. Beginning in the 1970s, JICA provided a series of capital investments for service and infrastructure improvements, market expansion, and improvements to individual farms. Some of these investments have been proactive, such as the provision of partial funding to construct electrical and phone lines to Japanese-Brazilian farms. In other cases, JICA has offered capital as a stopgap in times of financial crisis to CAMTA and to individual members through the cooperative. In all cases, the key is the provision of external funds when the cooperative or the community and its members do not have sufficient financial capacity to undertake new projects or weather financial hardship. JICA investments have often been made at a corporate level and then distributed to individual households through a local organization. Thus the cooperative has played an important role in linking farmers to external funding. JICA’s funding has allowed the cooperative and the Japanese-Brazilian producer community to reinvent themselves when the prevailing economic strategy and cooperative leadership were no longer viewed as successful. Dekassegui income and funding from JICA are the direct result of Japanese-Brazilian farmers’ ethnic identity, which has also historically cemented the cooperative.

ETHNIC IDENTITY AND COOPERATIVISM

The leading historic role that CAMTA played in creating a successful Japanese immigrant community in Tomé-Açu is a central narrative for members. They recognize the contributions that the cooperative made to their parents’ and
their own successful livelihoods, and they associate the values of cooperativism with Japanese traditions. In the early history of CAMTA, the cooperative and the Japanese immigrant community were virtually inseparable. CAMTA literature produced in the early 1960s stated as much: “Tomé-Açu is unique. The community is the co-operative and the co-operative is the community. They are two sides of the same coin” (as quoted in Staniford, 1973: 151). CAMTA was the collective face of the Japanese immigrant community and mediated between immigrants and external markets and the Brazilian state. It was responsible for the creation of key institutions and services, including the first schools and hospital. Older members especially do not make clear distinctions between CAMTA, the local Japanese cultural society, and the larger Japanese-Brazilian community when discussing their participation in the social and economic life of Tomé-Açu.

When asked to talk about the meaning of the cooperative, a few members specifically equated the cooperative with Japanese culture and identity and a Japanese philosophy of cooperativism and strength in unity. Cooperatives and rural associations were not uncommon in Japan at the time when Japanese immigrants were migrating to Brazil. But the importance of cooperatives and associations for Japanese immigrants emerged as an economic and social strategy for adjusting to life in Brazil (Maeyama, 1979). Nationally, the achievement of Japanese immigrants is tied to the development of successful agricultural cooperatives in southern Brazil (Makabe, 1999). Thus, it is not surprising that CAMTA members link cooperativism and Japanese immigrant identity. For these members, the cooperative is part of their heritage and identity as Japanese-Brazilians.

The strong sense of cooperative and ethnic unity was the result of specific historical realities. Brazilians’ distrust of Japanese immigrants during World War II made it difficult for Japanese-Brazilians to develop social networks outside their own immigrant communities. Language barriers also made networking difficult, and as a result they relied heavily on other Japanese immigrants. The geographic isolation of Tomé-Açu, an overwhelmingly Japanese immigrant community until the 1950s, also pushed Japanese-Brazilian farmers into association with each other. Finally, the series of waves of immigration from the 1920s to the 1960s increased the population of Japanese-Brazilians in the area, revitalizing ethnic and linguistic ties to Japan.

In the success of CAMTA and the Japanese-Brazilian community of Tomé-Açu, ethnicity played a key role. The homogeneous ethnic makeup of the cooperative increased unity, and at certain points in its history ethnic identity and cooperative membership were synonymous. Ethnic identity as Japanese-Brazilians facilitated support from the Japanese government through JICA, which played a pivotal role in key moments in the history of CAMTA. More recently, farmers’ ethnic identity has offered access to external capital through migratory labor in Japan. And the narrative of CAMTA, presented to members and the public through oral histories and cooperative literature, reaffirms the relationship between ethnic and cooperative identities.

The relationship between cooperative membership and ethnic identity has been dialectic. Ethnic identity greased the social wheels of the cooperative, but the cooperative also promoted ethnic identity and unity through sponsorship of cultural events and ethnic membership requirements across different Japanese
immigrant groups. However, it would be a mistake to attribute the success of CAMTA solely to the ethnicity of its members. There are many other Japanese-Brazilian cooperatives, especially in the South where the majority of Japanese immigrants settled, and some of these did not weather the economic crises of the 1980s and 1990s.

Further, while ethnicity helped to solidify unity among cooperative members, members were (and are) far from a uniform group. The original immigrants to Tomé-Açu were on a more or less equal footing, at least in terms of access to land, services, and markets. As new generations of immigrants arrived (and some families left for better prospects elsewhere), households became stratified by income, educational level, property ownership, and length of time in Brazil. Staniford (1973) noted the income disparity among Japanese-Brazilian farmers in Tomé-Açu in the 1960s, and wealth differentials continue to exist among members.

The cooperative both reproduces and ameliorates income disparity within its membership. Members with lower incomes and smaller landholdings derive a certain amount of social capital from their association with the cooperative. They also receive the same price for their product as wealthier, more productive members. However, some cooperative policies can increase disparity. For example, the cooperative’s policy not to pay in advance, while it protects the overall economic stability of the cooperative, can force cash-strapped producers to sell in advance to third parties at lower prices. The cooperative has always faced tensions between individual profit and cooperative unity in some form. Yet despite these differences it has maintained its membership base over the long term. One way that it has worked to moderate class divisions among members is through democratic decision making.

DEMOCRATIC STRUCTURE AND REJUVENATION OF LEADERSHIP

The cooperative’s leadership structure and shared decision-making processes have provided it with a degree of flexibility and a sense that the cooperative represents the interests of members. Each member is afforded one vote, regardless of annual sales through the cooperative. Members elect leaders and vote each year to approve an annual plan. This helps ensure that leadership and management reflect the interests of a broad swath of the membership.

Throughout its history, CAMTA’s leadership has been composed of a handful of elected members who fill fixed-term, renewable administrative positions. Currently, there are four administrative directors. Two have full-time administrative positions: one manages the dry goods export division and the other manages the fruit pulp factory. These administrators are guided by the annual plan approved by members, and they meet monthly with the other two directors. However, they have considerable responsibility and flexibility in export and factory operations. CAMTA's formal leadership in 2005 was made up of educated second-generation farmers with larger land bases.

During periods of relative stability, the typical choice for cooperative leaders is venerated older, wealthier farmers who serve multiple terms. However, periodically leadership is renewed, often in times of crisis. Rejuvenation of
leadership seems to have been an escape valve of last resort, often in response to the threat of dissolution. JICA’s insistence that the cooperative administration be replaced in the early 1980s was one example, but the call for new leadership has also come directly from members. In periods of transition or crisis, younger, bicultural members have taken the lead, tapping into their capacity to translate between Japanese immigrants and Brazil’s economic elite. Such was the case in the founding of the cooperative by forced émigrés from Belém who chose to remain in Tomé-Açu after World War II. An elder former leader of the cooperative explained that the most recent shift in leadership from older, first-generation Japanese immigrants to younger, second-generation Japanese-Brazilians was a conscious strategy developed by older and younger members to rejuvenate cooperative leadership in the 1990s.

The fact that CAMTA’s leaders are selected from among members provides some assurance that directors do not lose sight of the membership base and the unique production challenges and opportunities that farmers face. Electing members as directors has helped CAMTA to avoid the “concentration of power” that Nash and Hopkins (1976: 11) found typical of cooperatives with full-time nonmember managers. Staniford (1973) suggested that in the 1960s the cooperative leadership worked in favor of wealthier farmers. But, for example, the administration’s choice in the early 1980s to distribute debt payments on the basis of members’ sales rather than per capita, despite protests from some larger producers, demonstrates that cooperative leadership has worked to protect and retain its less affluent members.

CAMTA strives to live up to the democratic principles of cooperativism. However, there are still some members who do not participate in annual meetings and some who are geographically isolated and therefore have fewer opportunities to interact with the leadership. Also, CAMTA’s operating language has shifted to Portuguese, which presents problems for older members who speak primarily Japanese, although younger, bilingual members provide informal translation at cooperative events. Previously, Japanese was the principal language for CAMTA’s administration. In the 1960s, CAMTA kept parallel sets of financial books, one for members in Japanese and one for Brazilian auditors in Portuguese (Staniford, 1973: 34). The shift to Portuguese, however, was critical to integrating non-Japanese-Brazilians into CAMTA’s membership.

**CONCLUSION**

A series of crises organizes members’ narratives of CAMTA’s history, with the greatest and most consistent problem being the fluctuating price of pepper. The challenges of cultivation in the Amazonian environment, the dangers that derive from dependence on monoculture, and instabilities in the national economy have also posed obstacles. Falling pepper prices and environmental and other economic changes have been unwelcome but important opportunities for entrepreneurship, innovation, and adaptation. Farmers’ production diversification and their pursuit of a sustainable agroforestry model resulted from facing the challenges and crises described above.
The social capital generated and maintained by the cooperative has been a critical component in the success of Tomé-Açu farmers. CAMTA has allowed members to pool their financial capital and farm products to obtain better prices and access to regional and international markets. It has supported the development of an agroforestry model, especially by serving as a forum for the sharing of knowledge and by marketing agroforestry products. Through each crisis, CAMTA has remained a resilient collective that continues to leverage financial resources from internal and external sources, develop and share local ecological knowledge, and creatively adapt to meet the changing needs and circumstances of members.

The original founders of Tomé-Açu, Japanese-Brazilian farmers, are now a minority and an anomaly in a region that mirrors wider Brazilian income disparities, a place where most residents are small farmers interspersed with a few wealthy logging and ranching families. Perhaps the next test of CAMTA’s ingenuity and flexibility will be not whether the cooperative will withstand future financial crises but whether its members and leaders can extend the cooperative and agroforestry model to smaller, marginalized producers in the area.

CAMTA leadership in 2005 was imagining what role it might play as a social development institution in Tomé-Açu, especially with very small-scale farmers. It envisions the cooperative’s taking a development role in the area by providing better market access to small-scale farmers and by sharing its expertise in agroforestry. The first step has been to develop relationships with local marketing associations involving small-scale producers (those who own 25 hectares or less). These associations may join CAMTA as members, and this allows small farmers to share the entrance fee and membership dues and sell their product to CAMTA at a price higher than that offered by other buyers.

Part of this interest is clearly pragmatic. CAMTA’s fruit processing plant has outpaced the current production of members; only 30 percent of the fruit processed at the plant comes from members, and the rest is purchased from very small-scale farms locally or imported regionally. CAMTA wants to ensure long-term, quality tropical fruit yields for the factory and sees local small producers as one potential answer. Beyond pragmatic reasons, its vision harks back to the role it played in helping Japanese immigrants establish themselves in Tomé-Açu.

The initiative presents some challenges. CAMTA’s history contains several factors that may be difficult to replicate. Small producers lack the access to financial capital and land that the Japanese-Brazilian farmers have enjoyed. This deficit could be addressed in part by offering small producers access to the social capital available to CAMTA members through their association with the cooperative. A central question is whether the cooperative’s social network is too closely tied to ethnic and class relations to be truly open to non-Japanese small-scale farmers.

The role that CAMTA plays in the production and dissemination of local ecological knowledge will continue to be important. Some agroforestry techniques can be readily adapted by small producers (De Menezes et al., 2004), but others require substantial financial and labor inputs that make them inaccessible to most small producers (Subler and Uhl, 1990).
The overarching challenge for small producers is related to access to land and capital. Historically, Japanese-Brazilian farmers had greater access to land than in the current real estate market, in which smallholders cannot compete with wealthy logging and ranching interests. Also, the cooperative and its individual member farms have been resuscitated with injections of external capital during key moments of crises, primarily from Japanese aid agencies and from remittances from migrant workers in Japan. Access to this capital is based in the historic relationship between Japanese emigrants and the Japanese government. Similar capital assets are not available to most small-scale farmers in Brazil.

Differences in class and ethnicity may also prove challenging. The cooperative has always seen substantial wealth disparities, but allowing a farmers’ association to be represented as one voting member may pose challenges to the democratic structure of the cooperative. More important, ethnic identity has served to solidify cooperative affiliation. Faced with a need for more product and more members and given a constant (not growing) Japanese-Brazilian farmer population, CAMTA may be forced to rethink its identity vis-à-vis ethnicity. As the cooperative reshapes its membership, the equation of ethnic and cooperative identity may present new challenges. One possibility might be to redefine membership in terms of a livelihood identity based on sustainable agroforestry.

Small producers will likely require more than technology transfers and fair and stable prices for their products to overcome these challenges and become equally integrated into the cooperative. Despite the challenges, CAMTA leaders and members are cautiously optimistic about the future of the cooperative, its capacity to serve and widen its membership, and the possibilities for promoting sustainable development alternatives in the region.

NOTES

1. The community of Japanese-Brazilians discussed first settled in the town of Tomé-Açu and then later established the neighboring town of Quatro Bocas, as well as several outlying settlements. Following local usage, this article refers to Tomé-Açu, Quatro Bocas, and outlying settlements together as “Tomé-Açu.”

2. JICA was formed in 1974 by the merger of Japan’s Overseas Technical Cooperation Agency with the Japan Emigration Service, which provided financial and technical resources to support Japanese emigration.

REFERENCES

Berkes, Fikret and Carl Folke

Bourdieu, Pierre

De Menezes, Antônio José Elias Amorim et al.
Gertler, Michael
2006 Synergy and Strategic Advantage: Co-operatives and Sustainable Development. Saskatoon: Centre for the Study of Co-operatives, University of Saskatchewan.

Glasbergen, Pieter

Ishigaki, Yasuji

Lehtonen, Markku

Maeyama, Takashi

Makabe, Tomoko

Mattos, Marli Maria and Christopher Uhl

Moran, Emilio F., Eduardo S. Brondizio, Joanna M. Tucker, Maria Clara da Silva–Forsberg, Stephen McCracken, and Italo Falesi

Nash, June and Nicholas S. Hopkins

Nishikawa, Daijiro

Staniford, Philip

Stone, M. Priscilla

Subler, Scott

Subler, Scott and Christopher Uhl

World Commission on Environment and Development

Yamada, Masaaki

Yamada, Masaaki and H. L. Golz