Empowering Community Trail Development Along the Sendero Pacífico

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Empowering Community Trail Development Along the Sendero Pacífico

INTERACTIVE QUALIFYING PROJECT

Sponsoring Agency: World Trails Network International
Submitted to:
On-Site Liaison: Nathaniel Scrimshaw, Chair of the Board of Directors at World Trails Network Hub for the Americas
Project Advisor: William San Martín, WPI Professor
Project Co-advisor: Creighton Peet, WPI Professor

Submitted By:
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Patricia Smith, ME
Empowering Community Trail Development Along the Sendero Pacífico

Interactive Qualifying Project

Submitted to the Faculty of Worcester Polytechnic Institute in partial fulfilment of the requirements for the Degree of Bachelor of Science

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Submitted to:
On-Site Liaison: Nathaniel Scrimshaw, Chair of the Board of Directors for the World Trails Network Hub for the Americas
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Marco Garcia-Duarte
Maria Medina Martinez
Patricia Smith

Date submitted:
6 March 2020

This report represents the work of four WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see: http://www.wpi.edu/Academics/Projects.
Abstract

The Sendero Pacífico, a hiking trail in Puntarenas Province, Costa Rica, has few resources that encourage community involvement in the development of trail infrastructure. We worked alongside the World Trails Network to determine community relationships towards the trail to develop resources that could empower community involvement. We developed a report designed to inform all communities along the trail of common attitudes and concerns in order to promote collaboration as well as a trail guide to help promote hiking along the trail.
Acknowledgements

Our team would like to thank the following individuals, organizations, and groups that helped support the completion of this project:

- Our sponsor, the World Trails Network International, without whom this project would not have happened.
- Our on-site liaison, Nathaniel Scrimshaw, for all of his assistance throughout the duration of this project.
- The World Trails Network Rapid Assessment Procedures team that was a crucial part of our data collection.
- Rachel Cheatham for her invaluable time and support. We were inspired by her dedication to the Sendero Pacífico project.
- All the individuals from the communities along the Sendero Pacífico who took the time to participate in interviews and community meetings. Each person we talked to gave us an invaluable understanding of their community situation. Their passion and interest in the Sendero Pacífico were also incredibly motivating and inspiring.
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- Our project coordinators, Melissa Belz and Monte Verde community member Karen Gordon, for coordinating this project with our sponsor.

Finally, thank you to our advisors Professor Creighton Peet and Professor San Martín for spending the time to give us constant feedback and aiding in the completion of this project abroad. Due to the nature of our project, we were greatly appreciative of their efforts to assist us in the completion of our report.

Thank you to Worcester Polytechnic Institute for providing this project opportunity. Our project experience was one of a kind and we would not have had it change in any way.
# Authorship

The following proposal was written in a collaborative manner by all four group members:

Kyleigh Driscoll (KD), Marco Garcia-Duarte (MG-D), Maria Medina Martinez (MMM), and Patricia Smith (PS).

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Executive Summary

Over the past few decades there has been a push to incorporate greenspaces, trails, and even pocket parks into urban planning (Raskin, 2019; Wolf, 2017). Communities worldwide have begun to understand the benefits these areas can offer and are often eager to encourage their development. Trails, in particular, offer a simple way for residents to connect with the environment and appreciate natural resources (Rails-to-Trails Conservancy, 2019a). However, trail development is often hindered by a community’s lack of knowledge of the appropriate methods to use when creating a trail. Because useful resources are scattered across various online and offline sources, it is difficult for a community to easily find relevant trail development information. Nations are developing globally, but nature conservation is becoming an afterthought despite how crucial the environment is to the overall health and wellness of living beings. Trails can contribute to maintaining the benefits of the environment while allowing for sustainable development.

The Sendero Pacífico (Pacific Slope Trail) is an approximately 60-kilometer trail that stretches from Costa Rica’s mountainous Monteverde region to its Pacific coast. This trail passes through a variety of communities and has varying levels of infrastructure in each trail segment. While the trail directly surrounding Monteverde is relatively well established, communities closer to the coast have lower levels of trail development (R. Cheatham, personal communication, November 4, 2019). This inconsistency is influenced by the lack of centralized resources regarding trail development. Communities that exhibit an interest in promoting the development of the trail often do not have the resources or knowledge to accomplish this goal. The World Trails Network (WTN) is one organization working to address this problem by
providing access to trail development resources that can help increase community involvement in the trail.

The goal of this project was to collaborate with the WTN to determine the community relationships and needs along the Sendero Pacífico and develop resources that could empower communities to increase their involvement with and support of this trail. To achieve this goal, we developed an informational community report as well as a trail guide for the Sendero Pacífico. These materials enabled us to provide a foundation for future resources that could be used to empower community participation along the Sendero. Our goal was achieved through a number of objectives. We determined the existing infrastructure along targeted sections of the Sendero Pacífico as well as each community’s relationships to the trail using direct and participant observation, surveys, and semi-structured interviews.

As a very important result from our research we found that there is a significant need for informational resources related to the Sendero as well as signage along the trail. Additionally, we found that various interviewees and communities identified a need for a stronger trail management structure. Currently all the communities have varying levels of trail development, so it is important for these communities to collaborate and have available channels of communication to receive assistance. We identified a trail guide and an informational community report to be the most useful tools to help empower these communities.

Based on the information we gathered, we were able to recommend preliminary steps communities could take to improve their respective sections of the trail. These recommendations were included in the informational community report to enable the communities to relate to one another as well as view the concerns of other involved community members. We recommend this report be utilized as a tool to encourage conversations among the communities to address
recurrent concerns. Along with the report, we also provided a preliminary trail guide designed for use by hikers of the Sendero Pacífico. We recommend this guide be further updated as more information about the Sendero becomes available and that it be used to promote and encourage usage of the trail. We hope that these recommendations lead to improvements in the Sendero Pacífico that will empower the communities along the trail to increase their involvement in this trail project.
1. Introduction

Communities all over the world increasingly protect, maintain, and expand greenspaces, parks, and trails. The economic, mental, and environmental benefits these areas and trails provide are invaluable, so it is necessary to ensure they are sustainable (Losa & Richman, 2011; Raskin, 2019). Whether a space is sustainable depends on its self-perpetuation, environmental benefits, and economic growth. Sustainable trails have developed infrastructure and strong community involvement and support (USDA Forest Service, 2016). However, many communities face important challenges when trying to implement trail development initiatives without the assistance of an outside organization due to a lack of knowledge and resources (Deng, Arbogast, & Selin, 2011). Therefore, creating a network of resources and information by encouraging inter-community collaboration is invaluable. A lack of coordination increases difficulty in trail management and development and can inhibit potential growth for the communities.

The World Trails Network (WTN) Hub for the Americas is an organization that is working to coordinate the efforts of the communities along the Sendero Pacífico (Pacific Slope Trail) in Costa Rica to promote a sustainable trail (N. Scrimshaw, personal communication, November 4, 2019; WTN, 2015). The Sendero Pacífico is an approximately 60-kilometer long trail that stretches from the Monteverde region to the coastal community of Costa de Pájaros. Ideally, the Sendero Pacífico would be well-developed along its full length; however, the trail’s level of infrastructure changes drastically between the different communities. Sections of the trail in the upper corridor of the Sendero Pacífico including the communities of Monte Verde,
San Luis, and Veracruz are generally more developed. These communities have also experienced both positive and negative impacts of tourism due to the high degree of tourists near the Monteverde region. Communities in the lower corridor, including Santa Rosa, La Colina, and Costa de Pájaros, are primarily interested in the benefits that rural and trekking tourism may bring. However, they have not yet experienced the negative impacts tourism can bring. The work of the WTN aims to empower communities along the Sendero Pacífico to develop the trail into a sustainable entity through community connections and resources. This goal, however, has yet to be accomplished.

Individuals across Costa Rica are encouraged to embrace and maintain their natural environment. This is in part due to ecotourism increasing economic development throughout the country (CRTB, 2017). A well-maintained trail can provide economic and cultural benefits to local residents (Rowe, Heller, Ortiz-Rosas, Leitón, & Scrimshaw, 2014). Developing the Sendero Pacífico enhances the environment while connecting communities and providing economic opportunities to places where the possibilities presented by ecotourism do not currently reach. However, the progress made by communities towards the development of local trails is heavily dependent on their attitudes and opinions towards these trails (Mctague & Jakubowski, 2013). Therefore, better understanding these opinions are critical to ensure that a community project remains sustainable beyond the initial burst of community interest.

The WTN (2015) strives to provide communities with resources to improve, promote, and preserve the Sendero Pacífico as a self-sufficient entity. It is necessary to increase local awareness about the state of the Sendero, its benefits, and the needs of communities unified by the Sendero to encourage their involvement. Because communities have unique and differing trail infrastructure levels, they could benefit from a source of comprehensive knowledge about
the entire trail. This would allow communities to learn from each other as well. Connecting the communities along the Sendero and providing them with the resources towards trail development is crucial to the future sustainability of the trail.

The goal of this project was to determine the community relationships to the Sendero Pacífico and the WTN to develop resources that could empower communities to increase their involvement with the Sendero. This goal was attained by achieving a variety of objectives. To begin, we determined the differences in trail infrastructure and sentiments towards the trail between the communities. These objectives were achieved as we hiked along the Sendero Pacífico and observed the existing infrastructure along the length of the trail. Along this hike we also conducted interviews with community members involved with the trail. We also developed a community meeting documentation system to determine the impact the WTN had on each community. From the data collected, we synthesized the needs and wants of the community and developed an informational report to connect and inform communities. We also developed a trail guide to promote and encourage the usage of the Sendero Pacífico. By accomplishing these objectives, we contributed to the future empowerment of local community engagement in the maintenance and usage of the Sendero Pacífico.
2. Background

In order to accomplish our project goal, we completed research in the following areas:

- Sustainability and its relevance to trail development;
- The benefits of trails as well as their management;
- The impact of trails on communities;
- Rural, trekking, and ecotourism, and
- Participatory planning methods.

This section will discuss the above topics as well as the sponsor of this project, the World Trails Network, in the context of Monteverde, Costa Rica.

2.1 Sustainability

Sustainability is most often defined in the context of human interaction with the surrounding environment (Rajsky, 2010). This can be useful when looking at community involvement with trails. Sustainability can be better defined when broken down into its three pillars: environmental, economic, and social sustainability. We will also look at sustainability in the specific context of sustainable trails and their importance.

2.1.1 Three Pillars of Sustainability

The United Nations defines sustainable development using three pillars: environmental, economic, and social sustainability (UN ECOSOC, 2019). When creating a sustainable design, it is important to keep each of these pillars in mind as they all work in tandem to achieve the concept of sustainability.
The first pillar of sustainable development is environmental sustainability. Goodland (1995) maintains that this aspect of sustainability seeks to protect the environment and its resources for the future. He establishes that those who promote environmental sustainability do so in an attempt to indefinitely protect systems that aid the maintenance of human life. Environmental sustainability is described by Goodland as being a measure of the amount of natural materials being consumed by the population compared to the amount of materials being conserved by the population. Environmental sustainability overlaps most directly with the second pillar of economic sustainability.

Economic sustainability relies on the endurance of stable capital (Goodland, 1995). One of the primary goals of this form of sustainability is to narrow the equity gap between upper and lower classes. Without environmental sustainability, long term economic sustainability is difficult. Anand (2000) establishes that economic sustainability is built on the use of natural resources and requires human effort in order to maintain resources for current and future generations. This idea also establishes that current decisions should not negatively impact future generations and their prospects of life. However, both economic and environmental sustainability hinge on the social sustainability of communities of interest.

Social sustainability has many different contextual definitions, but all emphasize the involvement of communities in sustainability efforts (McKenzie, 2004). One of the most important aspects of social sustainability a community can possess is a sense of responsibility for the environment as this drives them to pursue sustainable efforts. Social sustainability also depends on the specific community holding shared values and pursuing the establishment of equality (Goodland, 1995). Social equity plays a crucial role in the achievement of social sustainability as all people involved should have access to the same services such as health
services and education (McKenzie, 2004). An important consideration when attempting to achieve social sustainability is the current state of the population’s beliefs. A difference in beliefs can make the achievement of social sustainability difficult as communities can be less inspired to put in equal effort. Social sustainability is most easily achieved in locations with a strong sense of community and belonging as well as those who share a personal connection with the environment around them.

2.1.2 Sustainable Trails

Sustainable trails are defined as trails that support recreation with minimal impact on nearby ecosystems, do not harm the surrounding wildlife, and require minimal maintenance (Lambke, 2011). An example of a sustainable trail is the Jordan Trail located in the country of Jordan. According to the Jordan Trail Association (JTA) (2016), this trail follows a path that has existed for thousands of years. Formed in 2015, the JTA was tasked with the responsibility of developing the pre-existing trail. This trail exhibits the three pillars of sustainability in different ways.

The Jordan Trail creates jobs in local communities, thus promoting economic development in these communities as well as contributing to the overall economy of the country. This in turn promotes environmental sustainability while also encouraging low impact tourism. In 2018, the “Shiraka Project” was launched with the mission of aiding small businesses in the communities along the trail (Dupire, 2018). This project provides training and marketing support to these business owners and employees to increase their qualifications for their jobs. The resulting increase in highly trained business owners allowed for more jobs to be created as they learned to better manage their businesses, thus aiding the community’s economic sustainability.
The JTA also works to encourage environmental sustainability through the development of trail users’ environmental awareness. One specific group aiding in these efforts is the Environmental Conservation Organization (ECO) Hikers, a group formed in 2018 with the goal of cleaning up trash and debris along the trail (Quick, 2019). The ECO Hikers go on weekly hikes to clean debris and encourage other hikers to participate in clean-up events through social media platforms. The group also hopes to extend their efforts to encourage hikers to use recyclable products rather than plastics when bringing food or other goods on their hikes.

Finally, this organization also stimulates social sustainability by working with communities to increase their involvement with the trail. In one specific instance, a local from one of the communities along the trail started joining hiking groups in the beginning stages of the trail (The Jordan Trail Association, 2018). Due to this initial involvement he then assisted in the planning phases of the trail and began to attend various programs sponsored by the association. As a result of his involvement, he successfully helped increase the economic development of his community by being involved with the planning of tourism.

2.2 Trails

It is desirable for communities to create sustainable, self-sufficient trails due to the multiple benefits they offer. However, designing and creating a sustainable trail is not a straightforward process and is often influenced by various factors. This difficult process can lead to discrepancies in the quality of trails. While well managed trails can have a plethora of benefits, poorly managed trails can yield few.
2.2.1 Creating Trail Systems

Through thoughtful planning and consistent maintenance, sustainable trails that meet a community’s expectations can be created (Olive & Marion, 2009). This planning must consider the trail’s surrounding environment as this will dictate how to best implement the trail under the given circumstances. Qualities such as soil, rainfall, fauna, trail grade (slope), and number of trails users must also be taken into consideration in the creation and maintenance of a trail. According to Olive & Marion, it is necessary to create a plan for a trail system to maintain an environmentally sustainable trail. They elaborate that this plan should address topics of management guidance such as the goals, objectives, and desired resources of the trail as well as the pre-existing condition of the trail. A description of the actions and resources needed to manage the trails should also be constructed.

Various factors contribute to the development and maintenance of high-quality trails. This type of trail experience is attained through professional planning that focuses on the design of the trail, lodging, guiding, signage, reservation systems, and community organizations (Olive & Marion, 2009; WTN Americas, personal communication, October 5, 2019). Each of these components is also considered when designing a sustainable trail infrastructure (WTN Americas, personal communication, October 5, 2019). To continue improving a trail’s infrastructure, grading systems are often used to help characterize the path. For example, a commonly used grading system for trails is the Recreation Opportunity Spectrum (ROS) which separates paths into four categories: urban, rural or roaded natural, semi-primitive, and primitive (USDA Forest Service, 2013).
2.2.2 Benefits of Trails

Trails can offer multiple benefits, both for users’ mental and physical health. Research shows that access to green space can reduce the effects of stress and anxiety (Suttie, 2016; Wolf, 2017). Suttie (2016) explains that participants hiking on a wooded path felt a closer connection to their environment and reported lower levels of stress, pulse, and blood pressure in comparison to those walking in a more urban environment. Trails can also promote better physical health through exercise. The Rails to Trails Conservancy found that 70% of trail users reported that they were getting more exercise as a direct result of the trail. Exercise can improve health by helping control body weight as well as prevent heart disease, help control cholesterol, and lessen bone loss caused by advancing age (Rails-to-Trails Conservancy, 2019). Regardless of the numerous benefits, the involvement of the communities through which a trail traverses is one of the most important factors in trail development.

2.3 Communities

Trails are not separate, isolated domains, but rather, they are a means of recreation, education, and transportation that can positively impact the communities they pass through. A community’s relationship to trails can vary from positive and supportive to exhibiting opposition to trail development. This section will discuss community relationships to trails and the possible opposition to trails and their development.

2.3.1 Relationship to Trails

Trails can provide an abundance of benefits to the communities that they pass through. They can be a source of community pride and enhance community identity through education,
interaction, and recreation (Rails-to-Trails, 2003; Rails-to-Trails, 2019a). Communities with trails are more attractive to homebuyers and businesses, thus promoting economic development in the area (Pennsylvania Land Trust Association [PLTA], 2019). Trails are in high demand as they are a low to no cost way for community members to enjoy the outdoors and they provide residents with health benefits and transportation options (Farmington Valley Trails Council [FVTC], 2012; PLTA, 2019). Additionally, trails connect people to cultural and historical landmarks, providing a source of education and tying communities to their traditions (Rails-to-Trails, 2019a). This is an environmentally friendly way for community members to interact with and preserve history (Rails-to-Trails, 2003).

Communities supportive of trail development also tend to house grassroots movements. Grassroots movements involve many volunteers and demonstrate the community’s support of trails. In some cases, trails would not function at the levels they do without these volunteers. For example, the Bay Circuit Trail in Massachusetts, USA, is primarily organized by volunteers and would not exist without their involvement (A. French, personal communication, November 19, 2019). Grassroots movements also indicate that a community has an interest in the trail’s creation and maintenance since the citizens themselves are working towards a developed trail. This helps the trail become self-sustaining since the interest is derived from the community members.

2.3.2 Opposition to Trail Development

While the benefits to trails outweigh the costs, there is often opposition to the creation and expansion of trails (FVTC, 2012). Opposition originates from various sources, including developers trying to build housing on the land slated for trail development, citizens who fear that
crime will increase and property values will go down, and home-owners who do not want a trail in their backyard (Agence France-Presse, 2018; Rails-to-Trails, 2019d).

Common fears leading to opposition related to property ownership are often unfounded. The laws in areas of interest typically protect against this (Rails-to-Trails, 2019d). With time, residents may see that these fears fall short of actualization. For example, a homeowner who was originally vocal about opposing a trail running through their backyard is now a proponent since the trail greatly benefits their family, and they can see that their initial fears did not materialize (Rails-to-Trails, 2019c). However, misconceptions regarding liability issues and loss of land rights tend to grow if not addressed quickly and honestly by trail advocates (Rails-to-Trails, 2019d).

Alan French (personal communication, November 19, 2019), a retired worker for the Bay Circuit trail, explained the types of opposition that may be encountered in the process of trail development. Going into communities and preaching the values of trails without understanding your audience and the needs and wants of the community can be a setback. It is crucial to understand the specific priorities of each community so that your presence and opinions in a community may be more accepted. French noted that people tend to listen more to members of their own community, rather than outsiders, so it is important to gain local support and partner with local advocates to advance trails. French also mentioned that money can be an incentive when there is either opposition or indifference. Not everyone cares about trails, so coming in with money for building and developing trails enables you to focus on this objective. In the end, it is important to get communities motivated to promote their community’s trails so they can help fuel the desire for trail development themselves, enabling the trail’s continued existence.
2.4 Participatory Planning Methods

The development of sustainable, self-sufficient trail infrastructure requires the support of the communities along the trail. To encourage and support these communities in the maintenance of trails, it is necessary to involve them in the planning of this endeavor. A way to improve chances of community involvement is to utilize participatory planning in the development of a plan for the creation or expansion of a trail. Developing a model of ideal participatory planning methods enabled us to observe community workshops and discussions with a clear direction in mind.

2.4.1 Participatory Planning

The creation and maintenance of any community feature will require interest and cooperation. While it is easy for a community leader to assume that a feature will be appreciated by the people, this will not always be the case (Holstein, 2018). Often the interests of citizens or visitors can be misunderstood or even ignored, thus resulting in the under appreciation of a new fixture. If a community leader or third party seeks to encourage a community to adopt a new idea or project, then citizen involvement becomes necessary in the planning of that project. This leads to the concept of participatory planning.

Participatory planning is a planning method that focuses on community involvement. Typically used as an urban planning method, participatory planning aims to gather a variety of stakeholders in a project to work together to come up with a feasible plan for its implementation (Dodge, 2011; Hassenforder, Pittock, Barreteau, Daniell, & Ferrand, 2016). By gathering this diverse group of members, it is assumed that there will be a higher rate of success in the
development of a plan as all involved will hypothetically have a greater interest in seeing the project succeed.

2.4.2 Participatory Planning for Trails

Despite being most seen in the development of urban communities, participatory planning can be used beyond these applications in endeavors such as trail development. A previous research project in Monteverde, Costa Rica, conducted by Capuano, McEachern, Peacock, & Mulligan (2019) emphasized the positive effect that participatory community planning can have both on a communities’ members and the project outcome. As they stated, community involvement can range from low levels to high levels of participation.

There is no “one size fits all” approach to the development of a participatory planning event. As mentioned by Capuano et al. (2019), community involvement may range from low participation events that aims to inform, to highly collaborative projects where each participant is empowered to develop his or her own plan to enact change. Generally, literature relating to the use of participatory planning in trail development is limited. However, a report by Raskin (2019) focused on defining inclusionary trail planning methods that echoed the core values of participatory planning. Raskin points out that it is important to have multiple ways of including community members in the process of developing a plan. It is also necessary to keep in mind whether the members present in these events are representative of the community. During these events, she mentions that organizers should keep an open mind to the ideas and solutions generated by the group dialogue as well as to the potentially unexpected needs the members may vocalize.
2.5 Costa Rica & Monteverde

Besides considering the global scope of the aforementioned topics, we will now discuss the specific situation of Costa Rica and Monteverde. Due to the many acres of preserved land across Costa Rica, there is a great opportunity for the development of sustainable trails. While there are some well-developed trails in Costa Rica, recreational trail use is a relatively new concept to many Costa Ricans (R. Cheatham, personal communication, Nov 11, 2019). However, Costa Ricans place a large emphasis on sustainability, and trails are a way to promote and support this concept. The World Trails Network aims to involve community members in the development of the trails in their area so they may meet the citizens’ expectations. To accurately make recommendations to the WTN, we will discuss the role of trails, the opposition they face, and effective participatory planning methods within Costa Rican communities along the Sendero Pacífico.

2.5.1 Sustainability in Costa Rica

Costa Rica places a large emphasis on the implementation and practice of sustainability (CRTB, 2017). According to CRTB (2017), during the first six months of the year, 99% of their energy came from renewable resources. The three pillars of sustainability are important to consider in the discussion of Costa Rica’s sustainability status. Environmental sustainability is heavily emphasized as they are among the most sustainable countries in the world. Approximately 30% of the land mass of Costa Rica is protected land, further proving this point. The country also strives to achieve aspects of economic sustainability by having initiatives in place to reward companies for complying with sustainable practices. Many of the buildings and attractions in Costa Rica are officially classified as sustainable in compliance with these
practices. This sustainability is also observed in all parts of Costa Rica and not just areas with low populations.

The importance of sustainability is exhibited not only in energy and buildings but also in other developments such as trails. In Costa Rica, the Sendero Pacífico is one trail that is in the process of being developed into a sustainable, autonomous trail. This trail spans approximately 60 kilometers from the Monteverde region to the Pacific coast of Costa Rica. However, along this trail the level of development varies with the communities it passes through. This is in part due to the different levels of involvement in each community. While sections of the trail closer to the Monteverde region have greater social engagement, the sections closer to the coast lack this key component of sustainability. Achieving social sustainability and involving the community in the improvement of existing trails is the first step towards achieving a sustainable trail.

2.5.2 Trails in Monteverde

Interest in the development of trails is heavily dependent on the community in question. While some communities are supportive of trail development, others are not as aware of the project or are skeptical it will succeed, leading to a lack of support. A project completed by a group of Yale students on landscape connectivity in Costa Rica found that communities become more involved when opportunities such as community hikes or trail workdays are available (Rowe et al., 2014). Events such as these encourage community involvement with local trails, thus helping further develop and maintain trails such as the Sendero Pacífico. Well maintained trails are also one way to attract tourists through trekking tourism and shorter guided informative hikes. Additionally, well maintained trails are a safe way for students and residents to enjoy the outdoors (Monteverde Institute, 2019). Overall, residents can make use of these natural resources as a way to learn about and enjoy nature and as a way to generate income through tourism.
The region of Monteverde, specifically the Monteverde Cloud Forest Reserve, has witnessed a great increase in ecotourism in recent years (N. Scrimshaw, personal communication, November 11, 2019). In a series of interviews with residents conducted by Atsepoyi et al. (2015), 90% of those interviewed said ecotourism had had a positive impact on their lives, and about 90% agreed that the positive changes outweigh the negatives. It is important to consider, however, that about half of the people interviewed were potentially biased since they got their income through jobs in ecotourism. While ecotourism is seen as a viable way to generate income, the tourists who reach additional communities by means of the Sendero Pacífico are classified as trekking tourists, which does not sustain local economies as much as ecotourism.

A rural area has a low population density and is typically in a remote or isolated location (Flood and La Caille, 2019; the Merriam-Webster.com dictionary, 2020). According to Tourism Notes (2020), rural tourism is any tourism activity that takes place in a rural area. Rural tourists typically visit locations where the economy is based on activities that require land-use and use of natural resources such as fisheries, agriculture, and forestry. Rural tourism is characterized by being small in scale with low numbers of visitors who stay for durations of one day to up to six months. Local families develop rural tourism organically and slowly, bringing communities economic benefits through job retention and creation, conservation, and opportunities for youth (Tourism Notes, 2020; Irshad, 2010). This helps boost the self-esteem of the community while preserving their culture and heritage. People who partake in these experiences are looking for authenticity and to learn about a place’s heritage (M. Karkour, personal communication, February 22, 2020). This practice sustains the traditions and character of the area while using resources sustainably (Tourism Notes, 2020).
Trekking is an activity where people walk over various terrains to experience the world (Anderson, 2017; Cambridge Advanced Learner's Dictionary & Thesaurus [CALDT], 2020). Trekking tourism is a more athletic version of tourism where participants travel to another part of the world to trek (Dictionary.com, 2020; Merriam-Webster, 2020; CALDT, 2020; and WiseGeek, 2020). Participants can determine how long and adventurous their trek is, from a few days with a lower level of intensity to many months requiring more athleticism (Anderson, 2017; WiseGeek, 2020). Trekking is used to get close to nature and explore. Often, trekking will take people through isolated and rural areas. When hearing about trekking, many people may immediately think of hiking. However, hiking is defined as occurring on a trail and lasting for less than a day. Technically, the two terms are not interchangeable, but both hiking and trekking are seen as environmentally friendly activities since they do not require the use of a vehicle, thus having a low carbon footprint. Negative impacts occur when visitors litter and ignore trail policies.

According to The International Ecotourism Society (TIES) (2019) and others (Tourism Notes, 2020; Royal Ecotravel, 2008), ecotourism is tourism to naturally beautiful areas with minimal impact on the environment. Additionally, so called “ecotourists” are conscious of sustainability and conservation efforts supported by the services they utilize, uniting the two concepts (TIES, 2019; Briney, 2020). Besides having a focus on the environment, ecotourists travel to enjoy similar attractions that regular tourists enjoy (TIES, 2019). Ecotourism includes rural and urban areas and is typically low intensity. While participating in ecotourism, people not only support the environment, but they help sustain the local economy and culture as well, which creates positive experiences for all. In general, ecotourism helps empower communities and fights poverty. It allows for sustainable development and can directly benefit conservation efforts.
through income. Ecotourism does have its drawbacks, however. It can damage the area if it is mismanaged with impacts similar to those of mass tourism (Briney, 2020). Additionally, having an increase in foreign visitors creates the potential for economic dependency on tourism.

Rural tourism, trekking tourism, and ecotourism all relate to the environment in different ways (Anderson, 2017; Irshad, 2010; TIES, 2015). The focus of rural tourism is on activities in rural areas using natural resources and lets visitors learn about and appreciate the local environment. Trekking leads people to be more connected to nature and is typically low impact. Ecotourism focuses on visiting other regions while minimizing human impact. Rural tourism and ecotourism both include activities based in one location, whereas trekking tourism is a slower, more athletic means of getting from one place to another (Dictionary.com, 2020). Trekking tourism intersects with both rural and ecotourism when trekking is used as the method to get to communities that provide rural and ecotourism experiences.

People will travel somewhere for the specific reason of either ecotourism or trekking tourism (N. Scrimshaw, personal communication, March 18, 2020). People who come for ecotourism activities have already planned out what they are going to do and don’t have time for a trek. People who come to trek may end up participating in ecotourism or rural tourism along the way. Rural tourism can be experienced by both trekkers and ecotourists.

2.5.3 Community Challenge

The Sendero Pacífico passes through multiple communities as it winds from the mountainous cloud forests of Monteverde to the Pacific coast. While some communities have similar challenges inhibiting trail development, each town has a unique set of obstacles. Through research and personal experience, we have developed an understanding of these hindrances.
There is local opposition to the growth of tourism in Monteverde fueled by concern over increased trash, crime, and drug presence (Atsepoyi et al., 2015). Additionally, in interviews conducted by Atsepoyi et al. (2015), 89% of residents interviewed mentioned concern over a “loss of community and culture” (p. 1). According to Cheatham (personal communication, November 11, 2019), some people are also opposed to or hesitant about trail development because they do not want a trail on their land. This mainly stems from fearing that they will take on liability and lose land rights. This type of opposition can lead to hesitancy in local participation, thus posing a problem in communities where trail development is being encouraged. One potential way to overcome this opposition in communities is through the use of participatory planning methods in the development of trails.

There is a section of trail in San Luis that requires a guide due to changing weather conditions and a lack of signage. There is a current lack of information for hikers about when it is dangerous to go a certain way due to high winds. Additionally, adding signage is a challenge because there has not yet been a consensus on what the standards should be and funding is an issue for the trail.

Veracruz faces challenges in land use for trails because much of the land is currently used for cattle farming. Since this is the main source of income for these landowners, giving up land for the trail would be costly. There is a government program that pays landowners money for protected reforested areas. If a landowner were to dedicate a portion of their land to be reforested for the trail, they could be paid for it. However, the process to attain this status can be costly and the reparations are not a replacement for the income cattle farming brings.

Santa Rosa is new to the project, so rather than outright opposition to the project, there is simply less knowledge on the subject. This is a challenge because while there are invested community members, they do not currently have the confidence and know-how to develop the trails without advice from neighboring communities or foreign help.

La Colina is also new to the project. Besides lack of knowledge of the project hindering process, La Colina also has skeptics who do not believe that a trail would work to bring people to their town.
While the established trail route goes over roads, residents have worked to create alternative treks through old public roads. This is a work in progress.

La Montaña de Coyolito is extremely new to the Sendero Pacífico. Here, the trail continues on dirt roads rather than an established off-road trek. However, there are also plans to expand the trail into the forested mountain nearby.

Costa de Pájaros has skeptics that the trail will provide benefits to the town. Unlike in Monteverde where residents worry tourists will increase the amount of litter, trash is already an issue that is being worked on here. Further, since they are a new community to the trail, it is less that the town is opposed to the trail and more that many residents simply don’t know about it. This town also has more physical development separating the current route from the destination of the ocean.

2.5.4 Participatory Planning in Monteverde

The development of sustainable trail infrastructure across the Sendero Pacífico will require the support of the various communities along the trail. The communities we plan to work with will have varying levels of trail infrastructure. For example, the section of the Sendero Pacífico that passes through Monteverde is well maintained, while other communities such as Costa de Pájaros have only expressed interest in supporting the trail (N. Scrimshaw, personal communication, November 11, 2019). To encourage and support these communities in the maintenance of this trail, it will be necessary to gauge their interest in involvement with this endeavor. A way to do this is to utilize participatory planning in the deliverance of information to these communities. By designing meetings influenced by participatory planning methods, local community members can become active participants in developing future for the trail infrastructure in their communities.

Previous participatory planning efforts in the Monteverde region included a workshop led by a group of students from the University of Costa Rica. This study, led by Retana, Ozorio, Retolaza, & Mariaca (2006), focused on understanding the status of the Sendero Pacífico as an ecotourist attraction,
the status of its infrastructure, and the people involved in supporting its development. The group split their workshop into two sessions, each with a different focus. Within these sessions, they utilized hands on techniques to involve the participants of the workshops. For example, for both sessions a mapping exercise served to visually display how participants’ ideas connected to a primary topic such as existing trail infrastructure. They also used different sized pieces of paper to stick their thoughts to another visual map to convey the relative importance of their ideas in relation to one topic. These visual exercises encouraged close collaboration among the participants throughout the workshop. The process was also documented through a series of photographs and transcription of observations taken throughout the workshop. It is important to note, however, that there is limited knowledge on the tangible outcomes of this workshop. Although successful at the moment because of its achievement of the group’s immediate objectives, there is little knowledge on the effect of the workshop further down the line.

2.6 Summary

The development of sustainable trail infrastructure for the Sendero Pacífico in Costa Rica is influenced by various factors. Its success is reliant on the country’s devotion to sustainability, the effect that the trail will have on the local communities, and how the WTN incorporates participatory planning in the development of their workshops. In the next chapter, we will explain the methods we will use to assess the current trail infrastructure of the Sendero Pacífico, local community relationships with the trail, and the development of informational resources.

3. Methodology

The goal of this project was to determine the relationships among communities along the Sendero Pacífico and with the World Trails Network (WTN) in order to develop resources that
could empower communities to increase their involvement with the Sendero. Our objectives to achieve our goal were as follows:

1. Determine the existing infrastructure along targeted sections of the Sendero Pacífico
2. Identify community interactions with and opinions and attitudes towards the Sendero Pacífico
3. Identify an effective method to promote and encourage usage of the Sendero Pacífico
4. Identify an effective method to facilitate future participation in the development of the trail.

Figure 1 displays the relationships among our objectives. The first two objectives were crucial in allowing us to achieve our last two objectives. We will describe the methods we used to achieve these objectives in the following sections.

![Figure 1: Relationships among objectives](image-url)
3.1 Determine Current Trail Infrastructure

To understand and contextualize the needs of each community along the Sendero Pacífico, the team determined the current trail infrastructure and management system of the Sendero. Having awareness of the varying management strategies in each community was key to developing resources that could be effective in increasing community involvement along the trail. We accomplished this using a semi-structured interview and direct observation to collect information about the trail’s management system and physical characteristics.

3.1.1 Interview to Identify Current Trail Management System

It was important to have a comprehensive understanding of the trail management among the communities along the Sendero Pacífico in order to determine the trail infrastructure, identify ways to improve it, and help us determine the role each community plays in the maintenance of the trail. We investigated the current methods of management along the trail through a semi-structured interview with Rachel Cheatham (see Appendix B), a former member of the Alliance of the Sendero Pacífico who was also a member of the WTN. The semi-structured interview involved developing open-ended questions for the interviewee, sending these questions in advance, and creating further questions based on responses given before and during the actual interview as part of a discussion. She was well-known for her role as a coordinator among communities along the Sendero, so she also helped explain some community dynamics. This interview provided insight about her previous role in the management of the Sendero Pacífico and identified additional organizations assisting in its management.
3.1.2 Direct Observation of Trails

To further determine the current infrastructure of the Sendero Pacífico, we used direct observation. Direct observation showed us physical details of the trail that would have been difficult to collect from interviews. We hiked the trail from the Monte Verde to the coastal community of Costa de Pájaros as seen in Figure 2 (Koontz & Rigdon, 2020).

![Figure 2: A full map of the Sendero Pacífico](image)

Using the guidelines in Appendix C, we noted information regarding the existence and state of current features of the trail infrastructure. These features included signage, trail design, food, and lodging. Our guidelines were developed considering elements of trail development checklists created by trail organizations in the U.S. as well as the advice of a trail building expert in the U.S (National Park Service, 2012). By completing these observations, we were able to determine the quality of the trail through each community, thus providing us the necessary information to include in a trail guide and for use in a report tailored to each community.
3.2 Determine Community Relationships to the Trail

It was important to determine each community’s relationship to the trail and the impact the trail had on them to understand the value the Sendero Pacífico carried in these communities. This information also revealed the knowledge and resources a community would require to further develop their section of the trail. The WTN hosted a series of meetings in the communities along the Sendero to promote local participation in the development of future plans for the trail. We examined the relationship of each community to the Sendero Pacífico by utilizing semi-structured interviews with members living along the trail, direct and participant observation of meetings, and surveys during the Monte Verde conference.

3.2.1 Interviews of Community Members Involved

We conducted semi-structured interviews (see Appendix E) with twenty members of the communities involved with the Sendero Pacífico to determine their interactions with and thoughts about the trail. These communities included Monte Verde, San Luis, Veracruz, Santa Rosa, La Colina, La Montaña de Coyolito, and Costa de Pájaros. Using a semi-structured interview format enabled us to ask follow-up questions to the interviewees depending on their responses. It also allowed the interviews to take on the feeling of a conversation rather than a formal interview, thus allowing the interviewees to share more of their thoughts. Each one of these interviews lasted between 30 to 90 minutes and were recorded when the interviewee granted permission. Of the people interviewed, one supplemented his or her interview with written responses prior to the interview. Another interviewee elected to only return a written response. The interviewees were recommended to us by our on-site liaison and were ultimately chosen based on their relationships to the trail as well as their willingness to talk with us. The list
of the individuals interviewed per community and their type of involvement with the Sendero can be found in Table 1. We defined an official position to be an individual who works with the Sendero in a professional capacity, such as through a Development Board. Involvement with accommodations encompassed community members who ran albergues (hostels). General involvement was for individuals who have a loose affiliation with the trail, such as hikers.

Table 1: Interviews with members of Sendero Pacífico communities

<table>
<thead>
<tr>
<th>Location</th>
<th>People interviewed</th>
<th>Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monte Verde</td>
<td>1</td>
<td>Official</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>General</td>
</tr>
<tr>
<td>San Luis</td>
<td>3</td>
<td>Official</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Accommodations</td>
</tr>
<tr>
<td>Veracruz</td>
<td>2</td>
<td>Accommodations</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>5</td>
<td>Official</td>
</tr>
<tr>
<td>La Colina</td>
<td>1</td>
<td>Accommodations</td>
</tr>
<tr>
<td>La Montaña de Coyolito</td>
<td>4</td>
<td>Official</td>
</tr>
<tr>
<td>Costa de Pájaros</td>
<td>1</td>
<td>Accommodations</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td></td>
</tr>
</tbody>
</table>

These interviews gave us a local perspective on the trail’s impact on each community as well as individual opinions and thoughts on the challenges presented by future trail development and potential improvements. Using content analysis, we identified recurring themes across all the communities as well as specific themes. As described in Appendix F, we identified common categorical topics within each interview, coded themes from these topics, and then quantified these themes to visualize them in a graphical format. The information obtained from this analysis
was used to determine community attitudes and perceptions of the trail. The identification of each community’s interest in the development of the Sendero through this content analysis enabled us to more accurately recommend ways to encourage each community’s future involvement with the trail.

3.2.2 Surveys of Monteverde Conference Participants

The first community meeting was WTN’s Monteverde Conference that took place at the Monteverde Institute on February 16th, 2020 with the Rapid Assessment (RAP) team in attendance. The RAP team is a committee organized by the WTN to share trail management experiences around the world. Members of the communities along the Sendero Pacífico were invited to learn about global trails as well as to collaborate on the next steps for future trail development. To understand what knowledge community participants gained from this experience we utilized surveys administered through Google Forms. Surveys were chosen to enable us to reach the largest number of participants possible in a short amount of time and to provide quantitative data that we could then analyze and compare. Both pre-conference and post-conference surveys were available in English and Spanish to allow all members to participate. The pre-survey focused on identifying how participants learned about the trail, the impact they perceived it to have within their community, and what role they believed the WTN had in its development (see Appendix H). The post-survey determined whether the participants felt their concerns had been addressed, what they believed the purpose of the conference was, and what they believed the next steps in development should be (see Appendix I). This information allowed us to determine whether the participants had a positive view of the trail and how they felt they could be better supported in the project.
Before attendees were seated, we had them sign in with their name, community, and email address, if applicable. Based on this, there were 29 people in attendance; however, there were some participants who did not sign in as they arrived after the conference had begun. A list of the communities the participants belonged to can be seen in Table 2 along with the number of years that community has been involved with the Sendero Pacífico project.

Table 2: Number of Participants from Trail Communities

<table>
<thead>
<tr>
<th>Community</th>
<th>Number of Participants</th>
<th>Years of Community Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Elena</td>
<td>2</td>
<td>15 +</td>
</tr>
<tr>
<td>Monte Verde</td>
<td>12</td>
<td>15 +</td>
</tr>
<tr>
<td>San Luis</td>
<td>5</td>
<td>15 +</td>
</tr>
<tr>
<td>San Antonio</td>
<td>2</td>
<td>15 +</td>
</tr>
<tr>
<td>La Colina</td>
<td>3</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>La Montaña de Coyolito</td>
<td>1</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Costa de Pájaros</td>
<td>2</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>29</strong></td>
<td><strong>NA</strong></td>
</tr>
</tbody>
</table>

As participants entered the conference, we asked if they were interested in taking the pre-survey. However, due to the tight time constraints of the conference and the length of time it took to complete each survey on a laptop or iPad, only 11 participants were able to participate. After the conference, all 18 email addresses that were collected on the sign-in sheet were sent the post-survey. The team received 8 responses. The number of participants who completed the surveys is summarized in Table 3, along with the percentage of total participants who completed the surveys.
### Table 3: Number of people who took surveys in Monte Verde

<table>
<thead>
<tr>
<th></th>
<th>Completed Pre-Survey</th>
<th>Completed Post-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Amount of People</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Percentage of total who completed</td>
<td>38%</td>
<td>28%</td>
</tr>
</tbody>
</table>

3.2.3 Observation of Meetings

We used both direct and participant observation to document the meeting discussions. We primarily utilized direct observation during the conference that took place in Monteverde on February 16th, 2020 and participant observation at the meetings between February 17th through February 22nd.

The Monteverde conference was divided into three distinct parts: presentations about global trails, a round table discussion about the challenges facing each community in the development of the trail, and a brainstorming session based around the challenges faced around the three pillars of sustainability. The format of this community meeting was distinctly different from the rest of the meetings along the Sendero. For the first section of the conference, the team primarily utilized direct observation to note the body language that attendees had during the presentations. The round table discussions also had the team performing direct observation and documenting the challenges that each of the participants identified within their community. During the brainstorming sessions, we divided ourselves to observe and document the individual sessions. Observations of these brainstorming sessions focused on the collaboration amongst community members as they discussed their challenges and their overall interest in the activity. All of these observations were conducted following the guidelines in Appendix J. Following the
individual sessions, all three groups returned together and prioritized their challenges using colored dots. They then collaborated and brainstormed solutions. Alongside the photos we took throughout the length of the conference, we also photographed the resulting categorized brainstormed features.

We utilized participant observation during the meetings in San Luis, Veracruz, Santa Rosa, La Colina, and Costa de Pájaros to record both qualitative and quantitative data. This data included the number of participants, the common themes that emerged from the workshop discussions, and the overall meeting dynamics. These structured observations were recorded based on the charts and categories listed in Appendix K. Unstructured findings were recorded through notes and the use of photography. Table 4 identifies the number of people in attendance at each meeting location. This data was important to gauge the impact of the meetings and to make recommendations for topics to be covered in future community-run meetings.

*Table 4: Number of people attending each community meeting*

<table>
<thead>
<tr>
<th>Location</th>
<th>People in Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monte Verde</td>
<td>29</td>
</tr>
<tr>
<td>San Luis</td>
<td>10</td>
</tr>
<tr>
<td>Veracruz</td>
<td>3</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>5</td>
</tr>
<tr>
<td>La Colina</td>
<td>7</td>
</tr>
<tr>
<td>Costa de Pájaros</td>
<td>4</td>
</tr>
<tr>
<td>Total Participants</td>
<td>58</td>
</tr>
</tbody>
</table>
3.3 Determine an Effective Tool for Trail Usage

To identify an effective method to encourage the usage of the Sendero, we synthesized the information collected from our semi-structured interviews and direct and participant observations. From our synthesis we determined a trail guide to be the most effective and useful tool for these communities. For this guide, we utilized existing trail guiding resources to develop our trail guide design.

3.3.1 Gathering of Information

To determine that a trail guide would be the most useful resource, we utilized the interviews discussed in Section 3.2.1. To gather the appropriate data for our guide, we utilized the same interviews as well as the observations in Section 3.1.2 and 3.3.3. This data was then analyzed and organized by the community. The observations allowed us to create descriptions of the state of the trail that could inform hikers of its conditions. The interviews provided us with personal accounts of the trail to include in summaries for each community. This information was then combined with the itinerary of our hike to maximize the amount of information available to hikers.

3.3.2 Development of Trail Guide

The design of the trail guide (Appendix P) was inspired by materials created and used by the Appalachian Mountain Club as well as the U.S. National Parks Service. Based on these resources we decided what topics needed to be discussed in our own trail guide. Initial drafts of the guide’s information were shared with one hiker who had previous trekking experience in the Northeast of the United States as well as along the Sendero Pacífico. This was done to get
feedback from a member of the target audience of the trail guide. Advice was also provided by Nathaniel Scrimshaw due to his experience hiking along the Sendero Pacífico. Other materials provided by Rachel Cheatham from the Sendero Pacífico Alliance were also taken into consideration.

3.4 Determine Effective Tool for Participation

We synthesized and analyzed information from interviews and observations in order to determine that an informational report would be an effective tool to provide to the communities along the Sendero Pacífico to encourage future participation in the development of the trail.

3.4.1 Gathering of Information

Through the information we gathered with the methods in Section 3.1.1 and Section 3.2, we found an informational report would best serve these communities. To gather information, we utilized the information from Sections 3.1.2, 3.2.1, 3.2.2, and 3.2.3. The content analysis performed for 3.2.1 helped inform the creation and the organization of the report. The survey information from 3.2.2 as well as the observations from 3.2.3 were utilized to analyze the outcome of the community meetings as well as provide context for the meeting proceedings. The observations from 3.1.2 were also used to accurately describe each community’s level of trail infrastructure and overall hiking difficulty.

3.4.2 Development of Report

The informational report (Appendix O) was designed to concisely summarize the information gathered from each community. The data discussed in Section 3.4.1 was further
analyzed to convey the common themes from each community. This report was aimed at communities rather than tourists. Therefore, it highlighted the benefits that these communities could derive from the Sendero Pacífico as well as similarities and differences among opinions and attitudes of community members.

3.5 Summary

The goal of our project is to develop resources that could empower communities to increase their involvement with the Sendero Pacífico. To achieve our goal, we conducted semi-structured interviews with community members involved with the Sendero. These interviews provided the basis for the development of a trail guide and tailored reports for each of the involved communities. Our direct and participant observations enabled us to determine the current infrastructure of the Sendero as well as community’s relationship to the trail. In the following chapter, we will discuss the findings that emerged from all of the research we completed.
4. Results and Analysis

The goal of our project was to determine community relationships to the Sendero Pacífico to develop resources that could empower future community involvement in the Sendero. We accomplished this by determining the Sendero's current infrastructure, identifying community attitudes towards the trail, and determining that a trail guide and informational report could best address the informational needs of the communities. This section analyzes the results from the execution of our methods and ultimately serves as the basis for our conclusions and recommendations.

4.1. Determine Condition of Infrastructure

The Sendero Pacífico can be divided into four different regions containing a variety of communities (Figure 3) (Koontz & Rigdon, 2020). These divisions are one of many possible ways to analyze the trail as the boundaries of these different regions are not explicit. This division of the trail was suggested by Nathaniel Scrimshaw, chair of the Board of Directors of the World Trails Network-Hub for the Americas.

The upper corridor of the trail begins in the Monteverde region including Santa Elena, Cerro Plano, Monte Verde, and San Luis. Heading towards the coast, the next region is Guacimal, which encompasses Veracruz, San Antonio, Santa Rosa and Guacimal. La Colina has its own region due to its distance from the other communities involved in the Sendero Pacífico. The final region contains the coastal communities that reside near the Gulf of Nicoya. This region is comprised of various communities, but La Montaña de Coyolito and Costa de Pájaros are the two that are most directly involved in the Sendero Pacífico project.
In each of these regions and individual communities, we sought to determine the existence and state of the trail infrastructure. This process began with an interview with a former member of the World Trails Network who was involved with the trail. This was done to determine the state of the management system of the trail, which was then supplemented by direct observations of the state of its physical infrastructure.

4.1.1. Identify Management System

Through an interview with Rachel Cheatham, the former WTN local coordinator for Costa Rica, we determined the trail’s current management system (personal communication, January 28, 2020). We discovered that there is not currently a functional central management system for the trail. There are inter-community organizations such as the Alliance of the Sendero Pacífico (the Alliance) and the Sendero Pacífico Board of Directors (SP-BOD) that consist of
representatives from each of the communities along the trail, however, they do not currently function as management organizations. Based on the hierarchy, the SP-BOD should be the highest level of management, but the group was established within the last year and does not have the infrastructure to properly manage the trail project. This board was created by the Alliance and consists of one elected member from each of the active communities of the Sendero Pacífico. It was established to address the problem within the Alliance of projects and improvements being suggested and planned but never completed. Alliance meetings currently suffer from a lack of attendance from many of the involved communities which leads to them often being underrepresented. The elected SP-BOD officials are very involved community members, which is both a benefit and a drawback to this board. Many officials have numerous other commitments and for the board to be successful they would need to prioritize the needs of the Sendero Pacífico.

Throughout the communities along the trail, there are different interpretations of the Sendero Pacífico’s mission. As a result of this, the communities work based on their individual perception of the mission without discussion with other communities or management bodies. We identified a lack of communication between communities as a significant problem when working to unite the trail. Another issue with the current system is the lack of resources, including professional knowledge on how to adequately manage the trail. While individual communities have begun to show the initiative to take on a management role within their section of the trail, this is implemented inconsistently. For example, in many communities there are some indications of signage and trail blazes. However, because these were implemented by individual communities there is no consistent formatting for signage along the trail.
The Alliance and SP-BOD are categorized as formal organizations that exist to encompass all involved communities. However, within individual communities there are also examples of informal organizations that handle the management for their respective communities. In the bounds of the Monteverde region, there is the Asociación Desarrollo Integral San Luis (ADISL), which translates to the San Luis Development Association. The Sendero Pacífico is one of many projects this group is involved with, but they have taken on the role of being the legal body for representation of the trail within the Monteverde region due to their individual resources and the trail’s long standing establishment in the area. This foundation has allowed them to create a well-developed trail section, whereas many other communities are lacking the establishment necessary to pursue this type of development.

Within the Guacimal region, the community of Veracruz has an informal group of involved and passionate community members. The Guacimal region also encompasses Santa Rosa where the Santa Rosa Development Association (SRDA) acts as the trail representative for this community. The SRDA includes a handful of dedicated community members who have expressed great interest in the potential improvement of the trail. Within the coastal communities there are three women’s groups that have acted as representatives for these communities in matters related to the trail. Certain leaders of these groups have exhibited interest and initiative to search for alternate trail routes to the rural roads that the lower corridor of the trail currently follows.

When it comes to trail maintenance, individual communities are responsible for their respective sections. Many of the features that exist along the trail have been installed by volunteers with help from the WTN, primarily through the connections with the Bruce Friendship Trail in Canada. However, these features have been poorly maintained despite
instructions from the WTN. This is, in part, because motivated community members lack adequate funding to perform upkeep and improvements to the trail. In the community of San Luis, the ADISL has a fund dedicated to the trail, but this is not common knowledge among the communities. The ADISL states this fund is accessible to the other communities; however, the ADISL has not specified how these communities could access it. At the October 2019 SP-BOD meeting there was discussion of finding alternate options to house the funds in a manner that would allow other communities to have easier access. This topic was supposed to be re-introduced at their next meeting in January 2020 but there was no follow-up with our contacts to determine if it occurred.

Trail development along the Sendero Pacífico is currently focused on transitioning the trail from following public roads to passing through private property to make the trail more attractive to hikers. A regulation from ADISL requires a paper contract with landowners for this to be done within the trail sections in San Luis. Aside from this, the WTN team as well as volunteers have done a great deal of work in the San Luis area laying and improving the tread, or surface, of the trail. This work has also been aided by individual members of the San Luis community.

Our interview also covered the current state of many features of infrastructure. Signage exists along the trail in certain sections, but it is not developed well enough to become an open access trail. Trail design is in a preliminary stage of development, and communities would need proper training in order to create a sustainable trail design. Specific sections of the trail also require guides; however, the booking of these guides can currently only be done through the ADISL. The other communities along the trail are not aware of the guiding policies that the ADISL has in place. This largely comes down to a lack of communication between the
communities which leads to misunderstandings about policies and individual improvements made along the trail.

4.1.2. Direct Observation of the Trail

Upper Corridor

Direct observation was used to supplement the results from our interview about management, detailed observations can be found in Appendix D. From these observations, we found that there is a consistent lack of infrastructure along the trail. In the upper corridor of the trail from San Luis to Santa Rosa we found that there is a need for constant trail maintenance as well as increased signage. The first length of this section of trail from the Monteverde region to Veracruz stretches 12.2 km (7.6 miles) as shown in Figure 4 (Koontz & Rigdon, 2020).

Figure 4: Map of the first section of trail

This section snakes through the mountains of the rainforest and contains the steepest section of the trail, which can be very strenuous at times. From a trail design perspective, the path is cleared enough to be distinctly seen, however, regular maintenance is required to maintain the state of
the trail (Figure 5). The required maintenance is also exhibited in many of the installed “staircases” (Figure 6) that are beginning to get overgrown.

![Figure 5: Trail tread in the forested section](image)
![Figure 6: Staircase in the forested section](image)

Within the San Luis area in Finca Virdana, there are “loop trails” which consist of multiple alternate routes that lead to the same section of trail. These loops exhibit the greatest amount of signage along the trail. This is exhibited by numerous kiosks as well as signposts containing maps and general information about safety and the trail itself (Figure 7). These kiosks are the most informative signage throughout the trail, however due to a lack of maintenance, many of them are missing pieces of information and many of the maps are outdated.

![Figure 7: An example of one of the informational kiosks along the trail](image)
Upon leaving the Children’s Eternal Rainforest portion of the trail, a guide is necessary to continue due to the ill-defined trail leading through cattle pastures. The necessity of a guide is a significant hindrance to the success of the trail. As previously discussed in Section 4.1.1, the system to book guiding services can be improved and is not well defined among the communities along the trail.

Starting in Veracruz, the second segment of trail stretches 16.4 km (10.2 miles) to the community of Santa Rosa (Figure 8) (Koontz & Rigdon, 2020).

![Map of the second section of trail](image1)

**Figure 8: Map of the second section of trail**

A short distance on a rural road consisting of dirt and gravel marks the beginning of this section of the trail (Figure 9).

![Rural road in San Antonio](image2)

**Figure 9: Rural road in San Antonio**
Rural roads along this section do not require maintenance for them to be used, but because there is traffic and little shade along these roads it poses a danger to hikers of the trail. The lack of signage is also very apparent and can be a problem due to forks in the road where it is unclear which direction to follow. The typical route to Santa Rosa mainly traverses rural roads and cow pastures, however a Santa Rosa local guided us through an alternate route that instead traveled through a forested area. This route had multiple river crossings which resulted in a much cooler alternative to hiking rural roads. However, the water level of the river can become too high to cross during the rainy season, so it will be necessary to hike the original route during these periods of time. Due to this being a trial run of the alternate route, this section of trail was not well cleared, and leaves and rocks covered the terrain. We found that for this section to become a permanent addition to the trail, extensive trail maintenance will need to be done in order to create a defined trail tread. Within this forested region, tree tags exist as the primary marking system for the trail. While tags may not be a long-term solution for signage, it is appropriate for the changing nature of this new section. After exiting the forested section, the trail passes through cattle pastures and stables which all lack signage.

While the upper corridor has the foundation for well-maintained trail infrastructure, current signage and trail maintenance practices are still a prominent issue. We found that for forested trail sections, regular trail maintenance would need to be done as the rainy season can completely change the environment surrounding the trail. In order for the trail to be classified as open-access, signage also needs to be improved for the safety of the trekker.
Lower Corridor

In the lower corridor of the trail from Santa Rosa to Costa de Pájaros, we found that having the trail on rural and paved roads is not desirable for trekkers due to the physical strain and minimal scenery this offers. The third day of this hike spans 10.5 km (6.5 miles) from Santa Rosa to the community of La Colina (Figure 10) (Koontz & Rigdon, 2020).

The trail begins on a rural road and then continues to follow gravel public roads. The trail eventually reaches a busy paved highway that crosses through the community of Guacimal. After a period of approximately 3 km on this paved road, the trail returns to the dirt and gravel of a rural road. Shortly after this road begins, a river is crossed by the means of a wooden bridge that must be reconstructed yearly because of flooding. Due to seasonally changing water levels, this river crossing is only possible during the dry season (Figure 11).
Figure 11: Bridge crossing of a river in Guacimal

The final day of the hike stretches approximately 24 km (15 miles) from La Colina to the coastal community of Costa de Pájaros (Figure 12) (Koontz & Rigdon, 2020).

Figure 12: Map of the final section of trail

The first time the team hiked the Sendero Pacífico, the 16 km (10 mile) hike from La Colina to the community of la Montaña de Coyolito was completed on paved roads. We observed that there were stretches of highly trafficked roads that greatly increased the risk of hikers, such as along the highway. Additionally, the width of the shoulder of the road along these roadways was insufficient for trekkers to safely pass.
The second time the team hiked, an alternate route was tested for the first 16 km (10 miles) out of La Colina. A local from the community led the route which utilized old, unused public roads, eliminating the risk of traffic. This route traversed a variety of different terrains and environments, many of which consisted of farmland and shaded rural roads. This route also included crossing a river (Figure 13), which we found to be unviable during the rainy season.

![River crossing between La Colina and Jarquin](image)

*Figure 13: River crossing between La Colina and Jarquin*

After exiting La Montaña de Coyolito there is an 8 km (5 mile) stretch of trail to reach the final destination of Costa de Pájaros that was used during both hikes. This section continued the usage of rural and paved roads from La Colina to La Montaña de Coyolito like the previous day.

We found that the rural and paved roads in the lower corridor are undesirable routes for the Sendero Pacífico for a variety of reasons. Because of the lack of forest connectivity along the trail as it closes in on the coast, the road conditions can be physically exhausting due to the heat. Paved roads also have dangerous traffic which can deter a trekker from pursuing this route. Additionally, considering the numerous turns, forks in the road, and crossings of farmland that can potentially be viewed by the hiker as trespassing, there is a clear lack of sufficient signage for trekkers. However, if the communities of the lower corridor were to pursue alternate routes like the one our team tested out, many of the issues of this section could be addressed.
4.2. Community Relationships to the Trail

In this section, the findings related to the relationships and views of the communities along the Sendero Pacífico are presented. These findings were developed through the data gathered from the semi-structured interviews, surveys, as well as direct and participant observation described in Section 3.2. The final deliverables of this project were heavily influenced by these findings.

4.2.1. Community Member Interests

For the Sendero Pacífico to be a self-sustaining initiative, it is important for individual communities to feel they have a personal stake in its success. It was necessary for us to understand key community member’s motivations for supporting the Sendero in its fledgling stage of development to better inform the resources we aimed to create. Through a series of semi-structured interviews with community members along the length of the Sendero Pacífico, we found that there was a diverse set of reasons for why an individual supported the trail project. As we discuss our results, it is important to note that due to the limited number of individuals we interviewed, our findings may not be representative of an entire community’s interest in the trail.

As described in Section 3.2.1, we interviewed ten individuals in addition to two community groups currently involved with the Sendero Pacífico. From these interviews, we coded six themes with multiple categories within these themes that classified the interviewees’ attitudes and opinions towards the Sendero. These themes included Mission, Management, Benefits, Concerns, Improvements, and Tourism as seen in Figure 14.
Through additional coding, we were able to visually compare and contrast the priorities, opinions, and concerns that different members within the Sendero Pacífico communities had.

To begin, we found that there was a difference in the perceived mission of the Sendero Pacífico based on a community’s length of involvement with the project. For example, as seen in Figure 15, we found that unity and education were common missions that all communities except La Montaña de Coyolito thought the Sendero fulfilled. La Montaña de Coyolito is a newly involved community with minimal knowledge of the trail, so it is possible they have not yet recognized the possibility for the Sendero to serve as a tool to unite communities. They saw the purpose of the Sendero as supporting nature conservation and promoting recreation, thus showing they currently see the Sendero for what it could offer in the short term rather than the long term. Alternatively, communities such as Monte Verde, San Luis, and Veracruz that have been involved with the Sendero Pacífico for over fifteen years perceived the mission of the
Sendero to include its economic potential. As one of our interviewees and Nathaniel Scrimshaw noted, these communities have experienced both the initial bursts of activity and lulls that come with a long-lived project. The team noticed that as the length of involvement of a community increases, they become more aware that the potential of the trail can span a greater set of ideals.

![Mission](image)

*Figure 15: Breakdown of categories in 'Mission' of SP*

We found that the themes of concerns, management, and improvements mentioned in these interviews were interrelated. The primary concerns of Monte Verde and San Luis were the future development of the trail, the administrative organization of the trail, and the challenges related to increasing tourism as seen in Figure 16. These interviewees identified the necessity to have an organizational management system that clearly defined how to progress the Sendero Pacífico, communicate between communities, and manage the growth of tourism. Currently the Alliance of the Sendero Pacífico works to discuss future trail plans, however, a number of interviewees expressed that they felt a necessity to strengthen the role of the Alliance in order to
support the development of the trail. Interviewees within the other communities expressed their concern that without a solid organizational system, it would be difficult to know how to continue forward. An interviewee in La Colina, for example, suggested a full-time employee be hired to assist in the coordination and planning of the trail. Through Figure 16, we found that communities with longer experience with the trail expressed a larger number of concerns. This is most likely due to the problems that only arise from personal experience with the project.

![Concerns diagram]

*Figure 16: Breakdown of categories in 'Concerns' of SP*

The improvements desired by communities echoed previous concerns that had been identified. For example, for Monte Verde and San Luis, there was a desire to strengthen the organizational infrastructure of the Sendero as well as to improve informational resources (see Figure 17). However, other communities rated improvements in information, signage, and the physical infrastructure of the trail as being the most necessary. We found that there is a great lack of resources available for individuals to learn about the Sendero Pacífico, thus hindering both
local and international interest. One interviewee from Monteverde expressed the difficulty trying to find information online about the Sendero. For example, a Google search yields a few results to the WTN-Hub for the Americas Facebook homepage and webpage, the San Luis de Monteverde Sendero Pacífico webpage, as well as a few other outdated information sources (see Appendix G). For an international traveler, or even a local hiker, it is extremely difficult to plan a trip to visit the Sendero as there is no clear online source to find more information. Additionally, the trail currently cannot support a large increase of hikers as the physical infrastructure of the trail still lacks proper maintenance and signage.

Figure 17: Breakdown of categories in 'Improvements' of SP

We found that the Sendero Pacífico can offer various potential benefits to the local communities. From Figure 18 we found that various communities saw the benefit of education as being the most important. This idea leaned heavily on the concept that the Sendero would be a means to connect these often-small communities to the outer world. Additionally, all
interviewees acknowledged the positive benefits that tourism could bring to the communities, but as seen previously in Figure 16 there were concerns related to its unhindered growth as well. Although communities hoped to generate more economic opportunity from tourism, they feared becoming a touristic hotspot like Monteverde if the influx is not well-managed. We found that currently the greatest obstacle to promoting the trail, which Figure 19 identifies as being a common touristic concern in the Monteverde region communities, is the lack of available information. Without these resources, it will be difficult to tap into the global trekking market.

Figure 18: Breakdown of categories in 'Benefits' of SP
Upon concluding these interviews, we better understood the feelings, concerns, and priorities these interviewees had in relation to the Sendero Pacífico. This was necessary for our project to help inform the materials that would be best suited to assist in the development of the Sendero. However, it is important to note that the findings presented here encompass only the views of the interviewees.

4.2.2. Monteverde Survey Findings

From our surveys described in Section 3.2.2, we found that participants' opinions about the Sendero echoed our interview findings from Section 4.2.1. As seen in Figure 20, participants identified the primary benefits of the trail as connecting communities as well as providing economic benefits. It was clear to the team that although there is confusion about the exact mission of the Sendero, various individuals recognize that this trail can bring multiple people and
communities together. Ultimately, this creates the potential for the Sendero Pacífico to grow into an initiative known for its educational and environmentalist benefits.

![Survey results for Identified Benefits]

*Figure 20: Survey results for Identified Benefits*

Through the post-survey, we found that various individuals identified the purpose of the conference as a means of connecting with people (see Figure 21). However, we found that the split of the responses reflected the idea that these participants were considering short- and long-term goals for the Sendero. Short term goals being the discussion of concerns and learning about the trail and long term being the development of a plan for the future and the connection with others. This is an important concept due to the fact that for this project to succeed, it will need its supporters to be planning for the future as well.
Additionally, we identified that the WTN’s role is considered to entail the development and promotion of the Sendero Pacífico. Figures 22 and 23 show that these participants desire the WTN to provide material resources to help develop the trail as well. Taking this into consideration and examining the participants’ responses, we found that these communities are looking to identify and support a leadership group. They are looking towards the WTN for leadership not only because of their global experience, but also because of the history the WTN has had with the Sendero Pacífico. Lacking a strong local leadership presence along the length of the trail has led some individuals to wonder how they will move the project forward.
We found that the current method of promotion of the Sendero Pacífico is mainly through word of mouth, thus making it very difficult for interested individuals to learn about the Sendero. This was supported by 45.5% of post-survey respondents indicating that they had learned about
the project from a friend and 36.4% indicating that they had learned from an affiliated member (Figure 24). Community members understand that this is not the most effective way of sharing information about the trail, which is thus reflected in the fact that participants identified publicity as being one of the next most important steps in the development of the Sendero. We utilized this knowledge to help compile the relevant information that would be important to share with the communities as well as potential trail users.

![Survey results for Hearing about the Sendero Pacífico](image)

**Figure 24: Survey results for Hearing about the Sendero Pacífico**

4.2.3. Community Conversations

Through our attendance of the Monteverde conference and community meetings in San Luis, Veracruz, Santa Rosa, La Colina, and Costa de Pájaros, we were able to further identify each community’s motivations and concerns towards the Sendero Pacífico.
Monteverde Conference Findings

Through our observations of the conference, we found that although the communities of the Sendero Pacífico have had minimal opportunities to gather as a collaborative group, the majority of participants actively participated in discussing the future of the Sendero. The ideas the group settled on reflected similar attitudes and opinions to those seen in the individual interviews, however it was clear that the collaboration of the conference influenced these opinions as well. As described in section 3.2.3, the structure of the Monteverde conference took on the form of presentations about global trails, a round table discussion among the local communities, and finally a breakout brainstorming session.

The purpose of the presentations was to give the local communities a global perspective on trekking. Seeing international representatives sharing their own obstacles with trail development as in Figures 25 and 26 demonstrated to these communities that it was possible to overcome seemingly insurmountable issues.

Figure 25: Sustainability in the South Coast  Figure 26: Map of the National Blue Trail of Hungary
Throughout these talks, we observed the locals to be interested as they were exhibiting active listening and taking photos of sections related to the promotion and signage of the trail. Figure 27 showcases a slide that discussed the type of trail user one could expect to cater to when marketing a trail. Participants from Monte Verde were intrigued by these slides and proceeded to photograph them. Another individual was observed to be very attentive as these slides were presented. The observed interest in these presentations supported the idea that the community members were eager to be a part of a collaborative planning process.

The “round table” discussions of the conference aimed to integrate community members into a more in-depth discussion about the challenges facing each of their communities in relation to the Sendero Pacífico. This conversation was meant to prepare the participants for the next brainstorming exercise by having each member share a brief explanation of one challenge. However, participants often deviated and gave a list of challenges as well as potential solutions instead. Though it is common in planning workshops for the timing of events to go awry, we found that it was particularly difficult for this group to stay on track due to their inexperience with these types of events. However, the group was engaged with the moderator, as seen in Figure 28 and their challenges were recorded on a white board and categorized under the three
pillars of sustainability as seen in Figure 29. The transcription of this chart can be found in Appendix L.

After the discussion, the community members were divided into three groups to brainstorm challenges related to one of the pillars of sustainability. The team observed that each
brainstorming group had different dynamics depending on its members, their knowledge of the project, and their priorities. For example, the “Social” group had members from three different communities, but they closely collaborated and listened to one another’s ideas. If an idea was not agreed with, they respectfully discussed it and determined if it would be included on the list. We concluded that depending on the group members and how vocal they were, particular ideas rose to the top. In Figures 30 through 32, we observed that through the use of poster paper the groups were able to more actively participate in the brainstorming process.

*Figure 30: Environmental Brainstorming*  
*Figure 31: Social Brainstorming*

*Figure 32: Economic Brainstorming*
After the individual brainstorms, the groups came together and took an active role in prioritizing their concerns. Colored dots were used to express the importance of an idea to an individual. The use of these dots can be seen in Figures 33-35.

![Figure 33: Demonstration of dots by Nathaniel Scrimshaw](image1)

![Figure 34: Individual Participation](image2)

![Figure 35: Group participation of dots](image3)

From our observations, we drew the conclusion that it is plausible that prioritization may have been influenced by social pressure if an individual felt they were not qualified enough to make an informed choice. For example, if the group majority prioritized one concern, individuals...
left to vote tended to prioritize the same concern due to the perception that it is important to others.

Figure 36: Brainstorm of solutions

Following the prioritization of these ideas, the participants worked collaboratively to think of solutions to the highest rated challenge. The translated transcription of the brainstormed challenges and solutions seen in Figure 37-39 can be found in Appendix K.

Figure 37: Economic challenges and solutions
The team observed that as a large group, the participants were hesitant to begin brainstorming solutions and often looked at Nathaniel Scrimshaw for affirmation. We concluded that this was likely due to reasons including that he is a long-trusted member of the project, he understands the Sendero Pacífico project better than almost anyone else, and he has had experience leading similar meetings.

The greatest challenges the groups identified under Environmental, Economy, and Social were reforestation, informational resources, and a risk plan, respectively. Although mentioned during the individual interviews, these challenges took a different priority during the conference.
Reforestation had been seen as a potential benefit with the interviewees but had not been prioritized as high as the educational value of the trail. Encouraging reforestation, however, would lead to the concern of cattle impact to be addressed. Informational resources were the main improvement identified by the interviewees as well. A risk management plan to use in case of emergencies (i.e. getting lost, injured, or natural disaster) was a surprising focus as it was not a primary concern during the interviews. Throughout the discussion, we noted by participants’ body language that community members were often unsure about how to proceed with the conversation and attempted to direct their comments at the moderator.

The team concluded from the observations of this conference that there is a high level of interest among communities to pursue the Sendero Pacífico project. However, the main point of contention relates to how to proceed. Without the Alliance taking on a stronger leadership role among the communities, it will be especially difficult for the newer communities to understand how best to get involved and work towards addressing the issues identified during the conference. The team found that for the Sendero Pacífico to move forward, it will first need to achieve its mission of better unifying the communities.

**Sendero Pacífico Community Attitudes and Opinions**

The meetings the team observed after the conference varied from being informal presentations to conversations between one or two interested individuals from each community. From our observations, the team found that all community members were interested in supporting the Sendero Pacífico project, but due to each community’s stage of development their actions were limited. Therefore, every community expressed concern related to their stage of development. Appendix N documents the key ideas from each of these community meetings.
In San Luis, the general structure of the meeting followed introductions, a brief presentation, and finally informal conversations throughout the course of the evening. As the Task Team, Lebanese Mountain Trail Association (LMTA) members, and San Luis representatives shared their experience with trails, most individuals were observed to be highly interested in the exchange through their body language.

Throughout the presentation we observed that San Luis is a strong, community-oriented town. It was evident to the team that they valued the land they lived on and sought to encourage others to appreciate the beauty of the land without overexploiting it. An important feature in San Luis is the San Luis Field Station. Situated near Finca Virdana, it has the potential to serve large groups of students and hikers in the future, however at the moment it is still in the process of being fully integrated into the project. The team observed that this station is large and spacious and can likely serve as a hub for hikers in the future. The primary points of discussion during the impromptu conversational sessions, as seen in Figure 41,
were the future plans for the field station and its economic viability. At this moment in time there was no business plan created for the long-term sustainability of the station. From our observations in San Luis, it was clear that they were at a point in their involvement with the Sendero where they would like to begin seeing the development of its economic potential, however there is a lack of direction in how to explore this.

Within Veracruz, we observed the progression of a more informal conversational discussion. Attended by two primary stakeholders, the main concern related to the economic relationship between pursuing reforestation and the cattle in the area. Many landowners in the area rely on cattle for their income, so ideas that could potentially allow for the Sendero to have enough economic benefits for farmers to be able to limit their cattle were discussed. We observed that the participants in the conversation seemed intrigued with the idea of having an exchange of products along the Sendero to stimulate the economy and encourage collaboration between communities. Additional concerns that were presented were related to the physical infrastructure of the trail as well as with the future negotiation of land rights.
The community meeting in Santa Rosa coincided with the inauguration of the Friendship Trail with the LMTA as seen in Figure 43. Although few people aside from the Santa Rosa Development Association (SRDA) had knowledge about the Sendero Pacífico, we observed several other community members appear at this event to support their fellow community members. We found that this support will be invaluable in the future as Santa Rosa continues to grow their involvement. The team also observed that during the meeting between the Task Team and SRDA there were positive and collaborative interactions between members of Santa Rosa and Veracruz. These members were sharing their approaches to common problems and actively asking for feedback from the Task Team. The overarching concerns within this community related to how to construct better trail infrastructure. We found this community to be highly proactive in the development of the physical infrastructure of their section of the trail. However, considering their new trail section had several river crossings, they were interested in understanding how they could better create alternate routes. Figure 44 displays the meeting environment that proved to be conducive for a collaborative discussion.
The community of La Colina became aware of the Sendero Pacífico project within the past year. Only one woman within the community has been actively involved with the trail, and she was responsible for the invitation of seven other community members to the discussion we witnessed. The discussion began with introductions that demonstrated how involved each of these members are within their community. While many of them had minimal knowledge of the Sendero Pacífico, each member present was actively involved in the conversation that occurred. After the introduction of the Task Team, the discussion was opened to the concerns of the community members. A common theme of this discussion was the promotion of the trail and how to attract hikers to the area. Many of the community members took active roles in the
discussion of this topic and were providing their own suggestions for solutions. Within this
discussion, members of the community were also asking the Task Team for feedback and advice
on how to improve. Throughout the conversation all members involved sounded interested in the
trail and the potential that it could provide for their community. Reforestation was another theme
that was brought up but discussed in less detail than in previous community meetings.

Costa de Pájaros is another young community in the Sendero Pacífico project. A woman
heavily involved in local community initiatives has spearheaded the efforts to involve this
community in the project. The
meeting in this community
involved speaking with three
locals who have had experience
with grassroot initiatives as well
as rural tourism. Passionate
about their causes and
businesses, we saw that there is
a great potential for them to help further the local progress of the Sendero. We observed that the
majority of this meeting focused on the history of these local initiatives and how these
individuals helped grow their organizations. When speaking about the Sendero, the locals were
interested in the idea of growing coastal rural tourism in the region through the promotion of the
trail. The team found that this community was highly knowledgeable about touristic activities
and encouraging their involvement in the Sendero Pacífico could be highly beneficial. Figure 46
shows the Task Team as they conversed with a local leader (not pictured).
Through our observations of these meetings, we found a number of the themes from the Monteverde conference to be reintroduced. Whether through a formal or informal setting, the communities independently identified their primary concerns with the Sendero as well as the benefits they hoped to reap from the future development of the trail. We also found that their interests and concerns correlated with their time of involvement and general experience with touristic endeavors. For example, a new community like Santa Rosa was eager to learn about trail infrastructure recommendations, but a community like Costa de Pájaros was interested in knowing how the trail could also help support their mission to help the marine life in the Gulf. Although every community had slightly different motivations, we found they were all united under similar attitudes and opinions toward the Sendero.

4.3. Trail Guide

Through the completion of our previous objectives as well as informal conversations while hiking, it became clear that there was no centralized source of information about the Sendero Pacífico. This information includes: the physical location of the trail, how to hike the trail, lodging along the trail, and contact information for services along the trail. In response to the lack of available information, we concluded that a trail guide would be a user-friendly way to convey the details of the trail. This trail guide will also function as promotional material for the communities along the trail who do not see many visitors. An influx in visitors to the trail will enable these communities to further develop it.
4.3.1. Content

After establishing the necessity for a trail guide, the next step was to decide what information would be important to include. Through a comparison of various other trail guides including the Lebanon Mountain Trail’s (LMT) (2020), the South West Coast Path’s (SWCP) (2020), and The Trek (2020), Table X was created. It was then used to determine the necessary information for a trail guide and whether such information was available for the Sendero Pacífico:
Table 5: Trail Guide Content Comparison

**Key:** ✓ = Information Available  X = Information Unavailable  ? = Information Unclear  NA = Not Applicable

<table>
<thead>
<tr>
<th>Criteria</th>
<th>LMT Guide</th>
<th>SWCP</th>
<th>AT Guide</th>
<th>SP</th>
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<td>✓</td>
<td>?</td>
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<td>✓</td>
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<td>✓</td>
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<td>X</td>
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* Information is only accessible through guide purchase
By analyzing different trail guides, we were able to see what information is typically included. Through this analysis and our prior knowledge, we were also able to eliminate categories that would not apply to the Sendero Pacífico such as “resupplying” and “outfitters”. At present, the trail guide is specifically formatted for a “Thru-Hike,” which means that it takes the trekker through the entirety of the trail, thus allowing trekkers to get the full experience. Much of the information that was deemed important to include in the guide was learned through conversations with our sponsor who has been long involved with the trail. Participant observation when hiking the trail allowed for the trail guide to include specific recommendations for the hiker. Conversations with other hikers were also utilized to get opinions from the demographic that will act as users of this guide.

It became clear to the team that guides were necessary for specific sections of the trail. This is due to the general lack of signage as well as the lack of a clearly defined trail in specific sections. For one specific section in the San Luis region of the trail, there is also a policy in place that requires all hikers to have a guide. However, we also found that contacting guides and services along the Sendero Pacífico is difficult for those interested in hiking the trail. Currently, most hikes are guided by one individual who advertises his treks through word of mouth. Independently finding resources about guides online is next to impossible which exemplifies that lack of published resources for the trail. Our trail guide will alleviate this problem by including a section on contact information for lodging services along the trail, as well as a section to include contact information for individual guides once this resource becomes available.

Another goal of the trail guide is to promote the communities along the trail. This goal led to the addition of sections on each individual community that showcases their social and
geographic features. While hiking the trail as an outsider gave us a superficial outlook on it, we also had the opportunity to talk to many individuals involved in trail organizations who have done work to improve the trail. Speaking with these individuals gave us insight on what each community viewed as their most prominent local attraction which provided us with information to include in the trail guide.

The trail is still under development which means the guide will require updates as development continues. However, we have built in a structure that allows for information to be added as it becomes relevant.

4.3.2. Structure & Format

A centralized source of information such as a trail guide is only valuable to a project if people can easily search for it and find answers to questions they may have. Therefore, the structure and format of the trail guide was almost as important as the content. Research on trail guides for successful trails such as the Appalachian Trail, the EURO Trail, and Lebanon Mountain Trail demonstrated appealing and user-friendly structures and styles. For example, guides for the Appalachian Trail were split up by location or region. We drew inspiration from this structure and divided our trail guide based on the area covered on each day of the hike due to the vast differences between each day. The guide for the Lebanon Mountain Trail uses more physical directions; for example “take the footpath then the paved road to reach Ain Aakfol. Continue north east for about 4km” (Lebanon Mountain Trail, 2020). We did not implement this concept since a majority of the Sendero Pacífico either requires a guide for directions, is undefined, or is continuously changing. The EURO Trail used various of images as a way to increase a reader’s interest and desire to walk the trail. We decided to also use many images as a
means to visually show the trail rather than by descriptions as well as to showcase interesting or important features of the trail.

4.4. Community Report

In this section, we discuss the principles and findings that influenced the development of our community report, located in Appendix O. The majority of these findings were determined through the results in Section 4.1 and 4.2. This report was created to address the lack of centralized resources available to aid the development of the Sendero Pacífico.

4.4.1. Motivation

As previously stated in Section 4.1, we utilized a semi-structured interview and direct observation to determine the current state of the management and infrastructure of the trail. The interview was conducted with a former Sendero Pacífico community member who was involved with the trail and who gave us insight into the structure of the management system. Our own observations gave us a better understanding of the physical infrastructure of the trail. Taking the results and findings presented in Section 4.1 into account, we found that the trail’s current management structure is disjointed, and there is no clear point of contact from whom to get information about the trail or the communities involved. Therefore, we found that communities would benefit from having a central source of information that collects common concerns and information about the communities along the trail to foster collaboration amongst them.
4.4.2. Development of Content

To develop the content of the community report, we utilized the findings and results presented in Section 4.2. As previously stated, we utilized semi-structured interviews as well as direct and participant observation of community meetings to determine the attitudes and opinions of community members about the trail. The results outlined in this section allowed us to analyze particular attitudes and opinions on a community by community basis. These attitudes and opinions included: the mission of the trail, concerns about future development, potential improvements, benefits of the trail, and thoughts on tourism. We found that these would be the most beneficial sections to include in the report as communities often had very similar concerns and thoughts although they may not have been aware of it. By consolidating these attitudes and opinions into a report, it could allow communities to see that they are not alone in their concerns and potentially open more channels of communication among them. Additionally, from our findings we saw that communities had limited interaction with one another outside of the Alliance meetings and personal interactions. Thus, by including information about the history and involvement of each community in our report, it could encourage communities to learn more about one another as well.

The format of our report was based on the inclusion of these attitudes and opinions for each of the regions of the trail. This division allowed us to compare and contrast the different regions as well as the individual communities within each region. The report begins with an explanation of the goal we set out to complete and the purpose of the informational report. The introduction then touched on the topic of sustainable trails to establish what the final goal is for the Sendero Pacífico. The body of the report consists of community profiles with the purpose of providing more knowledge to each community about other sections of the trail. Each of these
profiles synthesizes the results gathered from the interviews as well as from the community meetings. We opted to include brief bulleted lists alongside explanations to allow community members the opportunity to capture the most important points from the report. Finally, we ended the report with a brief list of recommendations that each community could follow in the future. These ranged from sending more representatives to Alliance meetings from La Montaña de Coyolito to creating more trail signage in all the communities. It is important to note that the knowledge of this community report is limited by the information gathered through our interviews and observations, but it may still offer valuable insight to the local communities.

4.5. Summary

From the results we gathered from the execution of our interviews, observations, and surveys we developed two resources to potentially empower local communities to further develop the Sendero Pacífico. These resources reflect the attitudes and opinions we found each community to hold in respect to the trail and enabled us to form the conclusions and recommendations we will cover in the next chapter.
5. Conclusions and Recommendations

Our project compiled and analyzed the community attitudes and opinions that each community had in relation to the Sendero Pacífico to develop materials that could empower each community to further develop the trail in the future. Based on the results we gathered, we developed community specific recommendations that we included in our community report (Appendix M) as well as recommendations for the other deliverables we developed. These recommendations should help inform communities about potential actions they could take within their communities as well as provide them information on how to continue the development of informational resources about the Sendero Pacífico.

5.1. Trail Guide Recommendations

The intention of the trail guide is to lower the barrier of entry to hiking the trail by providing information to hikers and promoting trail communities. The trail is currently in its early stages of development. This means key information is either currently unavailable or subject to change. Accordingly, the trail guide is structured to include such information and updates in the future. Consequently, we recommend that any new information, improvements, or changes to the trail be updated in the trail guide. Crucial information to consistently update includes clear maps, any new or altered routes, and any changes in contact information. In order to cater to a wider audience, we recommend that the trail guide be translated into Spanish.

Part of the difficulty for hikers attempting to go on the Sendero Pacífico is that much of the information is currently made known through word of mouth. To become more accessible, we recommend that this guide is available publicly online on the WTN website. Additionally,
accurate maps should be included along with the trail guide in order to enable more hikers to walk the Sendero independently.

We believe that more hikers would make use of this trail if shorter section hikes were available since shorter time-commitments are less likely to interfere with work or other travel plans. Therefore, we recommend developing itineraries for day and weekend hikes to enable hikers to use the trail in a shorter time period. Adding information on shorter loop hikes would allow hikers to get more out of the trail as well since they would then be able to explore different aspects of the Sendero and surrounding communities.

To strengthen and expedite the development of the trail, we recommend that communities bolster their communication with each other and consistently send representatives to Sendero Pacífico Alliance meetings. This will create a flow of knowledge among communities and ensure each one stays up to date. Further, we recommend that community members who actively participate in the trail development work try to involve additional people from their area. They can use the trail guide as a way to provide more information on what the trail is.

5.2. Informative Community Report Recommendations

Through the collection of information and community attitudes and opinions we concluded that the most effective way to promote community participation would be through an informational report. This report compiled the attitudes and opinions of community members in various regions surrounding the trail. The report was targeted towards the Alliance of the Sendero Pacífico as well as other community members involved in the trail or with interest in increasing their involvement. We recommend that this report be used as a source of centralized information for all of the communities along the trail. This report is not only intended to encourage
improvements along the trail but also to inform community members about the concerns in other communities along the trail. This resource can be used to provide communities with a sense of unity by providing them more knowledge about the attitudes and opinions of others in the communities around them.

Along with providing information for the use of relevant communities this report also makes recommendations about the next steps a community can take in the improvement of the trail (see Appendix P). The advice is based on the priorities of the communities as well as what could reasonably be achieved by each individual community. These recommendations focus on the unity of the communities to establish a baseline of management and infrastructure to allow for future improvements to the trail.

5.3. Conclusion

The goal of this project was to determine all community relationships to the Sendero Pacífico and the World Trails Network (WTN) in order to develop resources that could empower communities to increase their involvement with the Sendero. By analyzing the community attitudes and opinions presented through interviews and seen through observations, the team determined that the most valuable way to empower these communities would be to contribute to the informational resources at their disposal. As a result, the outcome of this project synthesized each community’s thoughts and concerns as well as the state of the trail in the form of a trail guide and community report.
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Appendix A: Sponsor Description

The World Trails Network (WTN) (2019) is an international organization with two regional hubs, WTN-Hub for the Americas (WTN-Americas) and Asia Trail Networks. The WTN relies on the work of dedicated members and volunteers to carry out their mission. This mission is to create and maintain a network of sustainable, well-maintained trails that “further the interests of the trails industry for the benefit of all” (para. 4). WTN’s core objectives are to promote, preserve, and perpetuate trails. By fostering a worldwide network of trail enthusiasts and organizations, they are able to globally improve trails under a unified goal. They strive to create a global trail network that furthers “the trails industry” (para.4).

Being an international organization, WTN (2015) has various subdivisions focused on advancing specific aspects of its overarching mission. Aside from the regional hubs, there are eight international Task Teams within the organization with certain agendas. We will be collaborating with a sub-team of the Trails & Sustainability team, called the Rapid Assessment (RAP) team, whose main objectives are to promote the development, maintenance, and best practices in sustainable trail development. Figure A.1 depicts the organizational structure of the WTN.

WTN-Americas (2018a) is responsible for the promotion and collaboration between two International Field Schools in New Hampshire, USA, and Monteverde, Costa Rica. The Costa Rican field school is run by five International Trail Fellows as well as an International Field School Coordinator. We will be directly working with the Costa Rican field school throughout the duration of the project.

The WTN (2015) has various members leading each of its subdivisions. The International Board overseeing the organization as a whole consists of eight members. There are eight
different Task Teams and each team has a specific chair. WTN-Americas has a seven-member Board of Directors as well as eight fellows and collaborators. Besides these leadership groups, the majority of the WTN members are volunteers from around the world.

To successfully maintain the network it has established, the WTN (2019) must provide a variety of resources to its constituents. The global sector of the WTN works with both stakeholders and other trail organizations to raise awareness for trails and the funding that they require. Both the international organization and WTN-Americas accept donations to fund their projects. While the organization is a non-profit, its acceptance of donations and other fundraising efforts allows the organization to provide monetary support to the trails involved in their network. The WTN has also consolidated a number of useful resources on their websites and social media to better inform both potential sponsors and their members about their mission. Their website summarizes their worldwide involvement as well as information relating to each of their regional hubs.

Aside from the WTN, there are various organizations in Costa Rica that promote a similar agenda. The Tropical Science Center (TSC) (2019) works to manage sustainable trails and natural spaces throughout Costa Rica. This group is not affiliated with the WTN, but they do partner with other organizations with similar goals. Objectives promoted by TSC, its affiliates and the WTN include preserving and protecting the forest and watersheds and increasing trail infrastructure. Similar to the WTN, the TSC also provides financial resources and environmental education to locals and visitors.

Partners of the WTN (2018b) include the Children’s Eternal Rainforest (BEN), Bruce Trail Conservancy, San Luis ADISL, AMC and el Camino de Costa Rica. The founding organization of BEN, the Monteverde Conservation League, aims to “conserve, preserve, and
rehabilitate tropical ecosystems and their biodiversity” (Burlingame, 2016, p. 9). They provide environmental education and focus on improving the land through reforestation. El Camino de Costa Rica (n.d.) stands apart as a tourist group that focuses on sustainable infrastructure development. Other groups that have focused on maintaining the Costa Rican forests and restoring deforested areas are the Costa Rican Conservation Foundation (CRCF) (n.d.) and the Arenal Tempisque Conservation Area (ACAT) (n.d.).
Figure A: Organizational Structure of the WTN. Adapted from “Task Teams” by World Trails Network, 2015.
Appendix B: Interview with Rachel Cheatham

Goal: Determining the current infrastructure associated with the Sendero Pacífico

Preamble:
We are a group of students from Worcester Polytechnic Institute who are working with the World Trails Network and the International Field School of Costa Rica. Our goal is to determine the most effective ways participatory community planning can be implemented for sustainable trail infrastructure, design and maintenance in Costa Rica. We will specifically be working with communities along the Sendero Pacífico, which has varying levels of trail infrastructure.

All questions in this interview are voluntary, and you do not have to answer any question you are uncomfortable with. If at any time you would like clarification or would like to ask any questions, please stop us. If you would like, we can send a copy of our final findings via email. We hope that this interview will take no longer than 30 minutes.

Consent:
1. Do we have your permission to audio record this interview?
   a. If at any time you would like us to stop recording to keep something off the record, please let us know.
2. Do we have your permission to take written notes of this interview?
   a. If at any time you would like us to stop taking notes to keep something off the record please let us know
3. Do we have your permission to cite you directly in our paper or would you like to be left anonymous?

Questions:
1. Who currently manages the Sendero Pacífico?
   a. How is the trail maintained, developed, and managed?
2. What management systems do they have in place?
   a. Are there different systems for different levels of infrastructure?
      i. If yes, what are the systems?
3. What aspects of infrastructure are currently in place? (e.g. signage, trail design, food, lodging, guiding, reservation system, and community organizations)
4. What are you looking to improve in the: Montverde, San Luis, Veracruz, Santa Rosa, and Las Colinas sections of the Sendero Pacífico?
5. Who will be responsible for the updates to the trail? How will this be done?
6. What role(s) do the communities play in the management of the trail?
Follow Up Questions:

1. Who is on the Sendero Pacífico Board of Directors? What is the difference between this, and the Alliance members?
2. What safety concerns do the communities have in regards to an open access trail?
3. What efforts have been made to reach out to these individual communities to teach them about proper sustainable maintenance?
4. In relation to the instruction given to these communities, is there a better way to reach these members to make progress towards proper maintenance?
5. Is San Luis interested or not interested in encouraging blazing along the trail? Is this because they are not open to open access trails?
6. Is the SP Safety Committee separate from SP-BOD? If so, how are they different?
7. Is there any accountability for who attends the Alliance meetings? If so, how?
8. What is the WTN ridge running program?
9. How do community organizations communicate and interact with one another? Or is it only through Alliance meetings?
10. How do you believe that the concept of lodging and food should be approached if not as a part of the SP project?
11. What is the next most important step, in your opinion, that should be taken to move forward the SP project?
12. What do you think about the upcoming workshops? What do you think would make them effective?
13. How will lower communities view the joint efforts of the MCF and WTN differently than the current efforts coming from San Luis
Appendix C: Direct Observation of Trail Infrastructure

Goal: To evaluate the current state of the infrastructure of the Sendero Pacífico. Categories are broad due to the range of different infrastructure along the trail.

Guidelines:

1. For each day spent hiking, take observations of:
   a. Physical trail state (i.e debris, cleared paths, muddy, type of trail, etc.)
      Circle one: (Good/ Bad)
      Notes:
   b. Signage (i.e maps, trail signs, directional signs, etc.)
      Circle one: (Present /Absent)
      Notes:
   c. Lodging (i.e hostel, house, facilities, etc.)
      Circle one: (Present / Absent)
      Notes:
   d. Blazes (i.e marks on trees, cairns, etc.)
      Circle one: (Present/ Absent)
      Notes:
   e. Food Locations (i.e restaurants, pulperias, food availability, etc.)
      Circle one: (Present/ Absent)
      Notes:
   f. General hiking experience (i.e difficulty, enjoyment, etc.)
      Circle one: (Good/Bad)
      Notes:
Appendix D: Direct Observation Results

**Goal:** To evaluate the current state of the infrastructure of the Sendero Pacífico  
MV = Monteverde; SL = San Luis; VC = Veracruz; SR = Santa Rosa; LC = La Colina;  
MdC = La Montaña de Coyolito; CdP = Costa de Pájaros

<table>
<thead>
<tr>
<th>Day</th>
<th>Location</th>
<th>Observations</th>
</tr>
</thead>
</table>
| 1   | MV to VC | - Monteverde (MV) and San Luis (SL) can be seen as one unit  
  - Strenuous hike (very hilly)  
  - Signage at beginning of hike  
  - Need guide for a section  
  - Through cattle pastures  
  - Certain sections of the trail weren’t very well cleared  
  - Hiked with a 12-person group  
  - Our team  
  - Our sponsor  
  - Father and son living in MV for the year  
  - Film director from NY  
  - Workers for U.S. embassy in San Jose  
  - Man, from Spain staying in MV  
  - Mostly roads if you go from Santa Elena to the kiosk in front of Finca Virdana  
  - MV doesn’t have its own organization; it is lumped with San Luis as well  
  - MV section doesn’t need as much work because it has a different tourism focus  
  - There is a kiosk at the beginning of Finca Buenos Amigos  
  - Last updated two years ago, map is in disrepair  
  - Simple signs; confusing orientation of the map  
  - Signifies the start of the “San Luis” portion of the trail  
  - There is another kiosk before you reach the field station, also a few more signs on the Finca Virdana property that define Sendero Tijerilla  
  - There are signs posts that will be updated in the future with new maps  
  - Trail is in a good state in Finca Virdana  
  - Relatively well cleared, kept free of cattle  
  - 3 miradores on the property, lets you have a good view of the valley  
  - San Luis portion is up to around Melvin’s farm  
  - Need a guide for the section of trail after Melvin’s farm which begins to get into the cattle farming area  
  - There can also be dangerous winds around Pipe  
  - No defined path in this region  
  - Cow pastures, so there are also ticks  
  - Had to pass a few cattle gates with simple fence post design |
- Passed through Children’s Eternal Rainforest as well
- First day was steep, mountainous terrain
- Veracruz had nice, basic accommodations but lacked electricity
- The steepest day of the 4 day hike.
- It goes through the SL hiking loop >> old road >> Children’s eternal rainforest >> cow pasture.
- Currently needs a guide
- Peak is undoable from March till ____ but top areas is beautiful
- Otherwise it is still very windy
- Needs blazing. Mainly through the cattle pasture section
- Once you get to the hostel it is not really in the community if there is one unlike Santa Rosa (SR)

<table>
<thead>
<tr>
<th>2</th>
<th>VC to SR</th>
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| - Beginning of hike was rural road (very hot)  
  - No signage  
  - Then led into hike through woods  
    - Lots of crossing over a river  
    - Decent amount of hiking up/ down hill  
  - Took alternate path  
    - Normally through cow pasture  
    - Less ticks on way we went  
  - Met Luis  
    - Brought us through the alternate forest route  
      - Less hot path  
    - Undefined new trail  
      - CANNOT walk without guide  
      - Not viable in rainy season (river)  
      - Limbo through barbed wire  
  - Part after forest:  
    - Still need guide  
    - VERY hot; in direct sunlight  
    - Need to drink more water  
  - Left Veracruz at 8:30 am  
  - Reached waterfall at 1:00 pm  
  - Walk from waterfall to Santa Rosa was about 15 mins  
  - **Had unnecessary waiting time due to forgetting of pants**  
  - Reached Santa Rosa (at 2:00 pm)  
    - Small town  
      - Church, community center, bar  
      - People at bar were very willing to talk to us  
    - Newest community  
    - Caring, nice people  
    - People involved in project are very dedicated  
    - Quiet town: they don’t want to lose that  
    - Would like more job opportunities  
    - Open community; very kind |
• Don't really get tourists
• Tested a new route through forest path; still needs a lot of work like erosion control
• No signage on this new portion
• At first walked through rural roads; passed by Jose’s house in San Antonio and eventually met up with Luis
• These roads were very hot, even though it was earlier in the morning; there was very little shade
• Forest path had just been marked a few days prior; marked by red ribbons; aside from that there was no signage along the entire trail
• Had many river crossings which would not be ideal during the rainy season
• Very beautiful terrain, like the first day’s forest
• Lots of shade
• Path was not well cleared, there were a lot of rocks on the ground and a lot of leaves that could potentially hide snakes
• Did catch a glimpse of a couple of capuchin monkeys
• After getting out of the forest, walked through more pasture where the ticks can be found; however, we missed the majority of this type of land with this forest shortcut
• Reached a waterfall outside of Santa Rosa, locally known as “El Salto”
• About a 5-minute walk to Santa Rosa from there
• Santa Rosa is a small pueblo, very authentic and friendly
• Small population
• Lots of energy in the town to bring in more tourists
• Lodging was in a spacious room that was pretty comfortable due to the wind
• Have electricity, shower, two bathrooms
• Meals were delicious, no restaurants in town
• Started off on gravel roads.
• There are several road splits so a good map would be needed.
• Could continue with the roads or move into the forest
• To do this you will currently need a guide
• This section goes starts with going through a farm gate >> the forest >> cattle pasture >> another gate at the end >> rural road
• Cow pastures are very hot
• Option near the end to go to the waterfall
• Waterfall is great
• About 10-minute walk from Santa Rosa
• Santa Rosa is a very nice rural community

<table>
<thead>
<tr>
<th>3</th>
<th>SR to LC</th>
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<tbody>
<tr>
<td>• About a 5-hour hike (10-11 miles)</td>
<td></td>
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<tr>
<td>• Left Santa Rosa at 7:30 am</td>
<td></td>
</tr>
<tr>
<td>• Arrived in La Colina at 12:30 pm</td>
<td></td>
</tr>
<tr>
<td>• Very hot walk</td>
<td></td>
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</tbody>
</table>
- Walked along rural roads
- Small section of paved road
- Attacked by a nest of wasps
- Heat can be oppressive
  - Leave early in the morning to try and avoid the worst of the heat
- Albergue in La Colina is very nice
  - Outlets, lights, small kitchen area
  - Very nice bathroom (shower, toilet, sink)
  - 16 beds in bunk room
- Shortest day of walking
- However, it was very hot and there was very little shade on the rural roads
- Completely different experience from the first two days
- Here it is important to have a lot of water, especially on sunny days
- Roads were not very busy
- Crossed paved section as we cut through Guacimal
- Went over a rickety bridge that gets replaced every year after the rainy season
- Possible attraction in the town: River, sunset spot
- Very small and friendly village
- Accommodations were very nice
- Hotter than the first 2 days
- Starts off on roads for a while including a busy road
- That road will have to be walked on for more time it is the rainy season
- Otherwise it will go over the river. A good place to relax
- Continue walking on gravel roads
- There are some signs to note when turning off the main road
- LC is a nice small community and the hostel is nice
- Can probably ask to see the view

<table>
<thead>
<tr>
<th>4</th>
<th>LC to CdP</th>
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<tbody>
<tr>
<td>Walked ~ 15 miles</td>
<td></td>
</tr>
<tr>
<td>Left La Colina at 7:00 am</td>
<td></td>
</tr>
<tr>
<td>Arrived at lunch ~12:30 pm</td>
<td></td>
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</tbody>
</table>
  - Were there for ~ 2 hours |
| Arrived at CdP ~ 5 pm |
| VERY hot hike |
  - Decent section on paved road |
  - Direct sunlight |
  - potential dehydration due to heat |
| Hike to lunch stop was ~10 miles |
  - Long section along paved road |
  - Very little shade |
| Hike after lunch was ~ 5 miles |
  - Easier than first part |
- Was later in day
- More shade
- One of the hottest and longest days
- This was done along rural roads and paved roads
- Had to walk along a highway which is very dangerous
- Rural roads were dirt roads and had some traffic
- There was little shade to be found
- Water very important on this day as well
- Only signage to be seen was when we got closer to La Montaña de Coyolito which was done by the local women’s association
- Had to rest multiple times on the way to lunch
- Had to make sure K didn’t faint
- Lunch in Coyolito was very nice and the people were very kind and interesting
- Afterwards walked to CdP both on rural and paved roads
- After an intersection, crossed onto paved road until the arrival to Mariposas del Golfo
- Have two buildings to house people
  - 10 beds in one building
  - 4 mattresses in the visitor’s center
- Very delicious food
- Lots of local activities that can be done by hikers
- Alternate route on second hike:
  - Very woodsy, good change of pace
  - Lots of shade
  - Landscape was more interesting than the first day
  - Did not have to walk alongside much road
  - Got to walk alongside the riverbank
  - Also passed through very, very small villages
  - Saw various beautiful, flowering trees
  - Cannot pass without a guide even though it mainly uses public roads; there are no maps and only a local would know
- The longest day
- Regularly walks on the road
- We were able to get go on a different route through farmland and a biking trail
- Crosses a river that would be undoable during the rainy season
- Currently it still needs more blazing but would not be too hard as the trails are already defined
- Stops in Coyolito
- Coyolito could be a possible place to stay and not just eat lunch
- Continued the road for about 5 more miles
- A possible reroute could be possible over the mountain. Possible land issues
- The coast is amazing especially at sunset
- Lots of tour opportunities
Appendix E: General Interview Protocol for Hike

Preamble:

We are a group of students from Worcester Polytechnic Institute who are working with the World Trails Network - Hub for the Americas. Our goal is to determine the community relationships to the Sendero Pacífico and the World Trails Network to develop resources that could empower communities to increase their involvement with the Sendero Pacífico. We will specifically be working with communities along the Sendero Pacífico, which have varying levels of trail infrastructure.

Consent:

1. Do we have your permission to record audio of this interview?
   a. If at any time you would like us to stop recording to keep something off the record, please let us know.
2. Do we have your permission to take written notes of this interview?
   a. If at any time you would like us to stop taking notes to keep something off the record, please let us know.
3. Do we have your permission to cite you directly in our paper or would you like to be left anonymous?

   All questions in this interview are voluntary and you do not have to answer any question you are uncomfortable with. If at any time you would like clarification or would like to ask any questions, please stop us.

If you would like, we can send a copy of our final findings via email. We anticipate that this interview will take no longer than 30 minutes.
Preamble:

Somos un grupo de estudiantes de Worcester Polytechnic Institute quien están trabajando con el World Trails Network - Hub for the Americas. Nuestro objetivo es determinar las relaciones que comunidades tienen con el Sendero Pacífico y World Trails Network para crear recursos que puedan aumentar su involucramiento en el desarrollo del Sendero. Vamos ha estar trabajando con comunidades a lo largo del Sendero Pacífico, el cual tienen varios niveles de infraestructura.

Consent:

1. ¿Tenemos su permiso para grabar audio de su entrevista?
   a. Si en algún punto quisiera que dejáramos de grabar, por favor díganos.
2. ¿Tenemos su permiso para tomar notas escritas de su entrevista?
   a. Si en algún punto quisiera que dejáramos de tomar notas, por favor díganos.
3. ¿Tenemos su permiso para citarte en nuestro reporte final, o quisiera ser anónimo?
   No es necesario contestar nuestras preguntas, y no escribiremos su nombre si no lo desea.

Si usted no está cómodo contestando una pregunta, no es necesario. Si necesita clarificación con una pregunta o quisiera preguntar algo, por favor díganos.

Si quisiera, podemos mandar una copia electrónica de nuestro reporte final por correo electrónico.

Anticipamos que esta entrevista no tarde más de 30 minutos.
Questions:

**English**

1. What is your involvement with the Sendero Pacífico?
2. What do you believe is the mission of the Sendero Pacífico?
3. What concerns do you have about further development of the SP?
4. What improvements would you like to see made on the SP?
5. What are your interactions with the other communities along the SP?
6. What is your opinion on increasing tourism along the SP?
   a. What concerns do you have about increased tourism/trail usage?
   b. Do you feel your community can benefit from increased tourism?
   c. How would you describe your community’s interest in the SP?
7. Would you like to see your community more involved with the SP?
   a. If so, in what ways?

**Spanish**

1. ¿Cual es su involucramiento con el Sendero Pacífico?
2. ¿Cual piensa usted que es la misión del Sendero Pacífico?
3. ¿Cuales preocupaciones tiene de nuevos desarrollos del Sendero?
4. ¿Que mejoras le gustaría ver en el Sendero?
5. ¿Cuales son sus interacciones con otras comunidades involucradas con el Sendero?
6. ¿Cual es su opinión en el aumento de turismo por el Sendero?
   a. ¿Cuales preocupaciones tiene del aumento del turismo o uso del Sendero?
   b. ¿Piensa que su comunidad pueda beneficiarse del aumento de turismo?
   c. ¿Cómo describiría el interés de la comunidad por el Sendero?
7. ¿Le gustaría ver su comunidad más involucrada con el Sendero?
   a. ¿En cuáles maneras?
Appendix F: Guidelines for Content Analysis

Goal: To perform content analysis on the semi-structured interviews we conducted.

Steps:

1. Highlighted interview responses based on recurring categories.

2. Kept count of the communities the interviewees were from within each category.

3. Consolidated categories based on common themes.
   a. Example of the consolidation of themes for the “Concerns” of the trail. The themes identified were Tourism (green), Development (cyan), Security (pink), Organization (orange), Natural Impact (yellow)

   - Concerns of Trail
     - Land rights
     - Cattle
     - Fortify the Alliance
     - Promoting the trail
     - Negative tourism
     - Security
       - Providing enough support to less experienced
     - Future development
     - Funding
     - Involving community
     - Fire
     - Competition
     - Loss of Values
     - Negative impacts to trail

   Figure X. Categories highlighted by common themes

4. Transferred the tally of interviewees and categories to an Excel spreadsheet where each row was an interviewee and an X signified the categories they mentioned in their interviews.
5. This information was then consolidated by the community that each interviewee belonged to.

6. This was then used to visually show each identified theme.
Appendix G: Sendero Pacífico Search Results

sendero pacifico monteverde

About 97,200 results (0.26 seconds)

sanluis.or.cr › pacific-trail

Pacific Trail | SAN LUIS DE MONTEVERDE
The Sendero Pacífico envisions a network of freely accessible hiking trails in Costa Rica located between the Monteverde Cloud Forest and the Gulf of Nicoya in ...

worldtrailsnetwork.org › Trails Atlas › Central America

El Sendero Pacífico (Costa Rica) – World Trails Network
The Sendero Pacífico is a network of freely accessible hiking trails in Costa Rica located between the Monteverde Cloud Forest and Mangroves in the Gulf of ...

www.facebook.com › Pages › Other › Community

Sendero Pacífico ~ Pacific Slope Trail - Home | Facebook
Sendero Pacífico ~ Pacific Slope Trail, Monteverde, Costa Rica. 724 likes. caminar los senderos, compartir la visión ~ hike the trails, share the vision.

www.ticosapata.com › producto › sendero-pacifico-... - Translate this page

Sendero Pacífico en Monteverde – Ticos A Pata
Feb 18, 2020 - Uploaded by Erik Alpizar
El Sendero Pacífico prevé una red de senderos de acceso en Costa Rica ubicados entre el Bosque Nuboso de ...

www.wikiloc.com › ... › Puntarenas › Santa Elena

Monteverde-Guacimal por sendero pacifico Trail - Wikiloc
Apr 22, 2018 - Monteverde-Guacimal por sendero pacifico Hiking trail in Santa Elena,
Appendix H: Pre-Survey for Participants

Goal:
To acquire an understanding of the topics and concerns that meeting participants would like to address.

Preamble:
We are a group of students from Worcester Polytechnic Institute who are working with the World Trails Network - Hub for the Americas. Our goal is to determine the community relationships to the Sendero Pacífico and the World Trails Network to develop resources that could empower communities to increase their involvement with the Sendero Pacífico. We will specifically be working with communities along the Sendero Pacífico, which have varying levels of trail infrastructure.

All questions in this survey are voluntary and you do not have to answer any question you are uncomfortable with. If at any time you would like clarification or would like to ask any questions, please ask.

Questions:
1. How did you hear about the Sendero Pacífico? Select one.
   a. Friend
   b. Social Media
   c. Advertisement
   d. Quaker Meeting
   e. Other (please list):

2. What benefit(s) would you like to gain from the Sendero Pacífico? Select two.
   a. Community Connection
   b. Tourism/Economic Opportunities
   c. Reforestation
   d. Physical Exercise
   e. Educational Opportunities
   f. Other (please list):

3. On a scale of 1 to 5, how much of a positive impact has the Sendero had in your community?
   1 (no impact)  2  3  4  5 (very positive impact)

4. On a scale of 1 to 5, how much of a negative impact has the Sendero had in your community?
   1 (no impact)  2  3  4  5 (very negative impact)

5. What is the role of the World Trails Network in the Sendero Pacífico?
6. On a scale of 1 to 5, how much support would you like to receive from the World Trails Network?

1  2  3  4  5
(no support) (some) (completely supported)

7. What type of support would you like to receive from the World Trails Network?
   a. None
   b. Lead more community meetings
   c. Provide resources such as trail development manuals
   d. Have a designated WTN employee facilitate the trail
   e. Other, please explain

8. What do you hope to learn or gain from this experience? Please write here.
Appendix I: Post-Survey for Participants

Goal:
To understand the impact WTN had on the meeting participants by learning what the participants gained from the meeting experience.

Preamble:
We are a group of students from Worcester Polytechnic Institute who are working with the World Trails Network - Hub for the Americas. Our goal is to determine the community relationships to the Sendero Pacifico and the World Trails Network to develop resources that could empower communities to increase their involvement with the Sendero Pacifico. We will specifically be working with communities along the Sendero Pacifico, which have varying levels of trail infrastructure.

All questions in this survey are voluntary and you do not have to answer any question you are uncomfortable with. If at any time you would like clarification or would like to ask any questions please ask.

Questions:
1. What do you believe was the purpose of this meeting? Select all that apply.
   a. To learn more about the Sendero
   b. To discuss concerns about the Sendero
   c. To create a plan for future development of the Sendero
   d. To connect people
   e. Other (please list):

2. How well were your concerns addressed during this meeting?
   1  2  3  4  5
   (not addressed) (partially) (all addressed)

3. What concern(s) was not addressed, if any? Please write here.

4. How helpful was the material presented by in addressing your concerns?
   1  2  3  4  5
   (not helpful) (partially) (very helpful)

5. Do you think this meeting will prompt action in your community?
   a. Yes
   b. No
   c. Maybe
6. What are the next most important steps in the development of the Sendero? Select two.
   a. Increased attendance at Alliance meetings
   b. More assistance from the World Trails Network
   c. Less assistance from the World Trails Network
   d. More publicity
   e. More signage for existing trails
   f. Other (please list):
Appendix J: Direct Observation of the Monteverde Conference

**Goal:**
To observe the conference proceedings and record common topics/themes of interest throughout the conference.

**Part 1: Gathering and Introductions**

<table>
<thead>
<tr>
<th># Audience Members</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># Questions Asked</td>
<td></td>
</tr>
</tbody>
</table>

Comments on Structure: (e.g. room setup, gender distribution, presentation organization)

Interactions between presenter and audience:

Recurring Questions/Themes:

**Part 2: Trails of the World**

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Number of Questions Asked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability</td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td></td>
</tr>
<tr>
<td>Central Europe</td>
<td></td>
</tr>
<tr>
<td>Walking Markets</td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td></td>
</tr>
</tbody>
</table>

# Audience Members |          |
# Questions Asked Total |          |

Comments on Structure: (e.g. room setup, gender distribution, presentation organization)
Interactions between presenter and audience:

Recurring Questions/Themes:

**Part 3: Round Table Discussions**

<table>
<thead>
<tr>
<th># Participants per Community Represented</th>
<th>MV:</th>
<th>SR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veracruz:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Antonio:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guacimal:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montaña de Coyolito:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manzanilla:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CdP:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes</th>
<th>Frequency</th>
<th>Questions Asked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Key agreements: (i.e. purpose of meeting, action plans, etc.)

2. Unresolved Issues:

3. Recurring Questions/Themes by Community:

4. Power Dynamics (i.e. who speaks the most, which community, etc.):

5. Comments on Structure (i.e. set up of table, gender distribution, etc.):

6. Facilitator Management (i.e. who led discussion, moderator, etc.):
Part 4: Brainstorming (Chart used per brainstorming Group)

Theme of Brainstorming Group: _____________________

<table>
<thead>
<tr>
<th># Participants</th>
<th>MV:</th>
<th>SR:</th>
</tr>
</thead>
<tbody>
<tr>
<td># Participants per Community Represented</td>
<td>SL:</td>
<td>LC:</td>
</tr>
<tr>
<td></td>
<td>Veracruz:</td>
<td>Montaña de Coyolito:</td>
</tr>
<tr>
<td></td>
<td>San Antonio:</td>
<td>Manzanilla:</td>
</tr>
<tr>
<td></td>
<td>Guacimal:</td>
<td>CdP:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes</th>
<th>Frequency</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Key agreements: (i.e purpose of meeting, action plans, etc.)

2. Unresolved Issues:

3. Recurring Questions/ Themes by Community:

4. Power Dynamics (i.e. who speaks the most, which community, etc.):

5. Conflict Resolution (i.e. methods of collaboration):

6. Comments on Structure (i.e. set up of brainstorm, gender distribution, etc.):

7. Facilitator Management (i.e. who led discussion, moderator, etc.):

General Observations.
Appendix K: Participant Observation of Community Meetings

Goal:
To observe the meeting proceedings and record common topics/themes of interest throughout the meeting.

Location: ____________________

<table>
<thead>
<tr>
<th># Participants</th>
<th># Participants of Additional Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Themes</th>
<th>Frequency</th>
<th>Questions Asked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improvement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Key agreements: (i.e purpose of meeting, action plans, etc.)

8. Unresolved Issues:

9. Recurring Questions/ Themes:

10. Power Dynamics (i.e who speaks the most: WTN vs community, etc.):

11. Comments on Structure (i.e set up of table, gender distribution, etc.):

12. Facilitator Management (i.e who led discussion, moderator, etc.):
Appendix L: Three Pillar Idea Transcription

<table>
<thead>
<tr>
<th>Social</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>involving different people</td>
</tr>
<tr>
<td></td>
<td>Lack of info for tourists</td>
</tr>
<tr>
<td></td>
<td>Rescue system</td>
</tr>
<tr>
<td></td>
<td>It could be dangerous</td>
</tr>
<tr>
<td></td>
<td>Participation is missing</td>
</tr>
<tr>
<td></td>
<td>It’s not well known; not enough people that visit</td>
</tr>
<tr>
<td></td>
<td>Communication between communities</td>
</tr>
<tr>
<td></td>
<td>Communication with hikers/trekkers</td>
</tr>
<tr>
<td></td>
<td>Opportunity to discover old paths</td>
</tr>
<tr>
<td></td>
<td>Difficult to have youth working on trail construction</td>
</tr>
<tr>
<td></td>
<td>Clear information about the services/consistency of information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social - Economic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultural experience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lack of financing</td>
</tr>
<tr>
<td></td>
<td>Too many cattle on the trail and people don’t see other economic opportunity</td>
</tr>
<tr>
<td></td>
<td>Permission to pass on private roads; with bikes</td>
</tr>
<tr>
<td></td>
<td>Permissions for farmers</td>
</tr>
<tr>
<td></td>
<td>Consolidate alliances</td>
</tr>
<tr>
<td></td>
<td>Strengthen businesses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scientific approach</td>
</tr>
<tr>
<td></td>
<td>Affected by storms (climate change)</td>
</tr>
<tr>
<td></td>
<td>Defects of trails</td>
</tr>
<tr>
<td></td>
<td>Garbage and development</td>
</tr>
<tr>
<td></td>
<td>Maps/GPS not enough information</td>
</tr>
<tr>
<td></td>
<td>Alternative from ecotourism</td>
</tr>
<tr>
<td></td>
<td>Deforestation</td>
</tr>
<tr>
<td></td>
<td>Improve the routes for trekking</td>
</tr>
<tr>
<td></td>
<td>Signage</td>
</tr>
<tr>
<td></td>
<td>Burnt forests</td>
</tr>
<tr>
<td></td>
<td>Trail should be maintained in a consistent way</td>
</tr>
</tbody>
</table>
- New trails are necessary

<table>
<thead>
<tr>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Good marking</td>
</tr>
</tbody>
</table>
Appendix M: Monteverde Conference Brainstorming Results

Social

<table>
<thead>
<tr>
<th>Problem: Risk Management Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Solutions</td>
</tr>
<tr>
<td>● Team for search and rescue</td>
</tr>
<tr>
<td>● Red Cross rescue brigades</td>
</tr>
<tr>
<td>● Contact information for security and use of the Sendero</td>
</tr>
<tr>
<td>● General Information about risks</td>
</tr>
<tr>
<td>● Signage at parts of the trail where there is no good reference point and where the direction is not clear</td>
</tr>
<tr>
<td>● Alternate routes</td>
</tr>
<tr>
<td>● Transport options</td>
</tr>
<tr>
<td>● Education to make others conscience over the importance of the trail and sustainable development</td>
</tr>
</tbody>
</table>

Economic

<table>
<thead>
<tr>
<th>Problem: Informational Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Solutions:</td>
</tr>
<tr>
<td>● Commercial alliances</td>
</tr>
<tr>
<td>● “1% for the planet”</td>
</tr>
<tr>
<td>● Request funds from the Interamerican Foundation</td>
</tr>
<tr>
<td>● Selling products</td>
</tr>
<tr>
<td>○ Shirts, patches, passports for trail</td>
</tr>
<tr>
<td>○ Passport incentive to do whole hike</td>
</tr>
<tr>
<td>● Have a volunteer create the website or brochure</td>
</tr>
<tr>
<td>● Student project collaboration</td>
</tr>
<tr>
<td>● Use public systems for funding, creating, and sharing information</td>
</tr>
<tr>
<td>● Legal agreements with finca owners</td>
</tr>
<tr>
<td>● Share information</td>
</tr>
</tbody>
</table>

Environmental
<table>
<thead>
<tr>
<th>Problem: Deforestation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible Solutions</strong></td>
</tr>
<tr>
<td>● Environmental/Reforestation education</td>
</tr>
<tr>
<td>● Help from institutions</td>
</tr>
<tr>
<td>● Volunteer programs</td>
</tr>
<tr>
<td>● Agreements to reforest the length of the trail</td>
</tr>
<tr>
<td>● Community activities for reforestation</td>
</tr>
<tr>
<td>○ Volunteer days</td>
</tr>
<tr>
<td>● Prevention &amp; planning for forest fires</td>
</tr>
<tr>
<td>○ Fire brigade</td>
</tr>
<tr>
<td>● Financial programs for local tree nurseries</td>
</tr>
</tbody>
</table>
Appendix N: Documentation of Key Meeting Ideas

Note: These ideas were translated and paraphrased from each community meeting

<table>
<thead>
<tr>
<th>San Luis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong connection to the land</td>
</tr>
<tr>
<td>• Have appreciation of nature</td>
</tr>
<tr>
<td>• Don’t wish to overexploit the land or their community</td>
</tr>
<tr>
<td>• Would like to see economic advantage offered by the trail</td>
</tr>
<tr>
<td>• Field stations has potential to offer programs similar to CIEE</td>
</tr>
<tr>
<td>• No business plan has been developed yet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Veracruz</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Important to keep the economic benefit of the trail in mind</td>
</tr>
<tr>
<td>• Cattle are detrimental to the trail’s physical infrastructure</td>
</tr>
<tr>
<td>• To limit cattle, Sendero needs to offer enough economic benefit</td>
</tr>
<tr>
<td>• Reforestation is a key benefit</td>
</tr>
<tr>
<td>• Negotiation of land rights with private landowners</td>
</tr>
<tr>
<td>• Educational benefit to the trail</td>
</tr>
<tr>
<td>• There are many improvements that could be made to the physical infrastructure of the trail</td>
</tr>
<tr>
<td>• Improvements to the albergue as well</td>
</tr>
<tr>
<td>• There is a need for marketing strategy to promote local products</td>
</tr>
<tr>
<td>• Few members involved in the project at the moment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Santa Rosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good communication between Veracruz and Santa Rosa representatives</td>
</tr>
<tr>
<td>• Very open to feedback and looked for advice on the new trail section</td>
</tr>
<tr>
<td>• Actively working to improve their trail sections</td>
</tr>
<tr>
<td>• Various questions about how to improve trail to better stand against the rainy season</td>
</tr>
<tr>
<td>• Working on trails for the community as well</td>
</tr>
<tr>
<td>o Created trail from community center to El Salto, the local waterfall</td>
</tr>
<tr>
<td>• Discussion about the management of cattle and how to mitigate their environmental impact</td>
</tr>
<tr>
<td>• Potential collaboration with neighbors</td>
</tr>
<tr>
<td>• Discussed the marketing of local products as well and seemed interested</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>La Colina</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Concerns about the how to promote the trail and ensure hikers will visit</td>
</tr>
<tr>
<td>• Discussed how the WTN has played a role in this promotion</td>
</tr>
<tr>
<td>• Discussed how to attract visitors to the community</td>
</tr>
</tbody>
</table>
• Informally brainstormed potential activities and ideas that could be done within the community
• Open to advice from the WTN on how to grow and deal with potential tourism
• Concern about whether there will be an employee dedicated to organizing hikes and leading people through these communities

Costa de Pájaros

• Coastal rural tourism was a prominent theme
• This town has the infrastructure to support tourists as they already have tourist programs
• Have limited knowledge about the Sendero Pacífico
• Local leaders have copious experience with community involvement and participation
• Leaders have seen projects grow from few members to a large number
• Could be valuable allies in deciding how best to promote the Sendero
Appendix O: Informational Community Report

**Description:** This report compiled and analyzed the concerns and thoughts from the communities along the Sendero Pacífico.
El Sendero Pacífico

Authored by:
Kyleigh Driscoll &
Maria Medina Martinez
Introduction

We are a group of students from Worcester Polytechnic Institute located in Worcester, MA, USA, who have been working with the World Trails Network - Hub for the Americas. Our goal with this report is to share the information we have learned in our hikes through the communities supporting the development of the Sendero Pacífico. The information in this report was gathered through interviews with community members involved with the trail as well as through observations at community meetings. The information obtained from any interviews, however, does not necessarily represent the entire community's views. Additionally, our observations at the community meetings are limited to the people who were in attendance and representing their community. We hope that the information we provide here will be useful to the communities along the Sendero Pacífico and encourage more collaboration among them.

The organization of this report is divided into several themes based on those found from the individual interviews we conducted. These themes were categorized under Mission, Management, Benefits, Concerns, Improvements, and Tourism as shown in Figure 1.

Figure 1. Themes from interviews
An Evaluation of the Trail

**Sustainable Trails**

Sustainability is most often defined in the context of human interactions with the surrounding environment. This definition can be useful when looking at community involvement with trails. Sustainability can be better defined when broken down into its three pillars:

- **Environmental Sustainability** is a measure of the amount of natural materials being consumed by the population in comparison to the amount of materials being conserved. This pillar of sustainability seeks to protect the environment and its resources for the future.

- **Economic Sustainability** relies on the endurance of stable economic systems. Without environmental sustainability, long term economic sustainability is difficult to maintain.

- **Social Sustainability** is dependent on communities holding shared values and pursuing the establishment of social equity and opportunity. One of the most important aspects of social sustainability a community can possess is a sense of responsibility for the environment which drives the pursuit of sustainability efforts.

Each of these pillars plays a crucial role in the achievement of sustainability and this general definition of sustainability can also be applied in the context of sustainable trails. Sustainable trails are those that support recreation with minimal impact on nearby ecosystems, do not harm the surrounding flora and fauna, and require minimal maintenance. A sustainable trail can be environmentally sustainable if it is designed and maintained in a conscious way. Social and economic sustainability are dependent on the active involvement of communities along the trail.

**Community Interaction**
Regions of the Trail
The Monteverde Region

Introduction to the Region

The Monteverde region of the Sendero Pacífico can be seen as including Santa Elena, Cerro Plano, Monte Verde, and San Luis. The project itself began in 2005 with the assistance of the then-director of the Monteverde Institute, Nathaniel Scrimshaw, and other equally passionate individuals from the area. The Asociación Desarrollo Integral San Luis (ADISL) was one of the first organizations to get involved with the development of this project and has continued to be involved to this day. Although there is no signage to identify the trail within Santa Elena, Cerro Plano, and Monte Verde, there is a kiosk in San Luis between Escuela los Altos and the community center identifying the start of the trail. Following this kiosk will take you to the San Luis Field Station and to the start of Finca Virdana. The section of the trail traveling from Finca Virdana, through the Children’s Eternal Rainforest, and to the Pipe is well established, but there is still a large need for signage as well as consistent maintenance.

Perceived Mission

We had the opportunity to interview four members of the San Luis community, as well as two members from the Monte Verde community. We consolidated their ideas on what they believed to be the mission of the Sendero Pacífico and found that all interviewees agreed that the Sendero Pacífico could unite the communities, provide various economic opportunities, and offer a means of recreation. Interviewees from San Luis further expanded on this mission statement and suggested that the Sendero offered an opportunity for educational initiatives as well to appreciate and connect with nature. San Luis has a rich history of pioneering educational initiatives within the town, so it is
understandable that the Sendero could offer a means to continue supporting these initiatives in a new way. As San Luis has also been involved with the project for years, there is also an emphasis on the possibility of the Sendero’s mission to include the development of the economic aspects of the trail. However, the idea that the trail can connect various communities is still a key aspect of the mission. Additionally, considering the commitment of Monte Verde and San Luis residents to their natural environments, they see a possibility of the Sendero being a means for recreation and appreciation of nature.

**Concerns**

The concerns in this region were identified through interviews as well as the community gathering at the San Luis field station on February 17th, 2020. They were as follows:

- Organization of the trail
- The future of trail development
- The effect of tourism
- Economic viability of the project
- The safety of trekkers
- Natural impacts that could affect the future of the trail

This list reflects the concerns of a town already deeply involved with the trail. Aside from having short-term and long-term concerns about the development of the trail, they know there is a need to strengthen the central source of organization that is overseeing the development of the Sendero Pacífico to make future progress. Additionally, they seek to ensure the project is economically sustainable into the future and able to self-sustain itself primarily with the efforts of the local communities.

**Benefits**

The benefits in this region were identified through interviews as well as the community gathering at the San Luis field station on February 17th, 2020. They were as follows:
Potential educational initiatives
Economic opportunities for local families
Social opportunities for youth members
Reforestation

This list is reflective of the sentiments that the communities in this region hold to be important. As mentioned previously, San Luis residents strongly value education within their community and support the endeavors of local entrepreneurs. Therefore, the trail is seen as being a beneficial opportunity to complement the growth of rural tourism within their community. Residents of Monte Verde see the trail as also offering economic potential to the community, but in a different manner than with the adventure tourists who come to Monte Verde. The trail is also seen as a means to reforest the region as well.

Potential Improvements

The potential improvements in this region were identified through interviews as well as the community gathering at the San Luis field station on February 17th, 2020. They were as follows:

- More informational resources about the trail
- Improved organizational structure for the management of the trail
- Additional and improved signage
- Improved physical trail infrastructure

One of the common sentiments was that there is a very large need for more informational resources for both locals and tourists to learn about the Sendero Pacífico project. Whether it be an updated website or contact person, community members felt it was vital to improve this to increase support in the project. Individuals also felt that the trails in this region could stand to have consistent maintenance, improved trail paths, and a heavy increase in the signage in the area. Currently, visitors could easily lose their way if they were unfamiliar with the terrain or were without a guide. Consequently, this region is also eager to have an improved organizational infrastructure for the management of the trail to help with the organization of a reservation system, providing community members with the proper training to support a higher influx of trekkers, and the creation of an emergency response plan. The improvements desired in this region reflect the long-term goals they are hoping to achieve.
**Tourism**

This portion identifies the opinions, thoughts, and concerns that interviewees had in relation to increased tourism along the Sendero Pacífico as well as frequent themes that came up during the meeting on February 17th, 2020.

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**Guacimal**

**Introduction to the Region**

The Guacimal region of the Sendero Pacífico includes the communities of Veracruz, San Antonio, Santa Rosa, and Guacimal. Veracruz is a community that has been long involved in the project due to a handful of passionate community members. These members define their community as there is no formal organization associated with the trail in Veracruz and San Antonio. Individuals from this community aided in the construction and blazing of a section of the trail leading to the Pipe lookout. Santa Rosa is a new addition to the project with much of the support in this project coming from the
Santa Rosa Development Association. This group consists of many enthusiastic individuals who see potential in the project and actively work to make improvements to their trail section. For example, two community members scouted an alternate route for the trail to take it out of cow pastures and rural roads and back into the forest. Although this route provides hikers an alternate route for the dry season, this section still needs clearing and signage for any future use.

Perceived Mission

We were able to interview two members of the Veracruz/ San Antonio community as well as attendees of a meeting of the Santa Rosa Development Association. During these interviews we compiled information on what they believed the mission of the Sendero Pacífico is. Through these interviews we found that all interviewees agreed that the Sendero Pacífico could unite the communities involved with the trail. Because Veracruz has been involved longer in the project, they also viewed the economic benefits of the trail as part of the mission. Santa Rosa is a community very involved in the environment around them, and the natural aspect of the trail is a priority for these members. Both communities also saw the trail as a means for increased educational initiatives within their communities.

Concerns

The concerns of this region were identified through interviews, a community meeting in Veracruz on February 18, 2020, as well as a community meeting in Santa Rosa on February 19, 2020. They were as follows:

- The future of trail development
- Organization of the trail
• Natural impacts that could affect the future of the trail

This list reflects the concerns of two communities with varying lengths of involvement. Santa Rosa is newer to the project, and therefore their concerns primarily surround the future of trail development. For this community specifically, these concerns surround the cattle pastures and rural roads that the trail crosses. Both communities share the concerns of the natural impacts of the future of the trail. These concerns are primarily about the cattle along the trail as well as the future of reforestation along the trail. Both communities also have concerns regarding the organization of the trail, primarily in regard to its management through the alliance and funding for improvements along the trail.

Benefits
The benefits in this region were identified through interviews, a community meeting in Veracruz on February 18, 2020, as well as a community meeting in Santa Rosa on February 19, 2020. They were as follows:

• Reforestation
• Potential education initiative
• Economic opportunities for locals

This list is reflective of the thoughts of community members in this region. Due to the terrain and environment, the community of Veracruz puts a high value on the reforestation that the trail has brought. Their length of involvement has also allowed them to see the economic benefits of the trail as well as the educational aspect of the trail. Santa Rosa is also aware of the potential educational benefits such as providing an opportunity for volunteers to come and teach English as well as the opportunities to learn about new cultures.

Potential Improvements
The potential improvements in this region were identified through interviews, a community meeting in Veracruz on February 18, 2020, as well as a community meeting in Santa Rosa on February 19, 2020. They were as follows:

• More informational resources about the trail
• Additional and improved signage
• Improved physical infrastructure

Improvement of physical infrastructure was a common theme in both communities. This primarily encompasses the maintenance and construction of the physical trail. These improvements can also come in the form of reforestation to create windbreaks along the trail as well as making the terrain of the trail more enjoyable. Community members in Veracruz also seek more informational resources about the trail as well as increased signage and information for the hiker. Informational resources can include anything from more maps to a website with centralized information. Many felt that the signage was lacking along the trail and the signage in place was lacking the necessary information for users of the trail.

Tourism

This portion identifies the opinions, thoughts, and concerns that interviewees had in relation to increased tourism along the Sendero Pacífico as well as frequent themes that came up during interviews, a community meeting in Veracruz on February 18, 2020, as well as a community meeting in Santa Rosa on February 19, 2020. They were as follows:

• Promotional aspects related to generating interest in the trail
• Possible attractions that would attract trekkers
• Potential to encourage rural tourism

As previously seen in the benefits section, the potential of economic opportunities through the trail is a priority for the communities in this region. Tourism has the potential to bring these opportunities to the communities; however, the resources to encourage tourism are lacking. Promotion of the trail is one of these resources. Throughout these communities there were many suggestions for potential promotions. In the Veracruz community ideas were suggested regarding marketing local products through the Sendero Pacífico. This could entail a special sticker or marking on specific local goods that indicate that part of the purchase cost goes to support the Sendero Pacífico, thus bringing awareness of the trail. In Santa Rosa, night tours and other add-ons to the hike were suggested to attract more trekkers into the community. These suggestions follow along with the concept of rural tourism along the trail.
La Colina

Introduction to the Region

La Colina exists as its own region within the trail. The community of La Colina joined the Sendero Pacífico project within the last year and is one of the newest communities to become involved. This community has a population of approximately 450 people and exists in the middle of the trail. It has grown rapidly and has a large population of children within the community. Due to the community’s desirable location as well as through the selling of land, the community is continuing to grow.
Perceived Mission

We had the opportunity to interview community members as well as sit in on a meeting of community members. Through this information we found that the perceived mission of the Sendero Pacífico is to unite the communities along the trail as well as educate users of the trail. For the members of this community the trail acts as a means of connection among the communities along the trail as well as creating connections with hikers of the trail. The trail also provides a means to meet new people and learn about different cultures and languages through the hikers of the trail.

Concerns
The concerns of this region were identified through interviews and a community meeting in La Colina on February 20, 2020. They were as follows:

- The effect of tourism
- The future of trail development

This list reflects the prominent concerns about trail development brought up in documented conversations. While tourism was also brought up as a positive benefit of the trail, there are concerns of tourism becoming a negative side effect of the trail. While tourism can bring economic benefits to a community, in excess it can be a negative to a community. Another concern is the future of trail development, specifically regarding improving the current state of their section of the trail. The community is concerned about the construction of alternate trail routes and where to put these routes in order for them to be more desirable than the current path the trail follows.

**Benefits**

The benefits of this region were identified through interviews and a community meeting in La Colina on February 20, 2020. They were as follows:

- Reforestation
- Potential educational initiatives

This list reflects the sentiments of community members both involved in the trail and those involved in the community but not with the trail. The community of La Colina is newer to the project and has yet to see the full potential of many of the benefits mentioned. Reforestation is a promising benefit due to the lack of forest connectivity as the trail reaches closer to the coast of the Gulf of Nicoya. The trail also has the potential to bring students and trekkers which allows for an increased possibility of volunteers to educate the local communities. The most common example of education is teaching the locals English.

**Potential Improvements**

The potential improvements in this region were identified through interviews and a community meeting in La Colina on February 20, 2020. They were as follows:
- More informational resources about the trail
- Improved physical infrastructure

One sentiment that came up on more than one occasion is the need for more informational resources about the trail. Having more informational resources about the trail allows for promotion of the trail with accurate information. Another potential improvement is in regard to the physical infrastructure of the trail, which could include basic trail design and the inclusion of signage on the trail. The community was primarily interested in the improvement of the basic design of the trail and the need for a more desirable route through the community.

**Tourism**

This portion identifies the opinions, thoughts, and concerns that interviewees had in relation to increased tourism along the Sendero Pacífico as well as frequent themes that came up during interviews and a community meeting in La Colina on February 20, 2020. They were as follows:

- Possible attractions that would attract trekkers
- Potential to encourage rural tourism

The potentials for both economic gain and increased education can be found through tourism. During the community meeting the members brainstormed different attractions that the community could offer to bring in tourism. This included community specific options such as making tamales at the local church or witnessing the process of extracting cashews from the tree, as they are prominent in the area. There is also the potential to encourage rural tourism through the trail. The potential attractions play a role in the implementation of rural tourism, but the trail allows for the connections of communities to achieve successful rural tourism.
Coastal Communities

Introduction to the Region

The coastal communities of the Sendero Pacífico currently involve La Montaña de Coyolito as well as Costa de Pájaros. Both these communities are relatively new to the project, having only begun to integrate themselves within the past year. However, these two communities have a lot of experience with rural tourism programs and therefore have the potential to become key communities in the Sendero Pacífico project. La Montaña de Coyolito often hosts students from the National University of Costa Rica and enriches their experiences with talks about the history of the local women’s association as well as with the town’s local history. Costa de Pájaros is a community heavily focused on coastal rural tourism and offers visitors an opportunity to see the beauty of the Gulf of Nicoya. Mariposas del Golfo is a prominent organization in the town supporting women through their activities as well as promoting the health of the Gulf. These two women’s organizations support the project of
the Sendero Pacífico and are eager to learn more about it. Because the project is so new to this region, there is no well-established, signed trail within this region.

![The Women's Association in La Montaña de Coyolito](image1)

![Sunset in Costa de Pájaros](image2)

**Perceived Mission**

We interviewed five women from La Montaña de Coyolito along with one from Costa de Pájaros. After analyzing their responses, we found that the common theme in these communities in terms of the mission of the Sendero Pacífico was that they believed it supported an appreciation of nature. Additionally, the women from La Montaña de Coyolito believed it offered people a recreational opportunity. The representative from Costa de Pájaros, however, saw that the trail could also provide an opportunity to unify different communities as well as to support educational initiatives. Based on the relationships these communities have had with tourist groups, it is understandable that they see the Sendero as offering a means to connect with nature as well as with each other. However, because these communities are only recently involved in the Sendero, it is notable that they have a broad view on the mission of the trail. They have not yet had to experience the economic challenges that come with moving this specific project forward.

**Concerns**
The concerns in this region were identified through interviews as well as the community gathering involving local community leaders at Mariposas del Golfo on February 21st, 2020. They were as follows:

- The potentially negative effect of tourism

Due to the fact that these communities are at a fledgling stage of development, only Costa de Pájaros expressed a potential concern. The woman in this community had concerns about the potentially negative impact that tourism could have on the community such as potentially bringing in troublesome people or perpetuating the problem of littering.

**Benefits**

The benefits in this region were identified through interviews as well as the community gathering involving local community leaders at Mariposas del Golfo on February 21st, 2020. They were as follows:

- Learning about new cultures
- Support of local initiatives
- Economic opportunities for local families

Costa de Pájaros was the only community that explicitly referenced the trail as a potential way of allowing individuals to learn about a new culture. By encouraging this project, an exchange of ideas could potentially occur as people from different communities and countries could learn about the local culture. Additionally, the local business leaders in the area also mentioned the idea that the Sendero Pacífico could help support local initiatives looking to promote marine sustainability as well. Both communities however, suggested that this project could also benefit the local families as well by providing a means to support their businesses. The women’s group in La Montaña de Coyolito as well as a local businesswoman in Costa de Pájaros made it clear that employment opportunities are very limited in these small communities and individuals often have to drive out to cities such as Puntarenas to seek employment. If the Sendero were able to offer an additional means of employment, it would be heavily appreciated by these communities.
Potential Improvements

The potential improvements in this region were identified through interviews as well as the community gathering involving local community leaders at Mariposas del Golfo on February 21st, 2020. They were as follows:

- More informational resources about the trail
- Additional signage

From the brief time she has been involved, the woman in Costa de Pájaros already identified that there is a lack of informational resources that could inform both locals and visitors about the Sendero Pacífico. She also expressed a need to add signage to the local trail segment. Along with wayfinding signs, however, she also suggested having educational signs that could teach visitors about local flora and fauna. Most importantly she emphasized the need for signs that encouraged conscientious actions on the trail such as avoiding littering.

Tourism

This portion identifies the opinions, thoughts, and concerns that interviewees had in relation to increased tourism along the Sendero Pacífico as well as frequent themes that came up during the meeting on February 21st, 2020.

- Promotional aspects related to generating interest in the trail
- Possible attractions that would attract trekkers
- Potential to encourage rural tourism

Aside from the concerns presented earlier, there was a general positive outlook about increasing tourism through the Sendero. Specifically, the interviewee in Costa de Pájaros mentioned that there is a need to have a clear strategy to promote this project. However, she mentioned that it would be beneficial for all the communities to share their strategies to learn from one another and to stay better informed about the proceedings of the entire trail. Therefore, through the promotion of the Sendero these communities could strengthen their connections with one another. The women from La Montaña de Coyolito mentioned how tourists could experience diverse communities as they passed along the
Sendero. Costa de Pájaros also echoed this sentiment, citing that it would be attractive to these trekkers to experience that variation in communities and culture. Another woman mentioned that the Sendero would allow visitors to appreciate and experience the beauty of the local environment as well as marine life. Finally, both communities saw this as an opportunity to encourage the growth of rural tourism. These communities want to preserve their way of life but also appreciate the opportunity to be able to share their culture and values with visitors.

Monteverde Conference Outcomes

The Monteverde conference on February 15th, 2020, provided an opportunity for community members from all the different communities to attend and collaborate on the future of the Sendero Pacífico. Both key representatives and additional community members from the majority of the communities mentioned in this report were in attendance. This meeting proved to be a valuable experience to encourage communities to take a participatory approach to the development of the trail. A few important concerns came to light during this discussion. The conference was divided into three primary sections, presentations about trails in other parts of the world, a round table discussion about the challenges each community faced locally, and finally individual brainstorming sessions. The presentations provided an overview of the challenges the members of the International World Trails Network Trails & Sustainability team faced in their local trail projects as well as their successes. The round table discussions allowed participants to prepare for the individual breakout sessions that discussed the challenges the communities could face with the development of the trail under the lens of the three pillars of sustainability. From these sessions, the participants decided that under Environmental, Economic, and Social sectors the main challenges facing them were reforestation, informational resources, and a risk plan, respectively. As already summarized above, these were not necessarily the primary points of concern within each community in the region, but it supports the idea
Recurring Concerns

Due to the nature of the Sendero Pacífico project, various communities must collaborate and communicate to ensure its future development. However, for a project with so many newly involved members it can be difficult to integrate everyone quickly and seamlessly. From our time within these communities, we found two overarching themes that we believe all the communities along the Sendero Pacífico should keep in mind as they collaborate. These themes are management and communication.

Various communities specified a need for a stronger management system for the Sendero to successfully grow. However, we found that there is confusion on who is in charge of the management of the trail. In theory, the Sendero Pacífico Board of Directors (SP-BOD) is the highest level of management, however, this group has limited knowledge on professional trail management. This means that much of the management falls on individual communities, causing each community to be working separately rather than collaboratively. The SP-BOD consists of one elected member from each of the communities in the Alliance. Currently, the Alliance is the primary organizational structure connecting all the communities along the Sendero. However, there are often community representatives missing from Alliance meetings making it difficult to reach a consensus on issues that are brought up during meetings. This makes it challenging to both share information among the communities as well as to decide on plans of action for improvement of infrastructure. With different communities having different perceptions of the mission and goal of the project, it is important for there to be a central system of management to help guide the communities with future trail development.
The second theme we found was that communication is highly important for the success of this trail project. The Alliance acts as a uniting force between the communities along the trail however, we found that many communities do not have contact with each other outside of these meetings. We found that community members instead frequently shared news through WhatsApp groups, however this was not a consistent form of communication. Additionally, even though the SP-BOD is the group theoretically managing the trail, only the Alliance as a whole came up in our interactions with community members. This lack of knowledge can be attributed to the recent creation of the SP-BOD however, based on conversations with the community members it did not appear that the BOD was brought up in Alliance meetings or other community gatherings. Other similar lapses of information relate to the protocol on how to acquire funds for trail improvement projects as well as how best to promote the trail consistently to attract hikers.

We identified these two themes as being important to consider when the communities are collaborating as a group. For the project to reach the success individuals desire, there will need to be a shared understanding of how the trail is being managed which can only be done through a channel of consistent communication.
Conclusions and Recommendations

Each community along the Sendero Pacífico holds a unique culture and values that sets it apart from all others. A visitor experiencing the Sendero will be treated to beautifully, diverse terrain as well as communities rich with history and culture. The unity of the communities is solely reliant on their will to collaborate and carry the future of this project forward. There is an audience for this type of experience, and they need only work on developing a strategy to cater to this market. From the conversations we had with all these interviewees and from the observations from each community meeting, it was evident to us that there is great interest in supporting this project among all the communities, no matter their stage of development. However, because there is a variation in level of involvement, each community needs to be supported in different ways, as they all have slightly different concerns.

From our experiences in these communities as well as hearing the recommendations of the Trails and Sustainability Task Team, we recommend the following for each community:

- **San Luis**
  - Use the field station as a means of connecting the youth to the environment with environmental initiatives and educational programs
  - Educational initiatives would allow parents to get involved and learn more about the trail
  - Enlist local artists to create signage and decorative informational signs
  - Continue discussions to make guides consistently available to contact
  - Continue discussions to bring in volunteers to help with trail maintenance

- **Veracruz**
  - Continue conversations with local cattle farmers to better manage the cattle in the area
  - Continue creating wayfinding signs like those on Melvin’s farm
  - Continue discussions to bring in volunteers to help with trail maintenance

- **Santa Rosa**
- Continue conversations with members from Veracruz to learn more about trail construction
- Scout out an alternate route that could be used during the rainy season or improve construction of the trail to be usable during the rainy season

- **La Colina**
  - Discuss the potential of having a shuttle to take trekkers to the river
  - Continue involving local community members in a conversation about what the Sendero Pacífico could mean to La Colina
  - Identify events in the community that could immerse visitors into the local culture
  - Continue exploring the possibility of having an off-road route to Costa de Pájaros and the possibility of having signage along this route

- **La Montaña de Coyolito**
  - Send more representatives to the Alliance meetings to get more information about the project

- **Costa de Pájaros**
  - Continue discussions with other local organizations to support this project as well as other local initiatives
  - Scout out a possible endpoint for the Sendero Pacífico in Costa de Pájaros that features a view of the Gulf
  - Scout out additional potential trails that could get a trekker off the road

As each community is in a different stage of development, there are some recommendations that are particular to them, however there are also recommendations that we found to be applicable to all the communities. Based on the discussions the Task Team had with these communities, we recommend that all the communities continue considering the creation of a standard logo that could be associated with the Sendero Pacífico project. In this way, each community could market specific products with this brand and begin to both promote the trail and generate income for the project and the people involved. Additionally, we recommend that all communities send at least one to two representatives to every Alliance meeting to be kept up to date with the news related to the Sendero Pacífico. We found that every community sought to have more support and information from the Alliance, so this could be a potential way to strengthen inter-community communication. We also recommend that individuals who are extremely passionate about the success of the trail be encouraged to become more involved and provide them the resources to do this. Finally, we
recommend that all communities find a contact person who can be reliably contacted to find additional information about each community.

Our observations of the community meetings and our interviews allowed us to speak with various knowledgeable and passionate individuals about the Sendero Pacífico. Hearing the recommendations of the Task Team also helped inform the conclusions and recommendations we came to as well. We believe that if the project keeps getting the support from each community that it has been getting, then the Sendero Pacífico will continue to grow in the future.
Appendix P: Trail Guide

**Description:** A trail guide designed to allow hikers to access information about the trail easily.
Disclaimer: This Trail Guide is NOT finalized. There is necessary information that is either unavailable or subject to change.

Trail Guide

By Marco Garcia-Duarte and Patricia Smith
With edits from Kyleigh Driscoll and Maria Medina Martinez
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About the Sendero Pacífico

While explorer Ferdinand Magellan may have been mistaken when he named the tumultuous Pacific Ocean after peacefulness, this trail revives his original sentiment as it brings the hiker through some of the most gorgeous natural beauty Costa Rica has to offer. The trail passes through the Bellbird Biological Corridor, home to one of the planet’s most biologically diverse regions and an area conscience of the importance of nature conservation. This pioneering trail is not only responsible for connecting hikers to nature, but it connects the communities it passes through as well. Further, the success of this burgeoning trail pulls together economic, social, and environmental sustainability.

Level: Intermediate

Time commitment: 4 days with approximately 6 hours of hiking a day

There are multiple options for hikes available that include shorter loops around certain communities or that can be completed in one weekend. However, this guide covers a through-hike that includes the entire Sendero Pacífico starting at San Luis and ending at Costa de Pájaros. The hike takes 4 days with approximately 6 hours of hiking a day.
Entry:

San Luis:
trailhead off the main road
(10.279402, -84.807454)

or San Luis:
near the field station
(10.277183, -84.7970134)

Exit:

Asociación de Mujeres
Mariposas del Golfo
(10.105519, -84.999617)
Terminology

**Acompañante:** are unpaid but trained individuals who are recommended as volunteer guides.

**Albergue:** the term commonly used by both Spanish and English speakers for hostels along the trail. “Albergue” also more generally translates to “hostel.”

**Gallo Pinto:** rice and beans mixed together, common in many breakfasts that will be served along the trail.

**Pulperia:** a small store where the owner sits behind a counter and hands you the goods you ask for. They sell a small number of convenience store items.

**Sendero:** the term commonly used by both Spanish and English speakers to refer to the Sendero Pacífico, but “sendero” also more generally translates to “trail.”

**Tico Time:** many things have a more relaxed starting time. For example, if someone says dinner will be in five minutes, it may take much longer.
Planning

Cost

Lodging:

On average approximately 40 USD per night.

Note: Lodging cost includes three meals a day.

Transportation:

Remember to include transportation costs covering travel to the trailhead and the return trip in your overall costs.

Total: 160 USD + Transportation Costs

How to Pay: All albergues take colones as well as USD, but non-affiliated stores may only take colones. For transportation, some taxis take credit cards but not all. If you use a card, there may be an extra fee, depending on your bank. Some taxis may offer to stop at an ATM for cash.

Group Size

Groups should not be more than 16 people due to accommodation limits and safety reasons.

If you plan to stay at the San Luis Field Station, make sure you have at least 8 people as this is the minimum group size allowed.
When to Hike

Costa Rica has two main seasons: the rainy season from around May to November, and the dry season from November to April.

Rainy Season:

Routes that cross over rivers on Days 2, 3, and 4 will have to be circumvented due to high volumes of rainfall and the risk of flash-flooding.

Dry Season:

The peak on Day 1 can be dangerous due to the high winds that occur during this season, especially in March, so for these months take an alternative path unless a guide is present. Due to these high winds, trees and branches may fall across the trail, leaving it difficult to pass. Additionally, the dry season brings heat, especially closer to the coast. This means leaving early in the day and having enough water to stay hydrated between communities is key.

Language

Since most people in the trail communities do not speak much English, if any, it is recommended that at least one person in your group is confident with speaking in Spanish with the locals.
Navigating the Trail

Guiding

For certain sections of the trail, a guide or acompañante is necessary. However, there are key differences between them.

Guides are paid and certified as guides per Costa Rica’s national guidelines.

Acompañantes are unpaid but trained individuals who are recommended as volunteer guides.

Guides are currently necessary for the following sections of the trail since either the trail sections are very new, or is there is minimal to no signage that a visitor could follow:

- Day 1: Children’s Eternal Rainforest, route through Melvin’s Farm to the Pipe outlook.
- Day 2: Alternate dry season forest and pasture route to Santa Rosa
- Day 4: Alternate forest route to Costa de Pájaros.
- Days 3 & 4: Any alternative route

*These sections will need to be updated as new trails are created and as current trails become more defined.*

Contact Information:

While important, this information is currently not available.
Maps

In order by day. Day 1 seems to be from MV for SL. Each black dot is a point of importance.

Day 1: San Luis to Veracruz
Day 2: Veracruz to Santa Rosa
Day 3: Santa Rosa to La Colina
Day 4: La Colina to Costa de Pájaros
Day 4: La Colina to Costa de Pájaros

Alternative Route
Gear

Food and Water

Food:
If you plan to eat meals at albergues along the way, snacks are sufficient to pack. Bringing tupperware is also a good idea if you get meals to go.

Note: If someone in your party has any dietary restrictions, let the contact person know ahead of time and they will do their best to accommodate you.

Water:
Due to increasing heat over the duration of the trek, 3 liters of water per person per day are recommended. This will be most of the weight you carry. Water can be refilled from the taps at each albergue.

Footwear
Comfortable closed toed hiking shoes or boots. Closed toed shoes should be worn due to protect yourself from rocks, branches, or, in more extreme cases, snakes.
Clothing

**Note:** Overall, ideal clothing is lightweight and moisture wicking/quick drying. It is possible to hand wash clothes in the sinks at each albergue, and you can either hang-dry them on a line or from your bunk bed.

**Definitely Bring:**

- Long socks - to help with blisters and blocking ticks.
- Undergarments
  - *Long hiking pants* - to help prevent ticks on Days 1 & 2.
- Shorts - *it gets super hot Days 3 & 4 during the dry season.*
- T-Shirts - *it gets super hot Days 3 & 4 during the dry season.*
- Sleepwear
- Bathing Suit - *there are several swimming opportunities.*
- Hat - *sun protection!*
- Flip Flops - *for a break from your hiking shoes.*
- Toiletry supplies (toothbrush, toothpaste, deodorant, etc.) - *some locations offer soap, but most do not.*
Optional to Bring:

- Towel - *a small camping towel for after swimming and showers. Some places have towels. You can also air dry.*
- Long sleeve shirt - *potential sun protection, additionally Days 1 & 2 can be cold with wind during the dry season.*
- Fleece - *the nights can get cold on Days 1 & 2.*
- Windbreaker/Raincoat - *for the rainy season or high winds*
- Bandana - *help you cool off for sun protection. When soaked in water, it can help you cool off.*
- Tupperware - *to carry left-overs.*
- Trekking Poles - *most helpful on Day 1.*
More to Know

Other must haves

- Sun Screen - sun protection!
- Bug Spray - for ticks and the possibility of mosquitoes.
- First Aid Kit - just in case!
- Flashlight/Headlamp + Extra Batteries - some locations don’t have electricity.
- Phone - either a local phone or one with an international plan.
- Chargers - make sure your phone is always sufficiently charged for emergencies.

Other optional recommendations

- Snake gaiters - there is a possibility of venomous snakes.
- Tick guards - there is a guarantee of ticks in pasture areas.
- Tupperware - to carry left-overs.
- Trekking Poles - most helpful on Day 1.
Personal Communication

Cell Phone Service
The cell service can be unreliable in many places, so do not be surprised if messages are sent and received sporadically. One place this can happen is in Veracruz, so try to send all messages you need to early in the day. Kolbi is supposedly the most reliable cell phone service along the length of the trail. WhatsApp is a popular messaging app that works on both data and wifi.

Power

Wifi & Outlets:
You will have access to outlets in all rest locations except for Veracruz, but there is no wifi throughout the entire trip other than at Costa de Pájaros.

Tip: If you do not plan on sending or receiving messages, keep your phone on airplane mode to conserve its battery life.

Point of Contact
Have a point of contact: a person who you will give updates to along your journey to make sure you’re safe.
Accommodations

Albergues

Prices may vary depending on various factors such as being national or international, as well as if you are a student, volunteer, or general hiker. Prices shown are per person per night and are subject to change.

San Luis

Bella Tica:
# insert phone number here*
$ insert price here**

Along with providing accommodations, the owners of Bella Tica also produce their own coffee, which is available for purchase.

Field Station:
# insert phone number here*
$45-$57

A minimum group of 8 is required to board in this spacious location, which provides great access to the beginning of the trail.

Finca Camino Nuevo:
# insert phone number here*
$ insert price here**

A bed and breakfast surrounded by a great view of the mountains with several friendly dogs.
Veracruz
Nicho’s Albergue:

*insert phone number here*

$37-$39

Simple and basic accommodations that let you appreciate the nature around you. Hosted by a very kind and accommodating family.

Santa Rosa
Community Center:

*insert phone number here*

$insert price here**

Located in a large, airy room, there is close access to the local pulperias and sports field.

La Colina
Aurora’s Lodge Resort:

*insert phone number here*

$25-$38

Comfortable accommodations in walking distance of a beautiful sunset spot overlooking the valley.

* We currently do not have permission to include these numbers. Additionally, this information should be updated as specific contact people change.

**This information will be included once it is available.
La Montaña de Coyolito
Women’s Association:
# insert phone number here*
$7.02 for lunch only

This group currently provides lunch and is open to sharing their local history. However, it is possible to request to spend the night on the floor. Additionally, they are working on building small cabins, but they are only suitable for a small number of people. Currently, more information such as capacity is unavailable.

Costa de Pájaros
Las Mariposas del Golfo:
# insert phone number here*
$30-$38

Hosted by Mariposas del Golfo, a visitor has the opportunity to visit the Gulf as well as learn about the local women’s organization.

Camping
This option does not currently exist. However, potential camp sites are being scouted and information on this can be added once it is available.

* We currently do not have permission to include these numbers. Additionally, this information should be updated as specific contact people change.

**This information will be included once it is available.
Best Practices

Leave No Trace
There are many aspects to the leave no trace philosophy but in many ways its essence is to leave the trail better than you found it. That means if you find trash, pick it up and carry it out, and always respect the flora and fauna.

Tico Politeness
Costa Rica is a polite country, so remember your manners and say please and thank you. With that politeness, you will be met with extreme kindness and hospitality. Remember you are being welcomed to experience and share in their local culture.

Safety Concerns

The following concerns can be mitigated by following the advice given in this trail guide:

- Dehydration
- Getting lost
- Venomous Snakes
- Flash floods - Rainy season
- Falling trees or branches - Dry season
- High winds - Dry season
Trail Sections

San Luis

For this trek of a life-time, most people decide to start at San Luis. Therefore, it’s an ideal location to get a good night’s sleep before the long hike. There are several places to spend the night, including Bella Tica and Finca Camino Nuevo, located near the trailhead. Alternatively, with groups of eight or more, you can stay at the San Luis Field Station, the closest to the start of the trail. If you have time, make sure to arrive a few days earlier to see some of the things San Luis has to offer. With activities such as coffee, chocolate and sugar cane tours or visits to the local soap maker, it’s easy to see why San Luis is a model for rural tourism.
San Luis to Veracruz

Distance: 12.2 km / 7.6 miles (APPROXIMATION)

Prepare yourself for the amount of greenery you’ll be surrounded by on this first day. This hike passes through a number of farms and generous portions of primary, secondary, and elfin forest. Portions of the trail pass through the Children’s Eternal Rainforest reserve. Parts of the Cerro Amapala Ridge drop away to reveal an almost 360 degree view of the densely forested Monteverde Reserve, lush green San Luis Valley, and the distant end goal of the glistening Gulf of Nicoya. These awe-inspiring views are the reward of the steep ups and downs of this section, the most extreme along the trail.

Some areas of this hike can get dangerously windy. Your guide will know alternative routes. However, when the wind is strong but not prohibitively so, the more adventurous hikers will feel the adrenaline while braving these gusts. If anyone in your group is uncomfortable, however, make sure to inform your guide you wish to seek the alternative route.
The lodging in Veracruz is Nicho’s albergue. This rustic albergue is nestled into the edge of a forest just after coming out of cow pastures. Ask your hosts to direct you to a small pool with a waterfall ideal for an initial rinse after the day’s journey. Non-swimmers, do not fear! This shallow pool is a wonderful place to relax. It is almost spa-like with its soft sand and short waterfall, complete with rocks ideal for sitting under the cascades.

While you are sure to be tired from the day’s hike, make sure to stay awake late enough to star-gaze. Light pollution has no meaning here, and the stars steadily grow in number as your eyes adjust to the darkness. In fact, popular constellations may actually be harder to find since they are hidden amongst the many stars.
Summary

Terrain:
- Steep mountains - all seasons
- Roads - all seasons
- Pastures - all seasons
- Forests - all seasons

Precautions:
- Need a guide
- Can have high winds in the dry season
Veracruz to Santa Rosa

Distance: 16.4 km / 10.2 miles (APPROXIMATION)

The second day begins on rural roads but then gives the option of continuing on roads or descending into primary and secondary forest. The forested section should only be hiked during the dry season and currently requires a guide. There are multiple stream crossings and passes through cattle farms.

If you take the forested route, ask your guide to help you find the hives of Costa Rica’s stingless bees, explain the story of the thorny trees, and keep an eye out for edible seed pods. Giant strangler figs can also be seen rising up into the canopy, determinedly holding onto the steep sides opposite the path.
Before arriving in the charming town of Santa Rosa, make sure to take a rest at the local waterfall, ideal for swimming and cliff jumping after a hot day. There is a small ledge under the water where the cascade enters a deep pool where you can rest and enjoy the rush of the water.

![Santa Rosa Waterfall](image)

Upon entering the town, you will be welcomed to the Community Center, the lodging for the night. Fresh fruit and frescos are typically served, a good refreshment from the day’s heat. After refueling, take a wander through the town. The local pulperias are a great place to meet people and have engaging conversations. If you would like to practice your Spanish, do not fear - people here are patient and will speak slower. They are excited to meet you and can help you practice your language skills.
This town is also home to an *artisanal beekeeper*. He is enthusiastic about teaching others about his craft and ready to give you a taste of honey fresh from a honeycomb if contacted in advance.

Sunset is best seen from behind the Community Center where the land drops away, providing a spectacular view of *rolling mountains* and a wide expanse of sky. At nightfall the sky is a velvety dark blue heavily dusted with sparkling *stars*. Even when the lights of the Community Center are still on, the sheer amount of stars visible is astounding.
Summary

Terrain:

- Roads: a general alternative for any time of the year
- Pastures: rainy season alternative to the forests
- Forests: dry season only

Precautions:

- Need a guide
- Take the road during the rainy season as the multiple river crossings through the forest may experience flash floods

There is discussion about homestays in Santa Rosa instead of sleeping at the Community Center. However, this idea is still in the preliminary phase and will need to be added to once more information is available.
Santa Rosa to La Colina
Distance: 10.5 km / 6.5 miles (APPROXIMATION)

This shorter trek is a good rest from the previous two days, setting you up for success on the final, longest day.

On the way, it is possible to encounter several different community members, from a quaint souvenir shop with some photo-ops to convenience stores for one last chance for sweets for the day. After passing near the Guacimal Sustainability Center, a river crossing provides an ideal opportunity to wet a bandana or your hair to stay cooler during the heat to come. The day will then consist of the beautiful undulating hills of Costa Rica and maybe a cow or two.
Aurora’s Lodge Resort, the accommodations in La Colina, is a new facility thoughtfully stocked with soap and towels. This location has covered outdoor seating, a fridge, and large sink. Make sure to be settled before sunset since Aurora or another community member is sure to show you the sunset from atop one of the nearby hills. There are some small shops to buy snacks or beverages if you wish. Aurora and her family are very welcoming and love to talk.

Summary

Terrain:
- Roads - all seasons
- Pastures - alternative route
- Forests - alternative route

Precautions:
- Need a guide for alternative routes
- Ticks present in pastures
La Colina to Costa de Pájaros

Distance: 24.1 km / 15.0 miles (APPROXIMATION)

The fourth day is the culminating challenge of the trail. The longest, hottest day has multiple routes and rewards the hiker with views of the ocean on the way down from the last hill. To get there you can either follow roads or travel through forest and farmland instead, if you set up a guide ahead of time. Regardless of which starting route you choose, part of the way through your trip you will get to La Montaña de Coyolito, a small town where you can rest and get some lunch.

After lunch, continue along rural roads on one final stretch of about 5 miles to the sea. You know the trail end is near as the town of Costa de Pájaros grows around you. This town is home to the passionate women’s association Las Mariposas del Golfo, the current lodging option. Their proximity to the water means the seafood they serve for dinner is some of the freshest available. If possible, make sure to have a conversation with Esther, who will impart to you how valuable this community is. Also remember to ask to check out the butterfly garden for morphos and more.
Making your way to the ocean to **touch the waves** is as simple as meandering down a side street. There are many opportunities for tours on the water through the mangroves or to go bird watching. Depending on the time of day, colorful fishing boats may be resting up on shore with beautiful coastal birds circling overhead. Make sure to **stay for the sunset** and watch in wonder as the sun sinks behind the mystic mountains across the gulf, painting the sky in brilliant colors as the last few fishing boats come in to shore.

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There is a possibility that staying the night in Coyolito will be made available in the future. In this case, more information will need to be added.

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**Summary**

**Terrain**
- Roads - **all seasons**
- Old Rural Roads - **alternative route**

**Precautions**
- Need a guide for alternative routes
Other FAQs

Since the trail itself is still developing and has low hiker traffic, this section is under construction and can be updated once FAQs arise.

Acknowledgements

The information in this trail guide comes from personal experience hiking the trail twice in the dry season, guided by Nathaniel Scrimshaw and various community members along the way. Inspiration for the layout and organization comes from the following trail guides: The Trek, The Lebanon Mountain Trail Association Trail Guide, and the South West Coast Project Trail Guide.