

# Developing an Agro-ecotourism Route in Copey de Dota





# Developing an Agro-ecotourism Route in Copey de Dota

An Interactive Qualifying Project Report submitted to the Faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science in cooperation with El Ministerio de Agricultura y Ganadería (MAG)

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## Abstract

In recent years, Costa Rican farmers have been shifting from conventional to sustainable methods of farming. However, conversion comes with high startup costs, low initial return on investment, and lack of consumer attention. We worked with the Costa Rican Ministry of Agriculture & Livestock to develop an agro-ecotourism route in Copey de Dota. The goal of this route is to raise awareness of sustainable farm practices and increase revenue for farmers. We toured farms and interviewed farmers to determine characteristics of an appealing visitor farm. We interviewed tourist agencies and assessed community offerings to determine potential tourist interest. By identifying ideal tourist amenities, and assessing farms, we offered recommendations for route development and community promotion.

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# Executive Summary

## Introduction

The concept of agriculture as a potential tourist activity may not at first seem entirely intuitive. However, a day spent touring lush avocado, passion fruit, and coffee fields followed by sampling local artisanal goods is the type of experience gaining popularity in Costa Rica. Activities such as these attract tourists to Costa Rica's developing agro-ecotourism industry. Combining agriculture and ecotourism to bring tourists to rural communities has the potential to better the lives of small-scale farmers who have recently begun to shift from conventional to more sustainable methods. This shift is apparent in the Copey de Dota region of Costa Rica, where we worked with El Ministerio de Agricultura y Ganadería (MAG) and members of the community to assess the current capabilities of the region in supporting tourism. Our efforts have laid the foundation for an agro-ecotourism route that will



Figure 1: Path at Finca Tocha

generate income for the farmers while educating tourists about sustainable practices.

## Background

For much of Costa Rica's history, the agricultural industry has been dominated by large-scale production of cash crops such as coffee and bananas. According to the CIA World Factbook, agriculture constitutes fourteen percent of the labor force as well as six percent of the Costa Rica's Gross Domestic Product (Central America and the Caribbean: Costa Rica, 2016). However, there is a need for more revenue among the small farmer community due to increasing price of commodities and decreasing profits from farming (Babin, 2015). MAG is a Costa Rican government body dedicated to serving small and medium scale farmers and supporting their livelihoods. Our team worked with MAG to create an agro-ecotourism route through the district of Copey located within the canton of Dota. The emerging industry of agro-ecotourism offers potential to better the lives of farmers by providing new sources of income without the need to abandon their livelihood.

## Objectives and Methods

The goal of this project was to develop the foundation for an agro-ecotourism route connecting farms in the Copey de Dota region in order to raise awareness of sustainable farm practices and increase revenue for the farmers. We worked with MAG to accomplish the following objectives:

1. Determine characteristics that make farms most suitable for tourism.
2. Analyze the current capabilities of individual farms and the region as a whole for supporting tourism.
3. Determine appropriate regional development strategies for the agro-ecotourism route.
4. Assist MAG in determining effective outreach and promotion strategies for the agro-ecotourism route.

Through interviews and analysis of information acquired from our fieldwork in Copey, we collected qualitative data. We conducted semi-standardized interviews with farmers and business owners and recorded observations on farm characteristics during our visits. We developed selection of criteria for a Farm Assessment Matrix (FAM) in order to assess the strengths and weaknesses of each individual farm in the pre-determined categories. From these assessments, we were able to compare farms to determine those best suited for tourism and which areas needed improvement in the region as a whole. Specifically, the FAM allowed us to identify which farms are in the best condition in each category by counting the number of details



Figure 2: Sign for goat house at Finca Integral Educativa San Francisco de Asís

fulfilled.

This analysis led to our determination of appropriate regional development strategies by identifying ways in which farms can emulate others that scored higher in certain categories. With a solid understanding of the region as a whole and directions for improvement, we focused on determining marketing strategies to promote the route. We interviewed a MAG employee and a web developer to explore potential promotional ideas for the route. Then, we reached out to various tourism agencies in Costa Rica to acquire data on rural tourism promotion strategies. We sought to use this data to support and build upon our own research and connect MAG and Copey with agencies that can help market the route.

Table 1: Farms in the Copey agro-ecotourism route

Farm Name
Finca Agropecuaria Los Quetzales
Finca Cima Verde
Finca Integral Educativa San Francisco de Asís
Finca Integral Sostenible El Mon
Finca Integral Sostenible Toro Careto
Finca Las Manzanas
Finca Tocha
Finca Valchi

## Findings

Through discussions with Seidy Rodríguez, a community leader and farm owner, we identified eight farms in Copey that wish to be included in the agro-ecotourism route, shown in Table 1. These farms specialize in high-altitude fruits such as avocados, apples, blackberries, and granadillas and incorporate sustainable practices including biodigesters and mountain microbes. Some of these farms have additional amenities including restaurants, cabins, and trout fishing, and others have plans to construct such features in the near

future. Data obtained from the Instituto Costarricense de Turismo (Costa Rican Tourism Institute), as shown in Table 2, shows that interest in rural tourism is on the rise and that many tourists already participate in activities similar to those offered in Copey. Our visits to farms and agribusinesses in Copey de Dota allowed us to determine the characteristics necessary to support tourism as well as extra features that help to diversify the route.

With the Farm Assessment Matrix (FAM), we made comparisons between the farms in

Table 2: Costa Rican Tourism Institute estimates of non-resident tourists visiting

Year	Number of tourists	%
2006	45,582	3.7
2007	54,280	4.0
2008	49,669	3.5
2009	72,910	5.5
2010	99,414	7.0
2011	122,975	8.4
2012	163,030	10.5

the route and assessed the readiness of individual farms for tourism based on each category. The categories included in the FAM are accessibility, paths, signs, products, sustainability, additional features, and nature. Without clearly established paths, tourists risk getting lost or getting hurt due to a misstep caused by difficult terrain. Coupled with paths, effective signs are necessary for directing a tourist through the farm while also identifying and connecting specific points of interest on the farm. The existence of sustainable practices is also important to expand tourists' knowledge of organic and responsible farming technique.

## Recommendations and Deliverables

Based on our data analysis, we were able to develop a set of recommendations to give to MAG and the community members of



Figure 3: Lake for trout fishing at Finca Integral Sostenible Toro Careto

Copey in order to facilitate the development of agro-ecotourism in the region. We decided that the most effective display of a tourism route is a map of the region highlighting the farms and agribusinesses. Tourists can use this map, shown in Figure 4, to set their own itinerary with the attractions they are interested in.

To promote Copey's agro-ecotourism route, we coordinated with the software engineer for the municipality of Dota to create a website. The map of the route will be visible on the website along with product information for each farm and business in the route for use by tourists while planning their trip. In addition, we have recommended the creation of a Facebook page to provide social media updates on the Copey route as well as link to the website.

Since the farmers we interviewed expressed strong interest in the educational aspect of tourism, we advocated the addition

of certain educational components on their farm. One important addition is the use of signs to show the steps involved in sustainable processes such as mountain microorganisms or the production of cheese, wine, jams, and other value-added goods. A poster with a diagram showing the integrated features of the farm would also teach tourists and fulfill the farmers' goal of highlighting and sharing their sustainable practices. In order to further emphasize the environmental focus of the farms and attract more tourists interested in learning about this aspect of farming, we also suggested that MAG should help the farmers apply for Bandera Azul Ecológica certification. This program is a preeminent ecological label in Costa Rica that is used to designate a business as sustainable.

In addition to education, we recommended that farmers make improvements to infrastructure on their farm based on our analysis using the FAM. We have recommended designating parking areas within the town center of Copey as well as within farms that we judged to have the capacity for such a feature. We also suggested changes to improve the walking conditions of paths within farms as well as adding signs to complement the paths. These include directional arrows to various points of interest and labels for the different areas of a farm.

We found that the existing infrastructure and future plans of farms in Copey make the region ideal for the implementation of agro-

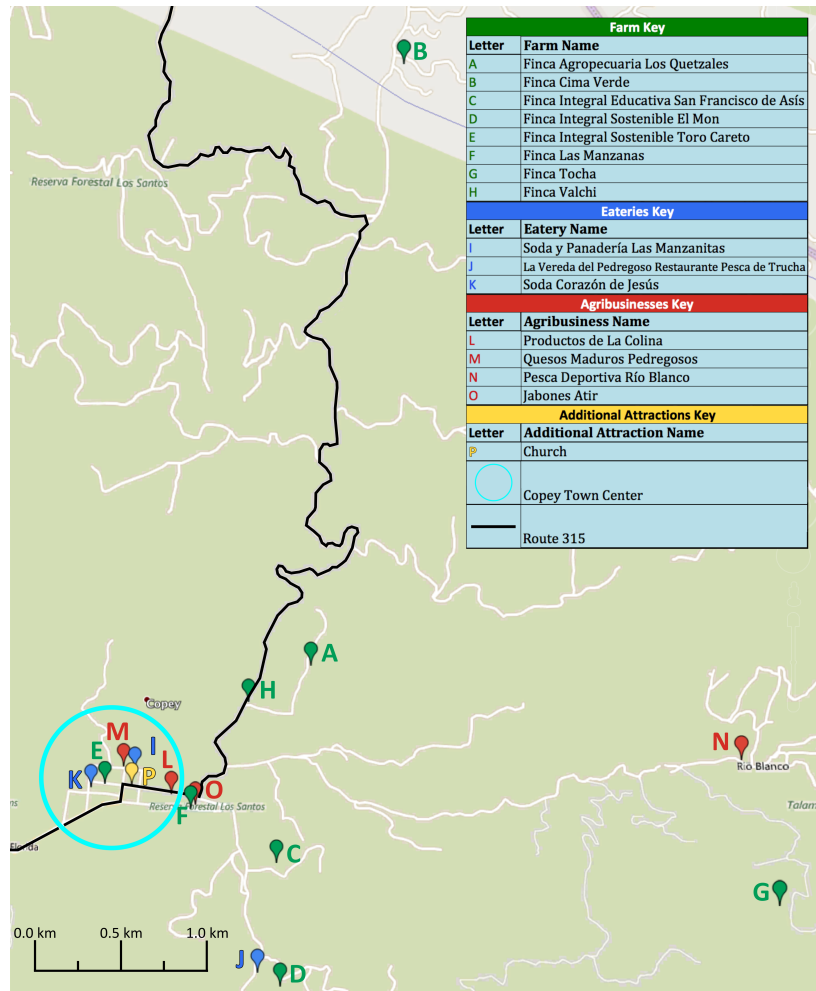


Figure 4: Tourist map of farms, agribusinesses, and points of interest in Copey de Dota

ecotourism. We made recommendations to the farmers of Copey, but the fate of the project lies within the community because it is their efforts that will lead to the success of the route. The results of this project and the recommendations we made will serve as a starting point within Dota and Costa Rica at large to foster this rural form of tourism and set an example for the development of similar routes in the future.



## Authorship

The authorship is broken down by the team member who mainly contributed to each section. All team members participated in the edits and revisions of every section. All photos within this report were taken by team members.

### 1. Introduction

Hook and General Topic	Jared Danaher
Environmental Issues, Socio-Economic Issues	Michael McMahon
Specific Project Goals	Jeffrey Letourneau
Objectives	Janine Fatal

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2.1 Agriculture in Costa Rica	Michael McMahon
2.2 The Ecotourism Industry in Costa Rica	Jeffrey Letourneau
2.3 Combining Agriculture and Ecotourism	Janine Fatal
2.4 El Ministerio de Agricultura y Ganadería	Jared Danaher

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3.2 Objective 2	Jeffrey Letourneau
3.3 Objective 3	Janine Fatal
3.4 Objective 4	Jared Danaher

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4.1.2.	Finca Cima Verde	Janine Fatal
4.1.3.	Finca Integral Sostenible ElMon	Jared Danaher
4.1.4.	Finca Integral Educativa San Francisco de Asís	Jared Danaher
4.1.5.	Finca Integral Sostenible Toro Careto	Michael McMahon
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4.1.7.	Finca Valchi	Jeffrey Letourneau
4.1.8.	Finca Tocha	Jeffrey Letourneau
4.2.	Farm Assessment Matrix (FAM)	Collaboration
4.2.1.	Accessibility	Michael McMahon
4.2.2.	Paths	Jared Danaher
4.2.3.	Signs	Janine Fatal
4.2.4.	Products	Jeffrey Letourneau
4.2.5.	Sustainable Practices	Michael McMahon
4.2.6.	Additional Features	Michael McMahon
4.2.7.	Nature	Janine Fatal
4.3.	Model Farms	Michael McMahon
4.4.	Evidence for Tourist Interest	Jeffrey Letourneau
<b>5.</b>	<b>Limitations</b>	Collaboration

## **6. Recommendations**

- |        |   |                    |
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| 6.2.   | The route should be conceptualized as a regional map.                                 | Jared Danaher      |
| 6.3.   | Parking and Accessibility in the region should be improved.                           | Michael McMahon    |
| 6.4.   | Farms in Copey should improve infrastructure such as signs and path.                  | Collaboration      |
| 6.4.1. | Signs   | Janine Fatal       |
| 6.4.2. | Paths   | Michael McMahon    |
| 6.5.   | Farmers should emphasize and improve educational components with brochures and signs. | Janine Fatal       |
| 6.6.   | Effective marketing strategies  | Janine Fatal       |
| 6.6.1. | Website   | Janine Fatal       |
| 6.6.2. | Facebook Page   | Janine Fatal       |
| 6.6.3. | Farmers Market  | Janine Fatal       |
| 6.6.4. | Organic Certifications  | Janine Fatal       |
| 6.7.   | Community leaders in Copey should connect with tourism agencies.                      | Jeffrey Letourneau |

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- |       |                                   |               |
|-------|-----------------------------------|---------------|
| 7.1.  | Website for agro-ecotourism route | Janine Fatal  |
| 7.1.1 | Map of route                      | Jared Danaher |

## **8. Conclusion**

Janine Fatal

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## Chapter 1. Introduction

The concept of agriculture as a potential tourist activity may not at first seem entirely intuitive. However, a day spent touring lush avocado, passion fruit, and coffee fields followed by sampling local artisanal goods is the type of experience gaining popularity in Costa Rica. Activities such as these attract tourists to Costa Rica's developing agro-ecotourism industry. This industry has the potential to bring vital revenue to inhabitants of rural areas while spreading awareness about sustainable farming and local culture.

Currently, Costa Rican farmers are expressing increased interest in sustainable means of growing crops while simultaneously looking to open up their businesses to agro-ecotourism. This trend is a result of economic and environmental issues that have developed in recent years in the agricultural sector. Within the last few decades, much of Costa Rica's rainforests were cut down to make room for cattle pastures and cash crop fields of banana, sugarcane, and coffee. Deforestation has reduced forests to 25% of their original size. The production of cash crops in the absence of field rotation resulted in an increased need for agrochemicals including fertilizers and pesticides (Kimata, 2012). Such substances can have many adverse effects on the local environment as they accumulate in the water systems and local wildlife.

Compounding upon the environmental issues, revenue has been declining in agricultural industries such as coffee due to the decreasing cost of commodities. At the same time, the cost of input such as fertilizers and other agrochemicals has increased (Babin, 2015). Because of this, many farmers have had to downsize their operations, reduce dependence on chemicals through alternative methods, and diversify their agricultural portfolios. However, farmers seeking to switch to sustainable methods must overcome obstacles including high startup costs, low initial return on investments, and organic certification to attract consumer attention. To combat these issues, there is a need to raise awareness and knowledge of the importance of sustainability while developing strategies to attract tourists and generate income.

With a diversity of crops and value-added products, agriculture is a logical extension of Costa Rica's already successful ecotourism industry. With this in mind, El Ministerio de Agricultura y Ganadería (MAG) is seeking to combine the industries of ecotourism and agriculture in order to promote these small-scale sustainable farms. MAG asked us to develop a proposal for an agro-



ecotourism route in Copey de Dota, which is about two hours southeast of the capital city of San José.

Working with MAG, our goal was to map out a route consisting of farms and agribusinesses. Additionally, we suggested improvements to farm infrastructure for tourism and marketing techniques that can be utilized to promote the route. We visited farms and agribusinesses in the region that are interested in the route to assess their physical characteristics and collect information on their operations. We did this by focusing on specific traits while visiting each farm, such as path quality, crops grown, whether chemicals are used, and future plans for improvement. Through this process, we gathered the same type of information for each farm, allowing for comparisons between farms so that we could develop regional recommendations for improvement. Finally, for marketing purposes, we identified strategies for MAG and the Copey community to implement in promotion of the route.

In the following background chapter, we provide an overview of the history of agriculture in Costa Rica, the efforts of MAG to promote sustainable agriculture, and the agro-ecotourism industry as a whole. We then go on to discuss the methods we used to conduct our study. During our visits to Copey, we used our observations to identify criteria that make farms suitable for tourism. We used these criteria to determine the extent of infrastructure available to support tourists, what improvements need to be made, and effective methods of marketing the route. This research allowed us to formulate a proposal to MAG with recommendations for the future development of an agro-ecotourism route in Copey de Dota.

## Chapter 2. Background

“Mi media naranja” is a Spanish phrase meaning “the other half of my orange” commonly used in Costa Rica to refer to a romantic partner. This phrase is an example of how deeply ingrained agriculture is in daily life. Costa Rica was once dominated by large-scale industrial cash crops like coffee and bananas that took a toll on the economy and ecosystem through the use of agrochemicals and unsustainable farming techniques (Kimata, 2012). To combat these issues, farmers have recently begun transitioning to more sustainable techniques.

In this background, we first discuss the history and current status of agriculture in Costa Rica, emphasizing the recent shift to sustainable methods of farming. We then describe the country’s ecotourism industry and ways in which successful ecotourism can benefit residents and the environment. With a solid understanding of agriculture and ecotourism, we explore the emerging industry of agro-ecotourism. Lastly we introduce our sponsor and the region, Copey de Dota, where we conducted our research on developing an agro-ecotourism route.

### 2.1. Agriculture in Costa Rica

Agriculture plays an integral role in the daily lives of many Costa Ricans and in the overall economy of the country. The very roots of the country were developed by growing bananas and coffee plants. According to the CIA World Factbook, agriculture constitutes fourteen percent of the labor force as well as six percent of the country’s Gross Domestic Product. The traditional agricultural products of Costa Rica, such as coffee and bananas, are still the mainstay of exports. However, the country’s agricultural exports are expanding due to new specialized goods such as wines, cheeses, and other artisanal farm commodities. Today, the Costa Rican agricultural industry includes bananas, pineapples, coffee, melons, ornamental plants, sugar, corn, rice, beans, potatoes, beef, poultry, dairy, timber, palm oil, and many other products (Central America and the Caribbean: Costa Rica, 2016).

#### 2.1.1. The Importance of the Small Farmer

A strong agribusiness has the potential to bring profit to many Costa Rican towns regardless of whether it is a large corporation, or a rural farm. The latter of these two may not appear to contribute as much to the local economy when compared to their commercial counterparts. This assumption is predominantly based on land size and volume of production. However, according to a

study done in South Africa, “the concept of ‘small-scale farmer’ should not be value-laden and viewed in a negative light”. This study found that many small-scale farms are “at least as viable, profitable and efficient as their large scale counterparts” (Kirsten & van Zyl, 1998). Although this study was performed in a different country, the small farms of Costa Rica have the potential to emulate the success of the farms in South Africa, especially with added revenue from agrotourism. In fact, small farms are leading the way in sustainable development as part of agribusinesses for long-term success (Kimata, 2012).

### 2.1.2. The Shift Towards Sustainable Farming in Costa Rica

Recently, interest has been growing in Costa Rica to shift from conventional to more sustainable farming methods. This change can be seen in Figure 5, below, that shows the increase in organic agriculture across Latin America. Sustainable agriculture experts and the United Nations Environmental Program (UNEP) agree that this change is necessary in Costa Rica in order to avoid over-exploitation of natural resources (Kimata, 2012). For the purposes of our research, the term conventional farming encompasses

agricultural techniques that have long-term adverse effects on the environment. These techniques include, but are not limited to, monoculture farming, the use of agrochemicals such as pesticides and fertilizers, and clearing of forest land.

The production of cash crops through monoculture farming, or growing a single crop extensively, has historically required large amounts of agrochemicals that threaten

natural ecosystems. These chemicals become necessary in monoculture to kill pests and competing weeds, as well as to provide additional nutrients for the crops as soil becomes depleted. The results of monoculture farming can be detrimental to the environment, causing water contamination, soil depletion, deforestation, and extensive loss of biodiversity. Through conventional farming, Costa Rica has over-exploited its natural resources for years to achieve short-term economic benefit. This farming method can also create social problems for the workers and local residents, including harsh

**Development of organic agriculture land in Central America 2005 to 2012**

Source: FIBL-RUTA-IFOAM-SOEL surveys 2007-2014

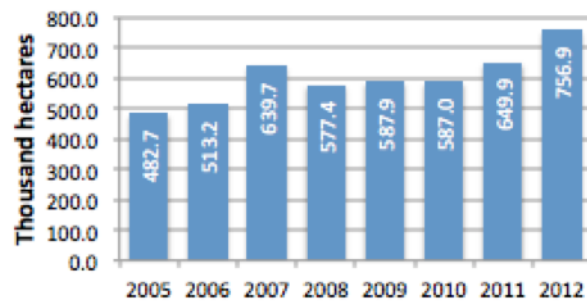


Figure 5: Land devoted to organic agriculture in Central America

working conditions due to hazards such as overexposure to agrochemicals (Kimata, 2012). On the other end of the spectrum, sustainable agriculture is defined as an “approach to producing food that is beneficial to the environment, consumers, animals and producers.” Some sustainable practices utilized in Costa Rica are crop rotation, natural fertilizers, and biological pest control (Kimata, 2012).

One of the largest and most popular types of sustainable agriculture is organic farming. Organic agriculture is defined as the farming practices that include, but are not limited to, the exclusion of artificial agrochemicals and genetically modified organisms, maintenance of soil fertility, compatibility with natural ecosystems, maintenance of natural biodiversity, and promotion of local production and distribution (Bonn, 2005). Costa Rica has a set of standards for organic farming similar to the above practices that serve as a guideline for many farmers. Organic farming has led to the creation of specialized farmers markets in urban areas, which promote this practice (Kimata, 2012). Even though Costa Rica has seen an expanding market for organic products, there are still numerous factors that hinder farmers’ abilities to turn to more sustainable methods.

### 2.1.3. Obstacles to Sustainable Agriculture

According to a United Nations Environment Programme report, obstacles to sustainable agriculture include lack of information and education, lack of access to capital and inputs, and restrictive laws pertaining to sustainable agriculture (Promoting Sustainable Agriculture and Rural Development). These factors greatly restrict many farmers from investing in new sustainable methods. A lack of knowledge prevents the opportunity to farm sustainably and a lack of start-up capital prevents short-term business success. Government intervention and the creation of legislation have the potential to help support those who utilize organic or other sustainable methods. One possible method to support sustainable agriculture is to couple it with the widespread success of ecotourism in order to provide the necessary capital to the farmers and aid in providing knowledge to the general population.

## 2.2. The Ecotourism Industry in Costa Rica

Ecotourism is an environmentally conscious form of tourism that generates significant revenue in Costa Rica each year. In 2014, there were over 2.5 million international visitors to Costa Rica, contributing in total \$2.646 billion to the national economy. This figure has significantly and steadily risen over the years from \$1.2 billion in 2003 (ICT, 2015). This makes the industry a vital

part of the country's existence, not only at the national economic level, but also with regards to the numerous Costa Rican citizens who make their livelihoods in tourism. In Costa Rica, tourism and ecotourism are very closely linked, since the natural geography and biodiversity are primary reasons for visiting and almost all common tourist activities center around nature.

While there is ongoing debate as to the precise definition of ecotourism, one frequently cited description given by the International Ecotourism Society (TIES) is “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people and involves interpretation and education” (TIES, 2015). For the purposes of this project, we believe it is important to emphasize that, as explained by TIES, true ecotourism must go beyond simply participating in activities in a natural setting. When successful, ecotourism promotes environmental conservation through the education of both locals and visitors. Furthermore, ecotourism is sustainable and not a mere exploitation of resources. If these conditions are met, the community will experience a range of social and financial benefits and visitors will leave with increased understanding of the local ecology and culture (TIES, 2015).

### 2.2.1. Social and Economic Benefits of Ecotourism

The social and economic benefits of ecotourism are naturally intertwined, since a community with additional revenue generated through tourism will ideally reinvest this money into programs in conservation, education, and infrastructure. One common criticism of ecotourism is that it cannot be as sustainable as it purports to be because business owners with increased incomes will use that money to further exploit natural resources for financial gain (Stem, Lassoie, Lee, & Deshler, 2003). However, numerous studies have provided strong evidence contrary to this claim. A survey conducted by researchers at Cornell University asked families involved in tourism how they spent additional income and how they would spend even more disposable income. Participants mostly answered that they would spend increased income on health, education, and savings (Stem, Lassoie, Lee, & Deshler, 2003). Rather than spend increased revenue on further land development, those employed in ecotourism more often choose to focus on family well-being.

The most direct benefit of increased ecotourism development to individuals and families comes in the form of employment. In rural areas, employment is often limited and tourism can lead to new options for many not already involved in farming, including in hotels and transportation. In the Osa Peninsula, workers in tourism had incomes nearly twice as high as those in other industries

according to one study (Hunt, Durham, Driscoll, & Honey, 2015). It is possible for increased tourism to hurt citizens by raising land prices to unaffordable levels and increasing taxes (Almeyda, Broadbent, Wyman, & Durham, 2010). However, in the Osa Peninsula, a survey of residents revealed a consensus that ecotourism increases overall quality of life while providing conservation benefits (Hunt, Durham, Driscoll, & Honey, 2015). The results of this case study indicate the potential for widespread benefits that do not apply only to those employed in the industry, but to the general populace as well.

Increased revenue at the community level leads to better services including health and education for its citizens. In Drake Bay, support from local hotel owners led to the construction of a high school and medical clinic, facilities virtually unheard of in such rural areas (Stem, Lassoie, Lee, & Deshler, 2003). There are direct educational benefits for employees of eco-businesses such as free English classes as part of employee training (Hunt, Durham, Driscoll, & Honey, 2015). Such language skills help employees not only in their current jobs but also in advancing their careers. Some of these benefits are absent in conventional tourism, which lacks the environmental focus of ecotourism. While conventional tourism can lead to increased alcoholism, drug addiction, and prostitution, examples like the Punta Islita Eco-lodge in Nicoya show that ecotourism may actually reduce the rates of these issues (Almeyda, Broadbent, Wyman, & Durham, 2010). In general, well-executed ecotourism should confer a level of respect for the area both environmentally and culturally.

### 2.2.2. Environmental Benefits of Ecotourism

Similar to social programs being introduced with increased revenue, ecotourism should also lead to greater conservation efforts. When the economy is dependent on natural beauty and ecological diversity, preserving these features is imperative for the industry's sustainability. In this way, individuals become dependent on the environment for their income and are therefore directly invested in its preservation (Trejos, Chiang, & Huang, 2008).

In addition, ecotourism should provide indirect motivation for conservation by increasing awareness of environmental issues among both locals and tourists. Researchers studying ecotourism in the Osa Peninsula found that 37.5% of non-tourism workers had extracted resources from the forest in the past year, compared to only 17.5% of those in ecotourism, illustrating that ecotourism workers have a deeper respect and appreciation for the environment (Hunt, Durham, Driscoll, &

Honey, 2015). One major success of the ecotourism industry has been to reverse some of the deforestation caused by large-scale agriculture and livestock grazing (Almeyda, Broadbent, Wyman, & Durham, 2010). In addition to direct increases to forest cover, eco-lodges and other ecotourism businesses have helped the environment through increased monitoring, protection of endangered species, and education of employees, tourists, and citizens.

There are of course potential drawbacks associated with bringing large numbers of foreign visitors to a region. Two of the most significant impacts are increased solid waste generation and increased land development for constructing tourist facilities (Koens, Diperink, & Miranda, 2009). To avoid these problems, it is important that businesses work together to support the environment. Alternatives to conventional hotels such as eco-lodges choose to invest in programs such as recycling, composting, and proper waste management. However, these are additional costs that landowners must consider before developing their property in an environmentally conscientious fashion before developing their property in an environmentally conscientious fashion (Stem, Lassoie, Lee, & Deshler, 2003). In general, both ecotourism and environmental conservation are community efforts that go hand in hand.

### **2.3. Combining Agriculture and Ecotourism**

In addition to the established industries of agriculture and ecotourism, a precedent exists for combining the two in an emerging industry known as agro-ecotourism. This combination of two strong industries offers incredible potential to better the lives of small-scale farmers by providing new sources of income without the need to abandon their livelihood. A study at the Technological Institute of Santo Domingo defined agro-ecotourism as “a set of rural activities, including participating in farming activities; exploring local culture; enjoying the landscape and agro-biodiversity; observing organic and conventional agricultural practices; and sampling tropical fruits and vegetables” (Catalino & Lizardo, 2004). This definition highlights some of the primary draws for potential tourists. Because of the abundance of natural resources and agricultural production in Costa Rica, there is a clear opportunity for this type of tourism.

Due to their remoteness, rural areas have limited options for economic development, making crops their principle means of income. According to a study in Kedah, Malaysia, agro-ecotourism in the form of homestays was a viable solution in enhancing rural lifestyles, stimulating the economy, and providing additional means of income for more isolated farmers. Kedah is one of

the poorer and least developed regions in Malaysia, with a gross monthly household income that is significantly less than the mean of the country. Despite this, they were able to take advantage of their vast cropland and use their resources to form an agribusiness using value-added products (Liu, 2006). Examples such as this show that agro-ecotourism can be an effective solution for struggling rural economies through the use of value-added products.

### 2.3.1. Value-Added Products

A value-added product is defined by the USDA as having its value enhanced, often by being produced organically or having its physical state changed in some way. This can be achieved in ways such as making berries into jam, milk into fine cheeses, or milling wheat into flour. By offering value-added products, farmers can improve their profitability by opening new markets, enhancing public appreciation for their goods, and extending their marketing season (USDA, 2015).

The potential of value-added products is illustrated by the USDA's Value Added Producer Grant (VAPG) program that aims to help small or medium sized farms generate new products, expand marketing opportunities, and increase income. While independent producers, farmer-cooperatives, and producer-based business ventures are all eligible to apply for this program, socially disadvantaged or family farms receive priority. Upon receipt of a grant, farmers are encouraged to use the funds for processing costs, advertising expenses, as well as some inventory and salary expenses (USDA, 2015).

The use of value-added products in agro-ecotourism has a variety of benefits beyond increasing revenue, especially with respect to improvements in social and environmental policies and practices. Linking organic agriculture with agro-ecotourism can maximize the economic benefit of the organic agriculture and is environmentally sustainable. By creating a symbiotic relationship between organic agriculture and the tourism industry, the local economy will benefit as tourists and locals develop an increased interest and confidence in value-added products (Kuo, 2006). Such an industry can set in motion positive economic growth while remaining environmentally sustainable and supporting the longevity of Costa Rica's farming heritage.

### 2.3.2. Importance of Cooperation

In addition to developing their own businesses through methods such as value-added products, cooperation between farm owners can have benefits for individual farms. While it is



natural for members of the same industry to compete for customers and revenue, a strategic alliance has been shown to be successful. One such example is the wine tourism industry in Southwest Michigan, where numerous wineries have used joint marketing to create a unified experience for tourists (Wargenau, 2006). By having a set itinerary for tourists to follow through a well-defined region, the wine products are jointly promoted. A tourist is much more likely to visit a planned route with numerous sites to visit rather than a single destination. In addition to fostering interest in the wine products, other local businesses in the region associated with it, such as restaurants, lodging, craft makers, and other retail also gain recognition. Tourism routes such as these have been shown to pay off in the long run for the economy and the community despite initial start-up costs (Wargenau, 2006). The cooperation of businesses along a tourist route is more beneficial to the region than competing individual farms attracting tourists.

### 2.3.3. Farmers Markets

An effective method for farmers to gather in a mutually beneficial scenario is through the use of a farmers market. This is a viable way for small farmers to sell their products and engage the community with their farms. According to a study in the United Kingdom, bypassing the middlemen in the food supply chain has many potential benefits to both the farmers and consumers. By supporting local producers, consumers stimulate the local economy while receiving fresh, healthy, and often organic products. Through the use of direct marketing, farmers are also advertising their products for continued success in the market, while remaining at an affordable price for the local consumers. In addition to these benefits, farmers markets also are advantageous to the environment by reducing the distance that food travels between the farmer and the consumer (Holloway, 2000). Therefore, farmers markets are a practical method of decreasing environmental pollution while simultaneously increasing income for the small farmer.

## 2.4. El Ministerio de Agricultura y Ganadería

El Ministerio de Agricultura y Ganadería (MAG), which translates to The Ministry of Agriculture and Livestock, is a Costa Rican government body dedicated to serving small and medium scale farmers and supporting their livelihood. MAG's mission statement asserts that their primary objective is to preserve the dignity of producers in rural areas. This is accomplished through assistance with business management, programs instructing farmers in technical skills, and education

related to greater sustainability in production systems (MAG, 2016). MAG also values assisting farmers in meeting the bottom line and increasing profits. Within MAG's "Plan Estratégico 2015-2018," the document highlights their ongoing efforts to promote healthy competition between agricultural producers to support continued local development strengthen the position of agriculture in the economy (MAG, 2016). Currently, MAG is focusing its attention on individual regions of Costa Rica to examine whether the creation of agro-ecotourism activities can contribute to the goals of their mission statement through education about sustainability for tourists and increased revenue for farmers.

#### 2.4.1. Agro-Ecotourism Route

Our team worked with MAG to create an agro-ecotourism route through the district of Copey located within the canton of Dota. Copey, as seen below in the map of Dota in Figure 6, is located approximately two hours by car from the capital of San José within a heavily forested region of the country. Hosting a population of about 700, the farmers of Copey specialize in fruits, livestock, and value-added products. We identified local farms and agribusinesses to be included in Copey's agro-ecotourism route with the goal of attracting tourists to the region to tour farms, sample products, and participate in other agricultural activities. An agro-ecotourism route sponsored by MAG can yield many benefits for the farmers as well as other tourism related businesses along the way, such as restaurants and agribusinesses. In the next chapter, we will describe the methods used in achieving this goal.

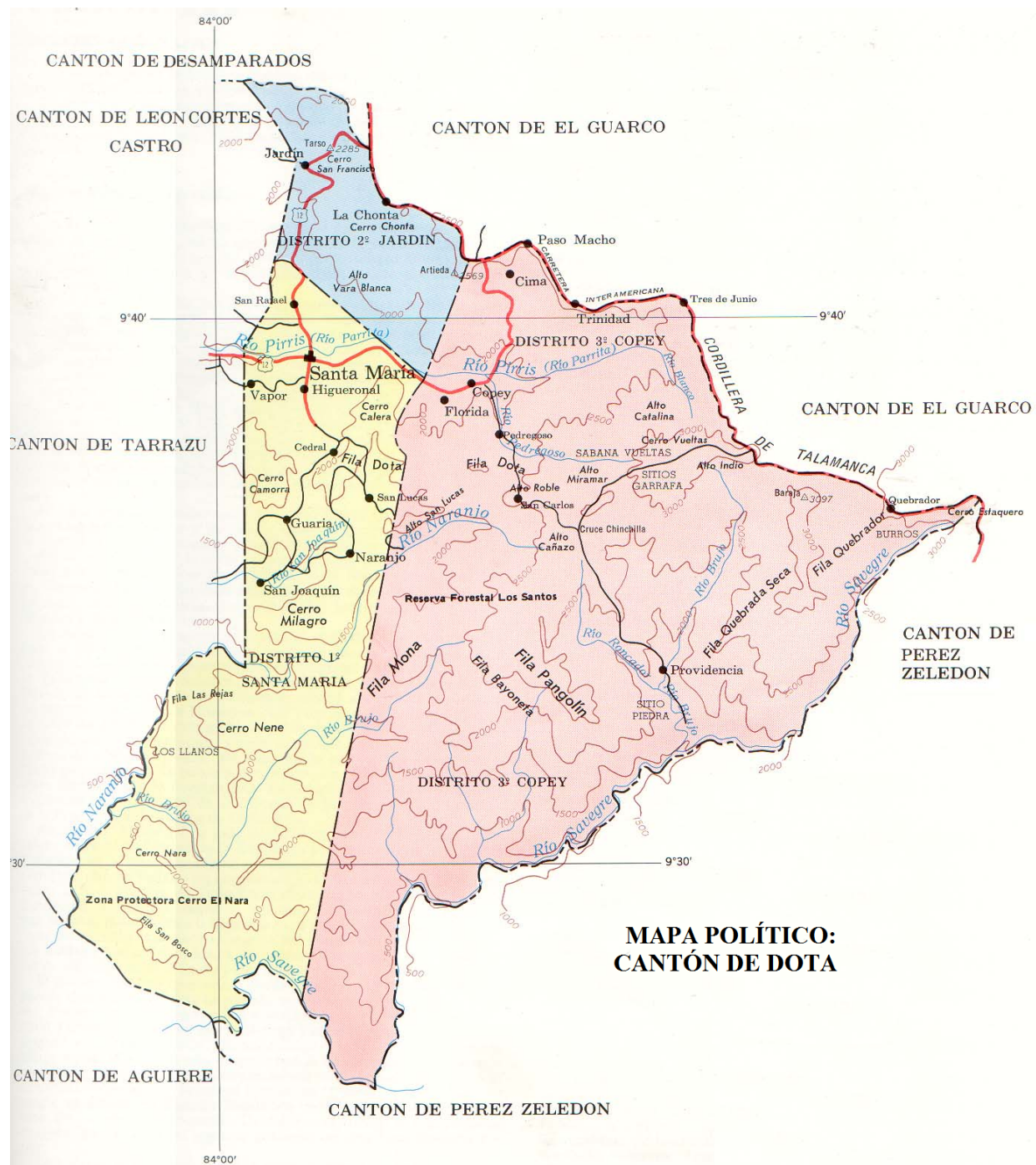


Figure 6: Canton of Dota, Costa Rica

## Chapter 3. Methodology

The goal of this project was to develop the foundation for an agro-ecotourism route connecting farms in the Copey de Dota region in order to raise awareness of sustainable farm practices and increase revenue for the farmers. We worked with the Ministry of Agriculture and Livestock (MAG) to accomplish the following objectives:

1. Determine characteristics that make farms most suitable for tourism.
2. Analyze the current capabilities of individual farms and the region as a whole for supporting tourism.
3. Determine appropriate regional development strategies for the agro-ecotourism route.
4. Assist MAG in determining effective outreach and promotion strategies for the agro-ecotourism route.

In this chapter, we discuss the methods we used in order to achieve each objective. We provide logical justifications for each chosen method including what data we collected and how it relates to the corresponding objective.

### 3.1. Objective 1: Determine characteristics that make farms most suitable for tourism.

In order to provide recommendations for the farmers of Copey, we created criteria to assess individual farms according to their ability to participate in agro-ecotourism. We drafted an initial list of characteristics we wanted to learn about during our visits to the farms then collected data and refined our criteria based on what we encountered. Our data on the farms in Copey were obtained through interviews with the farmers and observations made during walkthroughs of farm properties.

#### 3.1.1. Farmer Interviews

Before being able to choose appropriate categories to compare and analyze farms, we first needed to learn about what specific qualities are necessary for a farm to support tourism. To do this, we conducted semi-standardized interviews with the farmers during our visits. In these interviews, we acquired data on crops grown, number of employees, size of the farm, and other topics. We also discussed intangible characteristics of the farm such as the farmers' potential ambitions to be included in the route and what improvements they are planning to make on their farms, openness to agro-ecotourism, and other farm characteristics. We chose semi-standardized interviews since our

conversations with the farmers were causal and occurred as we were touring their farms. According to *Qualitative Research Methods for the Social Sciences*, the semi-standardized interview allows the interviewer to have prepared topics to discuss while also giving the flexibility to ask additional probing questions as they came up (Berg & Lune, 2007). We also wanted to ask site-specific questions rather than a predetermined set of questions that may not apply to the particular farm. By having no set order of questions, we were able to direct the conversation to cover a variety of topics. Often, the farmers provided answers to our questions through conversation before we even specifically asked. The questions in Appendix A served as the basis for these interviews, with some questions asked directly and others answered during conversation.

### 3.1.2. Recording Observations

Through visits to the farms in Copey, we visually acquired data on farm characteristics, taking detailed notes on aspects we believed would be beneficial or detrimental to tourism. Data was recorded in notebooks that we took with us to the farms and these notes were then typed up and organized online for later use. While our notes were used to create the final categories for assessment, we started with some ideas of potential categories of interest. These initial categories were safety, family friendliness, product variety, infrastructure, aesthetic appeal, potential for expansion, pathways, variety of crops, condition of central building, condition of equipment, road access, parking, access to restrooms, and overall environment. By taking notes and interviewing farmers, we were able to combine some of these elements into broader categories, add ones we had not considered, and remove some that did not turn out to be as important as we anticipated. We discuss how these categories were used to assess farms in the next section.

## 3.2. Objective 2: Analyze the current capabilities of individual farms and the region as a whole for supporting tourism.

Our team created a Farm Assessment Matrix (FAM), described in detail in the findings chapter, to identify the strengths and weaknesses of each of the farms that we visited. The matrix is broken up into a series of categories consisting of accessibility, paths, signs, products, sustainable practices, additional features, and nature. A check mark is used in each category to signify the presence or lack of that specific detail at the farm in question. These marks were tallied so that we could visualize which farms had the most details. This analysis allows for an easy comparison of

farms based upon a qualitative analysis. We then organized these categories into more specific details to be as thorough as possible. For example, the additional features category was divided into more specific details, which are trout fishing ponds, restaurants, cabins, and hiking trails. By starting broadly in each category and getting more specific as we became familiar with what aspects make a farm tourism friendly, we could pinpoint what each farm has and lacks.

When we proposed recommendations about how certain farms in the route can improve to fulfill more details of the FAM, it was important to consider how these changes can help the route thrive. For each chosen category in the FAM, we identified which farm satisfied the most details of that category. We then were able to describe how an individual farm can serve as an example to the others. The comparative analysis between farms allowed us to then determine regional development strategies as described in the following section.

### **3.3. Objective 3: Determine appropriate regional development strategies for the agro-ecotourism route.**

The FAM allowed us to determine which farms are most developed in each respective category. Using this tool, we identified details in each category that multiple farms in the region lacked and areas of focus to improve the region as a whole to support tourists. We also used additional interviews with farmers to find out about their future plans for renovations and aesthetic changes. Through these methods, we were able to gain insight into what form of a route would be best for Copey and what changes are needed to realize this vision.

#### **3.3.1. Understanding the Farmers' Perception**

We used a semi-standardized interview approach to ask farmers about what they envision their role in the route to be. By asking the same questions to each potential route member, we kept consistency while allowing them to digress if they liked to or stick to the questions if they did not wish to elaborate. The questions we used, which can be found in Appendix B, focused on past tourism and their willingness to make changes.

During these interviews, we aimed to determine what ideas farmers already have for changes to their farms. It is necessary that farm owners and employees be involved in the process of renovation so that they do not feel that other people are coming in and trying to instate changes that they may not agree with. The topics that we discussed during these interviews include signs directing

visitors to the farm, further development of paths through the land, increased usage of sustainable practices, general renovations, and even new additions such as cabins and restaurants. These interviews allowed us to gain insight into the future of farms in Copey.

### 3.3.2. Regional Development

By identifying the farms that excel in each category, we were able to make informed recommendations about how other farms can emulate their characteristics, thus improving the region as a whole. This process allowed us to see that each farm thrives in different areas and has a unique contribution to the route based on its strengths. During our walkthroughs of farms, we acquired GPS data to design a map. This necessary component of regional development is both a useful tool for tourists and a way for us to organize which farms and businesses wish to be a part of the route.

## 3.4. Objective 4: Assist MAG in determining effective outreach and promotion strategies for the agro-ecotourism route.

In order to capitalize on a developed agro-ecotourism route, we proposed a strategy to effectively market the route to potential tourists. To be able to come up with marketing ideas to propose to MAG, we first collected data to determine how MAG currently achieves public outreach. Additionally, we discussed with Copey farmers what their current plans are for marketing the route as well as what they see fit as the best marketing strategy.

### 3.4.1. MAG Data Collection

We wanted to understand how MAG uses its website to promote events, the range of content that MAG posts on social media, and the work related to the public relations department. To do this, we acquired data on the current capabilities for spreading the word on the route from a MAG employee, Omar Somarribas. The questions that we asked him are located in Appendix C.

### 3.4.2. Dota Software Engineer Data Collection

During our investigation into appropriate promotion techniques for the route, we were put into contact with Johan Brenes, who is in charge of the website to promote the Dota region. We

wanted to know about the process to create a website in order to promote the agro-ecotourism route for Copey. We asked questions concerning how the website would be made and if he would be able to construct it for us. The questions we asked Mr. Brenes are located in Appendix D.

### 3.4.3. Additional Data on Rural Tourism

Finally, we reached out to various tourism agencies in Costa Rica to acquire statistics and other information on rural tourism. As many of these agencies have conducted their own research into what constitutes a successful tourism operation, we sought to use some of this data to support and build upon our own research. We conducted interviews via phone and email to determine which methods of marketing are most successful and which activities associated with rural tourism are most popular. Additionally, we solicited information about overall interest in rural tourism and ideal improvements to farms and agribusinesses. The questions we asked these agencies can be found in Appendix E. These interviews were also an opportunity to discuss the possibility of partnerships between the agro-ecotourism route in Copey and tourism agencies. We gathered contact information to give to project leaders in Copey to facilitate these connections.



## Chapter 4. Findings

In the northern part of the Los Santos Forest Reserve lies the small farming district of Copey. Part of the canton of Dota, Copey is a two hour car ride south of San Jose. The main road into town passes by an English learning center for children, lodging, restaurants, a central supermarket, and homes. There is a Catholic church located in the center of town on the same property as the local high school. The majority of the 700 people living in Copey work on the area's approximately thirty farms that sprawl up on the surrounding mountains. Crops in the region include avocados, granadillas, peaches, blackberries, bananas, and many others. Figure 7, below, shows the center of town as well as the location of each of the farms we have visited as part of our research. These locations were determined using GPS data while touring the farms. In this chapter we first give descriptions of each farm to provide context for our findings. These findings and general observations from fieldwork are broken down thematically to explore the important characteristics of a farm to support tourism before finally providing support for tourist interest in rural activities.

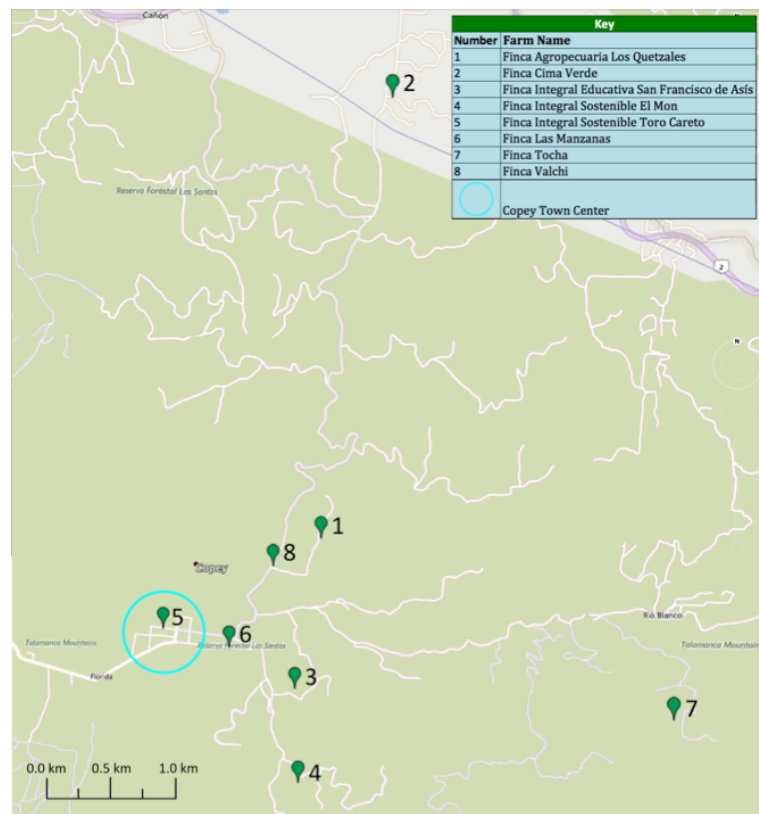


Figure 7: Farm locations in Copey

### 4.1. The Farms

The data gathered from our farm visits allowed us to identify the essential characteristics of a farm that provides tourism opportunities and use these characteristics to assess and compare farms. Ultimately, we used our analyzed data to create recommendations for the concept of the route and for individual farms to make improvements to be better suited for tourism. Below, we give a brief description of each farm included in the route.

#### 4.1.1. Finca Agropecuaria Los Quetzales

Finca Agropecuaria Los Quetzales features a wide array of different crops including coffee, grapes, strawberries, blueberries, figs, peaches, and many others. In addition to agriculture, this farm also features a waterfall and a series of brooks within hiking distance from the farm. It is owned by Ronald Valverde and located approximately 1.5 km north of the center of Copey.

#### 4.1.2. Finca Cima Verde

Finca Cima Verde is located approximately 4.5 km away from the center of Copey. This 14 hectare farm features granadilla, blackberry, uchuva, naranjilla, and curuba. Granadilla is the main crop and is extensively grown. The farm owner, Norman Chinchilla, has been using exclusively organic practices (besides apples) for one year and is working towards Bandera Azul certification, which will be discussed later in this chapter.

#### 4.1.3. Finca Integral Sostenible ElMon

Finca Integral Sostenible ElMon is located approximately 2 km south from the center of Copey. This farm grows avocados, apples, peaches and coffee, and apples. This farm also possesses a large number of cows which they use to produce yogurt and cheese, which are sold in Copey and Santa Maria. The owner of the farm, José Elizondo, is currently in the process of applying for Bandera Azul certification. The farm property also features a waterfall hike.

#### 4.1.4. Finca Integral Educativa San Francisco de Asís

Finca Integral Educativa San Francisco de Asís, run by Seidy and Danilo Rodriguez, is a farm located within walking distance from central Copey. This farm features 20 processes including growing products such as avocados, kale, apples, and medicinal herbs as well raising cows, horses, goats, lambs, sheep and geese. The owners focus on traditional Costa Rican crops and cuisine. The farm provides pamphlets to visitors describing what it means for a farm to be integrated and how they use mountain microbes. The farm also is near completion on the construction of a restaurant that will serve traditional Costa Rican meals.

#### 4.1.5. Finca Integral Sostenible Toro Careto

Finca Integral Sostenible Toro Careto, run by Osvaldo Rodriguez, is located in central Copey. The farm grows avocados, coffee, plums, peaches, naranjillas, and has a small section of land dedicated to testing certain sustainable practices. Mountain microbes are extensively used as organic fertilizers, pesticides, and fungicides. The farm also has a pond for trout fishing located right in front of a restaurant.

#### 4.1.6. Finca Las Manzanas

Finca Las Manzanas, located in the center of Copey, is an apple farm owned by Olman Serrano. The farm also grows avocados, peaches, plums, granadillas, and many other fruits. Finca Las Manzanas is considered a pioneer of tourism in Copey as the farm has been giving fruit tours for the past ten years. There are also four cabins on the property for tourists to stay overnight.

#### 4.1.7. Finca Valchi

Located a short walk from the center of Copey, Finca Valchi is owned and operated by a couple whose last names, Valverde and Chinchilla, gave rise to the name of the farm. Walking onto the property, there are immediately a few points of interest including a cabin, a pond for trout fishing, and a restaurant that is not currently in use. The farm is organic and grows blackberries, tomatoes, granadillas, avocados, and other fruits.

#### 4.1.8. Finca Tocha

Finca Tocha, owned by Alvaro Torres, is approximately 4 km east of the center of Copey in the neighborhood of Río Blanco. The farm is comprised of 42 hectares of land, 15 of which are cultivated. The fruits grown here include blackberries, peaches, plums, granadillas, papayuelas, and especially apples and avocados. Currently, the farm receives about three groups of visitors annually, who come to hike through the plantations and pick their own fruit to sample. Future plans for improvement include construction of three cabins, increased parking, and further development of hiking trails.

## 4.2. Farm Assessment Matrix (FAM)

In terms of being able to accept tourists, there is a wide range of preparedness from farm to farm, where some are mostly ready and others still require a great deal of work. In order to analyze the characteristics and capacity for tourist activity of different farms we visited, we created the Farm Assessment Matrix (FAM) shown below in Table 1. This matrix was used to make comparisons between different farms and assess readiness of individual farms for tourism based on each category. In the following sections we discuss each of the matrix categories in greater detail.

Table 3: Farm Assessment Matrix (FAM) used to compare characteristics of Copey farms

Category	Detail	Farms								Check Count
		Finca Integral Educativa San Francisco de Asis	Finca Integral Sostenible Toro Carreto	Finca Valchi	Finca Tocha	Finca Agropecuaria Los Quetzales	Finca Integral Sostenible El Mon	Finca Cima Verde	Fincas Las Manzanas	
Accessibility	Walking distance from Copey center	✓	✓	✓		✓			✓	5
	Designated parking		✓							1
	Accessible without all-wheel drive	✓	✓	✓				✓	✓	5
Paths	Presence of defined paths	✓	✓	✓	✓		✓	✓	✓	7
	Lacks obstacles	✓	✓	✓	✓					4
	Path free of dense and/or thorny vegetation	✓	✓		✓					3
	Lack of trash	✓	✓	✓	✓	✓	✓		✓	7
	Paths free of animal waste	✓	✓	✓	✓	✓		✓	✓	7
	Traction on steep hills			✓	✓		✓	✓	✓	5
Signs	Directional signs pointing to areas of interest									0
	Signs labeling plants	✓							✓	2
	Signs labeling organic practices	✓								1
	Detailed educational signs explaining farm processes									0
	Warning signs (electric fences, barbed wires) or none needed									0
	Arrows/markers for tours or hiking trails						✓		✓	2
	Signs labeling animals	✓								1
	Farm name sign		✓	✓					✓	3
Products	Fruits	✓	✓	✓	✓	✓	✓	✓	✓	8
	Medicinal herb garden	✓								1
	Farm animals	✓	✓				✓	✓		4
	Dairy production	✓					✓			2
	Value-added products	✓			✓		✓			3
Sustainable practices	Mountain microbes used	✓	✓				✓			3
	Biodigester	✓	✓				✓			3
	No agrochemicals used			✓		✓				2
Additional Features	Tourists can interact with animals	✓								1
	Trout fishing ponds		✓	✓						2
	Restaurant	✓	✓	✓						3
	Cabins			✓					✓	2
	Hiking trails				✓		✓			2
Nature	Waterfalls					✓	✓			2
	Scenic views	✓	✓	✓	✓	✓	✓	✓	✓	8
<b>Count Totals</b>										
Accessibility (max 3)		2	3	2	0	1	0	1	2	
Paths (max 6)		5	5	5	6	2	3	3	4	
Signs (max 8)		3	1	1	0	0	1	0	3	
Products (max 5)		5	2	1	2	1	4	2	1	
Sustainable Practices (max 3)		2	2	1	0	1	2	0	0	
Additional Features (max 5)		2	2	3	1	0	1	0	1	
Nature (max 2)		1	1	1	1	2	2	1	1	
Total check count (max 32)		20	16	14	10	7	13	7	12	

#### 4.2.1. Accessibility

Accessibility to the farms directly impacts the likelihood and quality of tourists' visits. Finca Integral Sostenible Toro Careto is the only farm in the matrix that had all three accessibility characteristics. This farm is within walking distance of the center of Copey, had designated parking, and lacked the need to drive up a steep hill. The presence of these characteristics is important because they accommodate the widest range of people visiting Copey. A farm possessing these traits is more likely to be visited than a farm farther away from the town center, without parking, or with terrain that makes it difficult to enter. It is important to recognize that not all farms need to possess all noted characteristics, and distance from Copey is a fixed characteristic. However, farmers should be aware of what traits their farm has and how it can affect their participation in the route.

#### 4.2.2. Paths

An important component of infrastructure for agro-ecotourism is the presence of easily maneuverable paths to connect the main sections and activities of the farm and allow tourists to explore the farms in a guided manner. Without clearly established paths, tourists risk getting lost or hurt due to a misstep caused by difficult



Figure 8: Example Path at Finca Tocha

terrain. We identified four farms that have very high quality paths, possessing almost all of the positive traits in the FAM's path category, as seen in the matrix above. The farm that we found to have the best path system is Finca Tocha. These paths are particularly well defined and make it easier to walk to the different areas of the property compared to paths on other farms that are not as wide, lack traction on uphill sections, or have significant debris that hinder movement. An example of one of the paths on Finca Tocha is shown above in Figure 8. Well-defined paths are beneficial to the tourism experience because visitors can focus on enjoying the farm rather than avoiding obstacles while walking around.

### 4.2.3. Signs

Coupled with paths, effective signs are necessary for directing a tourist through the farm while also identifying and connecting specific points of interest on the farm. Of the eight farms assessed, only two fulfilled more than one of the specific details under the signs category in the FAM. The other six farms either did not have any usage of signs at all or only had one type.

Finca Integral Educativa San Francisco de Asís is the farm with the most effective use of



Figure 9: Sign at Finca Integral Educativa San Francisco de Asís

signs on the premises. Each section of the farm is clearly labeled, including animal holdings, plots of

land for crops, and sustainable processes. Examples of signs featured are “La Compeстера,” “La Cabreriza,” “El Manzanal,” which roughly translate to “compost,” “goat house,” and “apple orchard.” An image showing one of these signs is located in Figure 9. Finca Las Manzanas is another farm that has effective use of signs. In addition to a street-level sign with the name of the farm, smaller signs label the Spanish and English names of the different types of fruit. There are also



Figure 10: Signs at Finca Las Manzanas

signs designating the beginning of the path and arrows indicating which way to continue. These signs are shown in Figure 10. By identifying processes, animals, and crops of the farm, various types of signs facilitate a positive tourist experience because they can engage and educate visitors by identifying the importance of each area of the farm.

Simple yet useful signs are present on Finca Valchi and Finca Integral Sostenible Toro Careto that state the name of the farm at the entrance. Shown below, these two farms also have signs on the main road coming



Figure 11: Toro Careto directional sign

from Santa María towards Copey. As shown above in Figure 11, the Toro Careto sign provides the name, telephone number, and distance of the farm. Incorporating these types of signs throughout the region is beneficial for the route because they attract and guide tourists.

#### 4.2.4. Agricultural Products

High-altitude fruits such as avocados, granadillas, and blackberries are the specialty of farms in Copey. Sampling these fruits is a major draw for tourists, especially since international tourists may never have heard of some traditional Costa Rican fruits such as granadillas or chiverres. While several farms offer fruit tours, Finca Las Manzanas has the highest yield of tourists with approximately four groups per month. One likely reason for this farm's success is the great diversity of fruits, including different varieties of avocado.

While diversity of crops within a single farm is important, it is also not ideal for all farms in the route have the same set of crops. An example of a farm showing crop diversity is Finca Integral Educativa San Francisco de Asís, which has an herb garden containing mint, lavender, and other medicinal plants, as shown in Figure 12. There is no such garden on any other farm. Variance in crops grown between farms ensures that tourists visiting multiple farms have a distinct experience at each location. In this way, growing unique or less common crops makes tourists more likely to visit a particular farm and benefits the route as a whole.



Figure 12: Medicinal herb garden at Finca Integral Educativa San Francisco de Asís

In addition to fruits, three of the eight farms surveyed raise livestock. Most common are cows and horses, but Finca Integral Educativa San Francisco de Asís also has sheep, goats, chickens, and geese. This farm not only has more types of animals, but also has areas where tourists can interact directly with the baby goats. The owner, Seidy Rodriguez, indicated that she is especially interested in family tourism, and farm animals often attract young children (S. Rodriguez, personal communication, April 5, 2016). The diversity of animals is a great asset to this farm and to the overall route, as visitors to the route may visit one farm to sample the fruits and then come here to see the animals. Other farms with animals, namely Finca Toro Careto and Finca Integral Sostenible



ElMon, can follow this model by keeping pens clean and accessible and, if safe, offering opportunities to pet or feed the animals.

Another way farms diversify the products they offer is through value-added products. Mostly, we found that value-added products such as wines, jams, and cheeses are produced by local small-scale agribusinesses that make use of raw goods from local farms. However, some farms do further process their own products. For example, Finca Integral Sostenible ElMon makes cheese and yogurt from the milk collected from its dairy cows. As with crops and animals, these specialty products help farms stand out and bring greater diversity to the route as a whole. Furthermore, value-added products offer the producer an opportunity to engage in educational tourism, teaching visitors about the process.

#### 4.2.5. Sustainable Practices

Farms in general do not have to be environmentally conscientious to be successful, however the farms included in an agro-ecotourism route must have sustainable practices. Many sustainable farms in the Copey identify themselves as integrated, a term that refers to when various processes are connected and complement each other. For example, manure from livestock is used to fertilize crops, and some of the crops are used to feed the livestock. This circle of self-sustainability is best illustrated by Finca Integral Educativa San Francisco de Asis, where there are twenty interconnected processes. None of these processes use outside resources, aside from apples, which require agrochemicals to induce a cold state in order to fully develop.

Another sustainable technique uses microorganisms obtained from the local soil combined with organic waste materials from the farm to make fertilizers, insecticides, and fungicides. Many of these mountain microbe materials replace traditional agrochemicals, making pest control and fertility maintenance on the farms organic and sustainable through the use of natural and renewable materials. The existence of sustainable practices will allow for the successful creation of the agro-ecotourism route in which tourists can learn about these ideas and how they are incorporated on each farm.

#### 4.2.6. Additional Features

A farm that successfully entertains tourists often offers other attractions besides just a tour of the farm. By having amenities such as trout fishing, hiking, restaurants and cabins, farmers can

extend the period of time tourists are spending in Copey and help them create positive memories about tourism in Copey they can share with others.

Of the four amenities listed above, six out of eight farms had at least one additional feature. Without these features present in the route, tourists may feel limited in what recreational benefit they get out of their visit. With the inclusion of attractions such as trout fishing, hiking, and farm-to-table restaurants, tourists can take a more active role while visiting the farms by catching fish, taking in scenic views on a hike, and tasting the products of the farms they visited.

In addition to entertainment options, it is important to consider that tourists may wish to spend the night in the region. The town of Copey has options for overnight stays as well as two farms with cabins for hosting tourists. Additional lodging options offer a different experience than staying in town as well as more freedom over how they customize their schedule based on where they stay the night. Also, the presence of cabins on farms provides Copey with a larger capacity for hosting tourists on any given night. Without this option, visitors may not be able to stay for more than a day if all accommodation options in town are booked.

#### 4.2.7. Nature

All of the farms in the Copey region offer views of the vast mountains and farmland, allowing tourists to have scenic views no matter which farm they are visiting. Finca Agropecuaria Los Quetzales and Finca Integral Sostenible ElMon have an additional draw because of the presence of a waterfall on the property within hiking distance. It is important to highlight unique features because it can entice tourists to come to these two farms, and therefore to the region as well.

#### 4.3. Model Farms

Finca Integral Educativa San Francisco de Asís has the highest score in our farm assessment analysis and thus is our first model farm. The farm has some of the most established paths, which are free of obstacles, dense vegetation, animal waste, and trash. This farm also has the highest FAM score in terms of signs. The hand carved signs label most of the plants and organic practices on the premises. The farm is also easily accessible, as it is a short walk from the center of Copey and does not require travel up any steep hills. Finca Integral Educativa San Francisco de Asís is the only farm to have all five of the products listed in the FAM, which are fruit, a medicinal herb garden, farm animals, dairy products, and value-added products. The final detail that makes this farm a model for

the region is the presence of a restaurant. This additional feature will help bring tourists in and encourage them to stay for longer periods of time due to the availability of cuisine.

The second highest rated farm, Finca Integral Toro Careto, had sixteen positive characteristics in the FAM. Just like the first farm, Finca Toro Careto has well defined paths that would allow tourists to travel around the farm. In addition, this farm is the only farm in our assessment that fulfilled all three details of accessibility: within walking distance of Copey center, the presence of designated parking, and the lack of steep hills to get to the farm. Similar to the first model farm, Toro Careto utilizes mountain microorganisms and a biodigester as a part of their farming activities. This farm is one of three farms that has both of these processes. These can be shown to tourists in order to promote the farms’ sustainable activities and to show how sustainable farms operate in a way that each activity complements the others. Additional activities at this farm include a fully stocked trout pond and a restaurant. Finca Toro Careto is one of two farms that had these extra activities available for tourists at the time of our visit.

#### 4.4. Evidence for Tourist Interest

Expanded tourism in Copey will not thrive unless significant tourist interest exists. Having identified the strengths and areas of improvement for individual farms and the region as a whole, we spoke with farms and businesses that already receive frequent tourists and interviewed

**Table 4: Estimate of non-resident tourists participating in rural tourism**

Year	Number of tourists	%
2006	45,582	3.7
2007	54,280	4.0
2008	49,669	3.5
2009	72,910	5.5
2010	99,414	7.0
2011	122,975	8.4
2012	163,030	10.5

representatives of local tourism agencies. Sandra Monge, a rural tourism specialist at the Instituto Costarricense de Turismo (ICT) provided us with statistics, given in Table 4, which show that the number of tourists participating in rural tourism more than tripled between 2006 and 2012 (ICT, 2013). She also told us that popular activities in rural tourism include fruit tours, hiking, and artisanal cheese production, all of which are offered in Copey (S. Monge, personal communication, April 25, 2016). Areas such as San Gerardo de Dota have already

had success with these activities, and this substantial tourist interest indicates potential for parallel success in Copey.

We also interviewed Carlos Marín, owner of Santos Tours, a local tourism agency in Santa María de Dota. Santos Tours offers two relevant tours: the Fruit Tour and the Biocoffee Adventure. The fruit tour provides an opportunity for tourists to sample traditional Costa Rican fruits, eat an authentic local lunch, and admire the natural beauty of the area. The Biocoffee Adventure tour focuses on the history and process of coffee production in the area. These are similar to what farms and agribusinesses hope to emulate by teaching visitors about the process of turning raw goods into value-added products. Rita Segura, owner of Jabones Atir, is currently renovating the workshop where she makes artisanal soaps. She told us in an interview that she plans on having signs and images teaching visitors about the history of the use of chocolate among the indigenous people of Costa Rica, since soap made from chocolate is one of her specialties (R. Segura, personal communication, April 12, 2016). This sort of educational tourism parallels the types of tours that are already successful. Organizations that offer such tours include Santos Tours locally and many others, such as Don Juan Coffee and Chocolate Tours in Monteverde, on the national level.

Trout fishing is a growing industry in Copey, with numerous businesses already offering this activity and multiple farms working on constructing lakes to be stocked with trout. Elena Elizondo, owner of Restaurante La Vereda, told us that she receives visitors, both from Costa Rica and other countries, every weekend and sometimes on weekdays, often in groups of 20-30 or more (E. Elizondo, personal communication, April 25, 2016).



**Figure 13: Trout fishing pond at Pesca Deportiva Río Blanco**

Similar statistics were reported by Martín Hernández, owner of Pesca Deportiva Río Blanco, a recreational trout fishing farm shown in Figure 13, indicating a strong tourist interest in this activity (M. Hernández, personal communication, April 25, 2016). Moreover, Mrs. Elizondo told us that visitors heard about her business solely through word of mouth (E. Elizondo, personal communication, April 25, 2016). With additional advertising, as discussed in our recommendations chapter, we see a potential for many more tourists to come to Copey to participate in trout fishing and other activities at the various farms and businesses where they are offered.

## Chapter 5. Limitations

Our team only visited eight of the thirty farms in the region because these were the only farms we knew to be interested in the route. This limited our choices in what farms are included in the route. By not visiting all thirty farms, we were not able to confirm any additional interest or opposition to the agro-ecotourism route. Additionally, without visiting all farms in the region, our process for determining farm characteristics for the FAM could have been limited in scope because the traits of other farms in the region could have added to our ideas of what characteristics are important for tourism.

## Chapter 6. Recommendations

The recommendations for further development of the agro-ecotourism route include how to successfully establish the route, ways to market the route to tourists, what businesses to include, and various infrastructural components. This advice is targeted at MAG, community leaders of Copey and farmers included in the route because they are the ones who must make the future plans a reality.

### 6.1. The route should include eateries, agribusiness, and lodging.

Prior to our fieldwork in Costa Rica, the focus of our project was only on including artisanal farms within the agro-ecotourism route. After gathering data by visiting and assessing eight farms in Copey, we found that a majority of them specialized only in growing fruits and not in creating value-added products with their crops. In order to promote the value-added goods of Copey, the route should include eateries and agribusinesses as well as farms. The inclusion of these businesses and restaurants also adds to the overall self-sustainable image of the region because most of the ingredients used in the products come from the farms in Copey.

We visited the six businesses shown in Table 5. After interviewing business owners, we were able to determine that they are in favor of inclusion in the route, seeing it as an opportunity to gain income and stimulate the economy of Copey. We also gathered information about menu items and products they sell, which will be included in the website. The inclusion of these businesses in the route offers more opportunities for visitors to engage in hands-on activities and experience the food built into the culture rather than simply being observers. It also allows tourists to see the end products of crops they previously saw in farms.

While there are a limited number of cabins on farms and others being developed, some tourists may prefer to stay in more developed establishments. Having different options of styles of places to stay can attract a wider range of participants. Additionally, the lodging on the farms in Copey should become more developed in order to allow for more tourists to stay for longer periods of time.

Table 5: Business name and corresponding specialties

Business Name	Specialty
Productos de La Colina	Marmalade Producer
Soda y Panadería Las Manzanitas	Local Bakery
Quesos Maduros Pedregosos	Cheese Producer
Restaurante y Pesca de Trucha La Vereda del Pedregoso	Restaurant specializing in trout
Soda Corazón de Jesús	Restaurant that serves typical Costa Rican casados
Jabones Atir	Soap Producer

## **6.2. The route should be conceptualized as a regional map.**

In the planning stages of our project, we foresaw the main outcome of our work as an agro-ecotourism route consisting of a set itinerary of farms in Copey. As we learned more about the farms and Copey while conducting our research, and as our understanding of the goals of our project evolved, we have come to the decision that the agro-ecotourism route should be presented as a map of a non-linear route including farms and businesses of interest in the area. The map we created includes products available at each farm and highlights activities such as waterfall hikes and trout fishing. This customizable route will target tourists' specific desires by allowing them to choose their own route based on the descriptions provided and their particular interests.

## **6.3. Parking and accessibility in the region should be improved.**

In order to receive a higher volume of tourists, more space should be designated in town for parking. We recommend designating an area along the street adjacent to the church where a few cars could park. Finca Toro Careto, which has a designated parking area, can make improvements by having signs directing tourists to park there. Additionally, Finca Integral Educativa San Francisco de Asís would be a good place to create a designated parking area beside the restaurant because there is open space and relatively flat land. This parking would provide the necessary space for tourists either participating in the route or eating at the restaurant.

Some farms face accessibility issues due to difficult terrain. For farms that have steep hills leading up to their property, especially those that are blocked with gates, we advise that farmers offer transportation for visitors to and from the main road. With accessibility issues addressed, tourists will be able to more easily arrive at the farms and will have a more pleasant experience during their visit.

## **6.4. Farms in Copey should improve infrastructure such as signs and paths.**

### **6.4.1. Signs**

As seen in the FAM in Table 3, the use of signs has not yet been heavily incorporated into the region, indicating the need for improvement in this category before the region is ready for an influx of tourism. Sandra Monge at the ICT explained that well-defined, labeled paths that visitors

can easily walk on without risk of falling are a particularly important element of successful tourist farms (S. Monge, personal communication, April 25, 2016). We recommend that, dangerous areas such as such as electrical or barbed wire fences are indicated through signs, increasing safety for visitors. Farms that have hiking trails can better guide tourists through the appropriate paths with arrows and markers. Each farm should also have signs labeling the animals and crops present on the farm to give tourists simple information that can better their experience. In addition to new signage in the interior of farms, each farm should also have a sign at their entrance as a bare minimum as well as on main roads indicating the distance and direction of each nearby farm, giving tourists a sense of direction as they arrive in the community.

#### 6.4.2. Paths

Many farms in Copey currently have some form of pathways throughout their farm, but their conditions can be improved for tourist visits.

Thick, thorny vegetation and other obstacles should be removed as much as possible to make a clear path for tourists. Another component that could be improved on the paths of many farms is the lack of traction on steep hills. This can be done by adding some type of material to the steeper hills to allow for more traction, with either small concrete slabs lining the side of a steep path like on Finca Valchi as shown in Figure 14.



Figure 14: Path at Finca Valchi

#### 6.5. Farmers should emphasize and improve educational components with brochures and signs.

While a main objective of the route is to increase income for farmers, another important objective is to expand tourists' knowledge of organic and sustainable practices. Finca Integral Educativa San Francisco de Asís has created educational brochures that can be used as a model for additional farms to highlight certain practices. If more farms create brochures, whether on their own or with the help of MAG, they can also contribute to the tourists learning as much as possible, which also benefits the farmers themselves in the long run as tourists are more likely to tell others about the route if they had a rewarding experience.



Incorporating educational signs in the route is another viable way for tourists to learn about sustainable practices throughout the duration of their visit. An example of educational sign usage in Costa Rica that the community of Copey can learn from is in the Don Juan Coffee Tour in Monteverde, as shown in Figure 15. In addition to having a knowledgeable guide show tourists around the plantation, detailed

educational signs show tourists images of each step of the process from picking the berries to brewing it into the final coffee product. We recommend the creation of signs to show the steps involved in sustainable processes such as mountain microorganisms, or the production of cheese, wine, jams, and other value-added goods. A poster with



Figure 15: Educational sign at the Don Juan Coffee Tour

a diagram showing the integral features of the farm and how they form a cycle would also teach tourists and fulfill the farmers' goal of highlighting and sharing their sustainable practices.

## 6.6. Effective marketing strategies for the route are a Copey website, Facebook page, and a farmers market.

### 6.6.1. Website

Before visiting Copey, we were led to believe that there were existing connections via social media between the farmers of the region, and we planned to analyze and improve these connections. After talking to Seidy Rodriguez, the community leader of the region, we found out that minimal connections exist on social media. However, members of the community interested in the route are very connected, and already hold weekly meetings to develop further plans for the route. They recognize the need for collaboration because a route is not possible without organization and planning between different farms. We recommend the creation of a website that will advertise the products of each included farm of the route as well as the route as a whole. Sandra Monge at the ICT mentioned websites as an effective marketing strategy, noting the importance of regularly

updating it and including detailed information on tour packages offered, including prices (S. Monge, personal communication, April 25, 2016).

In addition to the creation of the website, someone must be designated to maintain the website. According to Johan Brenes, multiple people can be given access to edit the content of the website (J. Brenes, personal communication, April 12, 2016). Because the community of Copey and MAG are both vital to the success of continued marketing of the route, we recommend that they both have access. As the community leader, Seidy Rodriguez would be a good representative for Copey's control of the website. As farmers make changes and improvements to their farms, they can contact her to make the appropriate updates, or she can relay these updates to MAG employees.

### 6.6.2. Facebook Page

A Facebook page currently exists for the community of Copey de Dota, but a separate page for the route would be effective. The information featured would be very similar to the website, but could reach a wider audience.

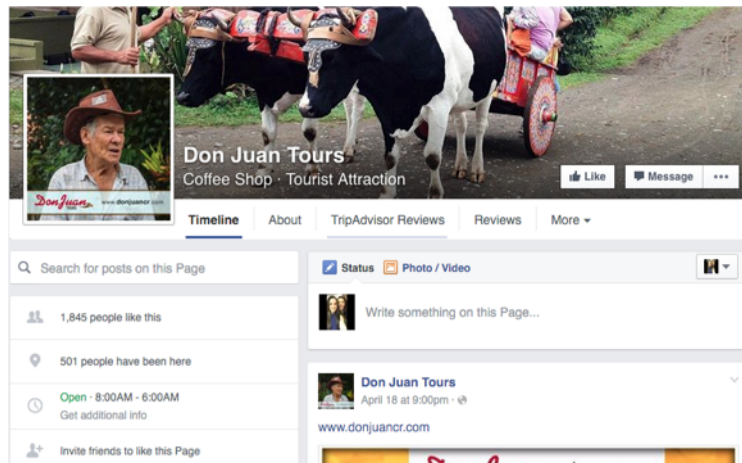


Figure 16: The Don Juan Coffee Tour Facebook Page

The Don Juan Coffee Tour Facebook Page for Monteverde, pictured in Figure 16, is an example of this marketing strategy. As more people like the page, a larger database of people develops that can be advertised to. Members of the page and tourists who have experienced the route can also invite other friends to like the page. In addition, people can write reviews and post pictures of their experience. In the about section, a link to the route website would be included. One benefit of this method of advertisement is that after people have liked the page, they will see updates appear on their newsfeed, rather than having to visit a separate website. By having multiple sources of online advertising, the broadest audience can be reached.

### 6.6.3. Farmers Market

Due to the lack of space at existing farmers markets in San José and Cartago, a farmers market specifically for farmers in Copey would have several benefits. This would allow them to gain an opportunity to sell their products to a larger audience. Mila Guitiérrez, owner of a small cheese factory, is particularly interested and excited at the thought of a farmers market exclusively for Copey farmers. She told us that she has participated in Feria Verde before, but the organizers usually tell her that there is no room for her stand and that the market already features cheese products (M. Guitiérrez, personal communication, April 12, 2016). Although the creation of the farmers market itself is not in the scope of our project, it ties directly back to the agro-ecotourism route because it would be an effective way of promoting the organic and sustainable practices of the region and advertising the route as a whole.

One way that the farmers market can be an opportunity to market the region is through the use of an informational stand, which would include the same information featured on the website. Additionally, a free sample of an artisanal product from a farm, such as a taste of marmalade or cheese, could be given as an incentive for attendees of the farmers market to like the agro-ecotourism route page on Facebook, increasing the route's social media presence.

Two locations we propose for a farmers market are the conference room of the Ministerio de Agricultura y Ganadería's Cartago office and Las Ruinas de la Parroquia de Santiago Apóstol. The former option is owned by MAG, so coordinating with a third party would not be necessary and there would be no cost to use this space. In addition, having an event at a reputable location such as MAG can encourage visitors to attend. The ruins are another potential location due to the fact that it is a well-known location in the center of Cartago surrounded by shops, and it provides an outdoor spot for the farmers market.

### 6.6.4. With the help of MAG, farmers should work towards obtaining organic certifications.

Bandera Azul Ecológica, which translates to "Ecological Blue Flag", is a certification that recognizes the efforts taken to advance the conservation of the environment in Costa Rica. There is a Blue Flag certification for the agricultural sector, recognizing the impact agriculture has on Costa Rican economy and life. There are some farmers in Copey who are currently in the process of Blue

Flag certification, and others who have expressed interest, recognizing that they still have improvements to make before beginning the process.

We recommend that MAG provides a general list of characteristics and tasks required for Blue Flag certification, in order to encourage and expedite the process. Farmers can then decide whether certification is feasible and desired, then make changes as needed. In addition to being recognized for sustainable practices, certifications would promote the Copey region as a whole, and serve as a source of advertisement for the agro-ecotourism route, as tourists are more likely to visit an area that includes farms renowned by outside agencies for their sustainability.

### **6.7. Community leaders in Copey should connect with tourism agencies to promote the route.**

Since the region of Copey is not currently a well-known or easily accessible tourist destination, developing partnerships with local tourism agencies would be beneficial to the regional development of agro-ecotourism. We recommend that community leaders in Copey reach out to local tourism agencies in order to discuss the possibility of working with them. Santos Tours in Santa María already offers fruit and coffee tours and is located in the canton of Dota. The owner, Carlos Marín, told us that they are also involved in efforts to help make local coffee farms meet organic requirements, indicating that this organization also has a strong interest in sustainable farming (C. Marín, personal communication, April 20, 2016).

Another potential partner is Cooprena Simbiosis Tours, located in San José. This agency specifically focuses on rural tourism, including hiking and day tours of farms. Connecting with tourism agencies has several key benefits. First, it provides additional advertising for the agro-ecotourism route. These agencies also frequently offer transportation for tourists participating in their tours. This transportation would be very useful for visitors to Copey, as they could easily get to San José or Santa María by car or bus and then be taken via shuttle by the agency to Copey for their tour or overnight stay. The Copey agro-ecotourism route could also benefit from tourism agencies distributing brochures to hotels in nearby heavily populated areas including Santa María, Cartago, and San José. Since people staying at hotels are frequently tourists actively looking for things to do, these brochures could be very useful in gaining business, especially among international travelers.

## Chapter 7. Deliverables

### 7.1. Website for agro-ecotourism route

Currently, Dota has a software engineer, Johan Brenes, who has created an outline for a website called Vive Dota ([vivedota.org](http://vivedota.org)), which is shown in Figure 17. By collaborating with him, we have set the foundation for a website specific to Copey de Dota, the name of which is currently being discussed by members of Copey. Given our data and images, he has



Figure 17: Homepage of the Dota website

begun the process of programming this website. The information we provided him with is a short description, contact information, three to four images, and GPS coordinates of each farm, as well as a suggested layout of the website.

#### 7.1.1. Map of route

We created a map that includes each farm, eatery, agribusiness, and additional attraction we visited. Tourists will use this map to choose their own route through the region based on their interests. The map itself can be seen below in Figure 18.

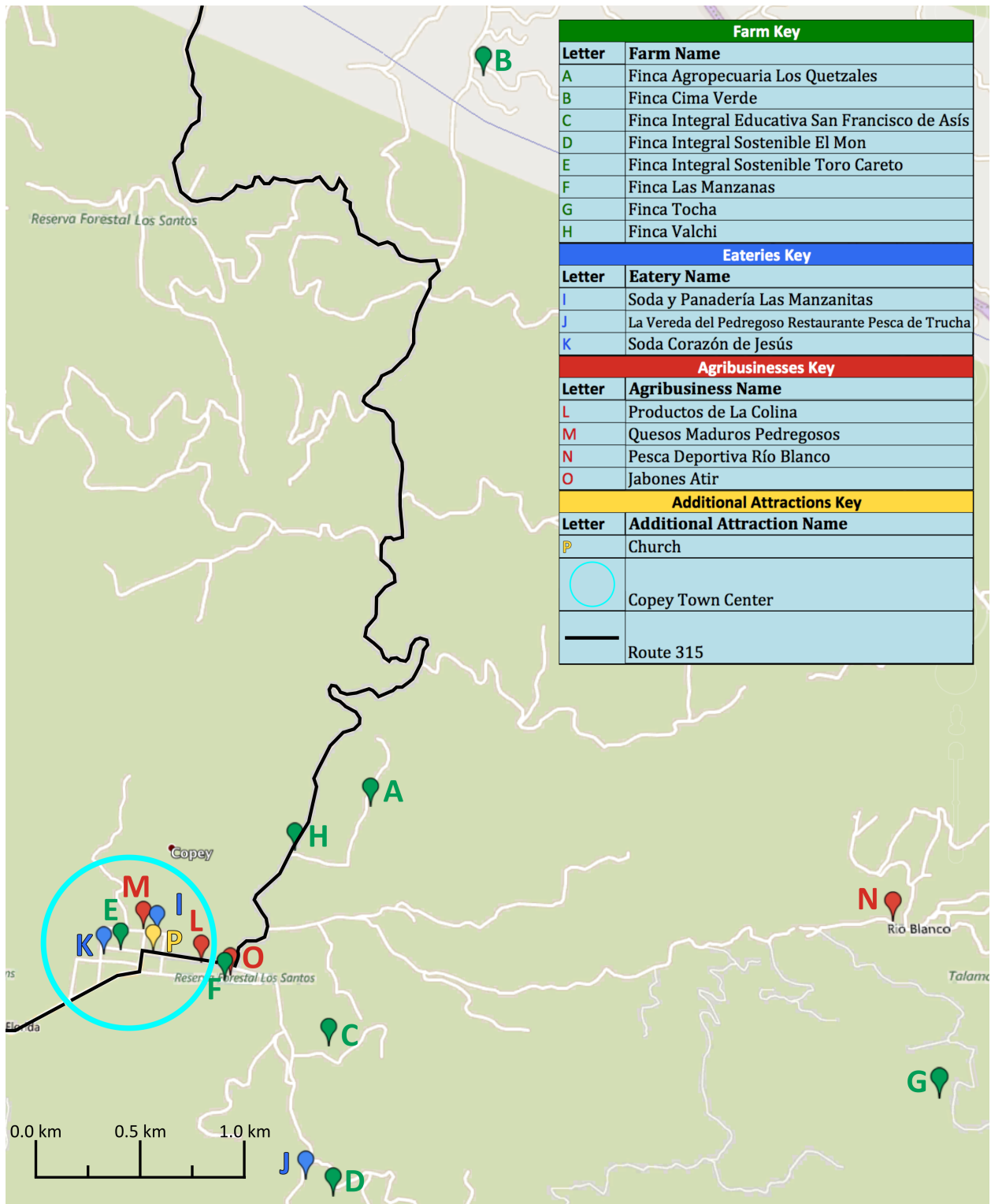


Figure 18: Map of route including farms, eateries, agribusinesses, and additional attractions

## Chapter 8. Conclusion

We found that the existing infrastructure and future plans of farms in Copey make the region ideal for the implementation of agro-ecotourism. We have made recommendations to the farmers of Copey, but the fate of the project lies within the community and MAG because it is their efforts that will lead to the success of the route. As farmers and business owners make changes to provide the best tourist experience possible, farms in the region that are not represented in this report can use the initial members of the route as a benchmark for their own improvements, allowing them to participate in the route as well. Even after a route is established, members will continue to learn what has brought success and what areas can continue to be improved. As the region grows as a tourist destination, economic stimulation from the route can be reinvested into the route to make it even better. The results of this project and the recommendations we made will serve as a starting point within Dota and Costa Rica at large to foster this rural form of tourism and set an example for the development of similar routes in the future.

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## Appendix A. Interview Questions with Farmers

Semi-standardized interviews were utilized to better understand the farms' intangible qualities in section 3.1. The questions below are a sample of what we asked. The specific questions changed slightly depending on the characteristics of each individual farm.

### **Preamble:**

We are a group of students from Worcester Polytechnic Institute in the United States. We are conducting interviews with farmers in the Copey de Dota region in order to find out more information about their respective farms. Our ultimate goal is to gain knowledge about the farms in Copey in order to create an agro-ecotourism route in the area and your insights will be extremely useful.

Your participation in this interview is completely voluntary and you may withdraw at any time. If you would like, we would be happy to include your comments as anonymous, though it would be useful for us to keep track of our information. If interested, a copy of our results can be provided at the conclusion of the study. Your participation is greatly appreciated.

### **Questions:**

1. How do you feel about becoming a part of an agro-ecotourism route?
2. How large is your farm?
3. How many different types of crops do you grow?
4. How many people are employed on your farm?
5. Do you currently have people visit your farm?
6. Where do you sell your food?
7. Are you involved with any sustainable or organic organizations?
8. How often do you interact with MAG?
9. If tourists were to visit your farm, where could they stay if they were doing an overnight trip in the region?
10. How many people would you like to visit your farm (daily average)?
11. What parts of your farm would you like people to see the most?
12. Do you have any ideas about how to tell tourists about sustainable practices?
13. Is there anything else you can tell us about your farm?

## Appendix B. Interview Questions with Farm Owners on Aesthetic Changes

In order to learn about past and planned activity on farms, we conducted semi-standardized interviews with farm owners, as discussed in section 3.2. Questions were sometimes expanded upon depending on initial response and sometimes changed in terms of order and wording between interviews. This allowed us to gather site-specific data about farm owners' aspirations and interest in making aesthetic changes to better accommodate future tourists.

### **Preamble:**

We are a group of students from Worcester Polytechnic Institute in the United States. We are conducting interviews with farmers in Copey de Dota on behalf of the Ministry of Agriculture (MAG) to learn more about the future plans of local farm owners. Our ultimate goal is to develop an agro-ecotourism route through multiple farms in Copey and your insights will be extremely useful.

Your participation in this interview is completely voluntary and you may withdraw at any time. The data collected from the farms will be shared with MAG and our team. If you wish, your name can be kept confidential in the final report. Your participation is greatly appreciated.

### **Questions:**

1. What changes have you made to your farm over the past several years?
2. What changes are you hoping to make in the near future (next several years)?
3. What changes are you hoping to make in the more distant future (next 5-10 years)?
4. Are there any simple repairs that need to be made for improved visual appeal?
5. What improvements would you make if you had unlimited funding?
6. Have you seen examples of other farms that you think do a good job of accommodating tourists?
7. Have you had visitors in the past?
  - a. How often?
  - b. What size groups?
8. What have visitors liked about the farm? What specific elements would they like to see more of?
9. Are there an adequate number of well-placed signs directing visitors to your farm?
10. Are paths through the farm easy to navigate for visitors?

- a. Do you have a clear map of the farm?
11. Have you considered any additions such as shops or restaurants where you could directly sell your products?

## Appendix C. Interview Questions for MAG

These questions were used for a MAG employee in the semi-standardized interview described in section 3.4.1.

### **Preamble:**

We are a group of students from Worcester Polytechnic Institute in the United States. We are conducting interviews with employees of the Ministry of Agriculture to learn more about their experiences with public relations and how information on MAG programs is made available to the public. Our ultimate goal is to understand MAG's current capability to market an agro-ecotourism route and your insights would be extremely useful.

Your participation in this interview is completely voluntary and you may withdraw at any time. If you would like, we would be happy to include your comments as anonymous, though it would be useful for readers to understand where the marketing insight is coming from. If interested, a copy of our results can be provided at the conclusion of the study. Your participation is greatly appreciated.

### **Questions:**

1. What are the public relation department's day-to-day duties?
2. Does the department have experience promoting farms or MAG sponsored attractions?
3. What are some examples of public outreach programs MAG has had recently?
4. What has been successful about past programs?
5. What have been pitfalls in the past?
6. Who is in charge of MAG's website and social media presence?
7. How often are these forms of media updated?
8. What are some local tourism agencies MAG knows of?
  - a. Has MAG ever reached out to them for marketing data before?

## Appendix D. Interview Questions for Software Engineer

In order to begin planning a website for the Copey agro-ecotourism route, we met with Johan Brenes, software engineer for the municipality of Dota, as discussed in section 3.4.2. Through this interview, we determined strategies for a new website for Copey modeled after the existing website for Dota.

### **Preamble:**

We are a group of students from Worcester Polytechnic Institute in the United States. We are hoping to speak with you about your experience designing websites so that we can assist in the creation of a website for the agro-ecotourism route in Copey. Your participation in this interview is completely voluntary and you may withdraw at any time. If you would like, we would be happy to include your comments as anonymous, though it would be useful for readers to understand your relevant background. Your participation is greatly appreciated.

### **Questions:**

1. What sort of platform are you using to build the Dota website?
2. How do you envision tying this website into a separate website for our Agro-ecotourism route?
3. Initially we planned on using a website builder, such as google sites or weebly to create our website, would this still be possible to link to the Dota site?
  - a. Or is there some other way we can go about creating our site?
4. If you saw the concept for our website, would you be able to build it for the Copey farmers? And then populate it with the info we collect?
5. MAG also expressed interest in wanting to host the website, by having us download the structure for it, and re uploading it onto MAG's servers. Do you know how this would be possible?
6. Who is going to maintain the Copey website and keep it updated?

## Appendix E. Interview Questions for Tourism Agencies

These questions were used in standardized interviews with representatives of tourism agencies in Costa Rica to learn about rural tourism statistics and promotion strategies, as outlined in section 3.4.3.

### **Preamble:**

We are a group of students from Worcester Polytechnic Institute in the United States. We are conducting interviews with tourism agencies to learn more about their experiences with promoting rural tourism and gather any relevant statistics they may have. Our ultimate goal is to identify effective methods of marketing for an agro-ecotourism route in Copey de Dota and your insights would be extremely useful. Your participation in this interview is completely voluntary and you may withdraw at any time. Your participation is greatly appreciated.

### **Questions:**

1. In your experience, what are the most effective ways to promote rural tourism?
2. What are some of the most popular activities associated with rural tourism?
3. Have you seen examples of success with some of the activities offered in Copey, including trout fishing and fruit tours?
4. Are there any particular ways in which farms and agribusinesses can improve to better attract tourists?
5. Has your organization done any research into popularity of rural tourism or ways to make it effective? If so, do you have any statistics or findings you would be willing to share with us?
6. Is there any additional information you would like to share with us related to these themes?
7. Would you like us to share your contact information with project leaders in Copey?