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Influence of Grassroots Movements on Sustainability Transformations in Monteverde, Costa Rica

How have grassroots movements influenced sustainability transformations in Monteverde, Costa Rica?

by

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Abstract: This thesis analyses the relationship between sustainability transformations and grassroots movements in Monteverde, Costa Rica. The focus is toward understanding the influence of community-based initiatives on transformations that have sustainability as a goal, due to their potential for shaping society and addressing challenges such as climate change. The study also examines the emergence and development of sustainability transformations and grassroots movements in order to comprehend both phenomena. The thesis relies on three different theoretical frameworks: the Multilevel Perspective, the Transformative Social Innovation and the 3D framework, and employs a qualitative research design. Grassroots movements proved to be an important enabler for sustainability transformations, particularly when the community is participative and possess autonomy and the capabilities for taking advantage of opportunities presented by the context. The collaborative networks, especially the ones generated between grassroots movements, increased the impact of the initiatives by joining efforts and sharing resources, being particularly relevant the human resource.

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Table of Contents

- 1 Introduction 5**
- 2 Literature Review 8**
 - 2.1 Sustainability Transformations 8
 - 2.2 Transformative Social Innovations 9
 - 2.3 Influence of Grassroots Movements for Sustainability Transformations 11
 - 2.4 Grassroots Movements in Costa Rica 12
- 3 Methodology 14**
 - 3.1 Case Study 14
 - 3.2 Case Selection 14
 - 3.3 Data Collection and Analysis 15
 - 3.4 Data Triangulation..... 16
 - 3.5 Ethical Considerations and Limitations 17
- 4 Analysis 19**
 - 4.1 Grassroots Movements in Monteverde 19
 - 4.2 Sustainability Transformations and Grassroots Movements..... 23
 - 4.2.1 Understanding sustainability transformations in Monteverde through a MLP perspective..... 23
 - 4.2.2 Understanding how grassroot movements led to transformative change through a TSI perspective 25
 - 4.2.3 Understanding how grassroot movements impact sustainability transformations in Monteverde 34
- 5 Conclusion..... 36**

List of Figures

Figure 4.1 Timeline Grassroots Movements in Monteverde.....	22
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Abbreviations

MLP	- Multi Level Perspective
NGO	- Nongovernmental Organization
TSI	- Transformative Social Innovation

1 Introduction

There has been an international recognition that the current way of living has to adopt a sustainable approach in which social and planetary boundaries are taken into account in order to continue our development (Leach et al., 2013). The interest is therefore on how to spur innovations and transformations towards a system that is sustainable in the nearest future since the consequences of environmental degradation and climate change are already affecting the natural ecosystems and endangering the life of various species, including humans (Johnson et al., 2017). To transform the system, the actors that conform it need to change how things are done through technological and social innovations, shifting old paradigms and setting a new development path.

Bottom-up approaches, such as grassroot movements, have the advantage of generating solutions that consider local needs and opportunities while having the support of the community (Longley, 2020). These type of initiatives come from community-based or grassroots movements, since the innovations are generated at the basis of society. Grassroot movements have the potential to shape society and history since they have the ability to join actors and develop networks, initially at a local level, and bring collective action towards improving their own condition and the situation of the broader society (Van Til, Hegyesi & Eschweiler, 2010). However, how grassroots movements contribute to sustainability transformations remains to be studied. Analyses on grassroots movements are scarce (Campbell, Haalboom & Trow, 2012; Fressoli et al., 2014; Korsant, 2018; Maye, 2018; Smith et al., 2017) and along with the analysis of social innovations, the interactions between initiatives and the regional perspective have been overlooked.

Sustainability transformations have been studied through different theoretical lenses. There is an extensive body of literature that has directed the analysis into understanding sustainability transformations through a Multilevel Perspective (MLP) (Geels, 2002; Geels & Schot, 2007; Grin, Rotmans & Schot, 2010; Rip & Kemp, 1998; Smith, Voß & Grin, 2010; Van Der Brugge, Rotmans & Loorbach, 2005) or transformative social innovations as drivers of these transformations (Avelino et al., 2015; Avelino et al., 2017; Castro Arce & Vanclay, 2020; de Haan & Rotmans, 2018; Haxeltine et al., 2013; Strasser, de Kraker & Kemp, 2020; Westley et al., 2014). On the one hand, the Multilevel Perspective offers a standardized framework for analysing transitions by presenting an abstraction of the interaction between the system that holds the status quo, the innovations that present new ways for doing things and the landscape conditions in which both of them develop. On the other hand, social innovations studies have brought of the Transformative Social Innovation (TSI) theory, which is based on an analysis of international networks and initiatives oriented towards sustainable goals. The development of this theory supposes a step forward for understanding the relationship between social

innovations and transformations, however, the theory could be enriched by incorporating regional initiatives and an analysis of their interactions and level of impact. It would also be fruitful to include in the study of sustainability transformations a combination between the MLP and the TSI frameworks given that the first one can give an overview of the context and the conditions in which the transformations develop and the second one takes a closer look at the actors who are involved in them. The TSI framework can also be furthered complemented with the 3D Framework for an impact analysis on transformations, hence, the combinations of the three could increase the knowledge on how grassroots innovations influence transformations.

Therefore, the aim of this thesis is to contribute to the understanding of how sustainability transformations could be encouraged by grassroots movements. The study will focus on context of Monteverde, Costa Rica due to its transformative capacity and the active involvement of the community. Monteverde, is a region in Costa Rica characterized by an active participatory community that has aimed at achieving sustainability transformations through social innovations. Their achievements for implementing new ways of doing things and establishing new social relationships for a sustainable development, include the institutionalization of conservation practices by stablishing organizations dedicated to this goal and shifting the perceived value of nature, the realisation of an electric route for electric vehicles so as to decrease CO2 emissions, the creation of a social currency that is linked to the value of green actions and volunteering activities, among others initiatives. This makes it a region which is worth analysing in order to understand the relationship between grassroots movements and sustainability transformations and how to spur them or create the conditions for them to develop. The rich environment of social innovations in Monteverde also offers the possibility of examining the interaction between grassroots movements while taking a regional outlook.

The research project seeks to address the following question and sub-questions:

“How have grassroots movements influenced sustainability transformations in Monteverde, Costa Rica?”

- a) How did sustainability transformations emerge and develop in Monteverde?*
- b) How did grassroots movements begin and evolve in Monteverde?*
- c) How did grassroots movements influence the development of sustainability transformations in Monteverde?*

The delimitation of this study is to work on understanding the relationship between grassroots movements and sustainability transformations in Monteverde, Costa Rica through interviews that reflect the perspective of leaders of these movements. The results of this thesis contribute to the study of sustainability transformations by adding up the influence of grassroots movements with a regional perspective. This is necessary in order to be able to promote and accelerate the transitions from the basis of society. Hence, the outcome of this research is relevant for policy-makers and enablers interested in encouraging transformations from a community based point of view, and for community members who are interested in knowing the path taken by others and apply the learnings into their own context.

The unfolding structure of this thesis is separated in five parts including this introduction. The next section presents the literature associated to sustainability transformations, the framework that is employed for analysing them, and the influence of grassroots movements, along with literature that has explored the topic in the context of Costa Rica. The following section discusses the methodology, which includes the case study, data collection and triangulation, ethical considerations and limitations. After this, the analysis section does an examination of the grassroots organizations in Monteverde, their influence on sustainability transformations and their level of impact. The last section discusses the results of the research and makes suggestions for future research.

2 Literature Review

This thesis investigates the influence of grassroots movements for sustainability transformations in Monteverde, Costa Rica due to the high rate of community-based organizations that are present in the region and their commitment towards sustainability. For doing this, the following literature review explains what are sustainability transformations and how transformative social innovations influence sustainability transformations. It then follows a section reviewing the influence of grassroots movements for sustainability transformation and the last section does an examination of the existent literature about grassroots movements in Costa Rica.

2.1 Sustainability Transformations

There are sustainability challenges related to environmental, social and economic issues which need to be addressed in order for society to continue its development while respecting planetary boundaries (Leach et al., 2013). Internationally there has been a recognition about these needs and the importance of transforming the system that has been developed with the purpose adopting sustainable practices (Michelsen et al., 2016). Factors such as user habits, life styles, infrastructure, business models and political structures have created path dependencies that favour the current system, however, minor or incremental changes are not enough for facing sustainability challenges, transformations are needed (Markard, Raven & Truffer, 2012).

Sustainability transformations have been studied from different perspectives: the structural approach, which focuses on analysing change from a political, social and economic view; the enabling approach, which is a sociological view attentive to excluded interests with an activist posture; and the systemic approach, which identifies characteristics of the systems, such as actors and levels, and their potential of change (Scoones et al., 2018). This last one is the perspective taken for this study.

Sustainability transformations, as understood under the systemic approach, are transformation processes that are seen in the long-term and cover multidimensional aspects, due to their complexity and the one of the regime, in the direction towards more sustainable modes of production, consumption and living (Markard, Raven & Truffer, 2012). The collaboration of several actors is crucial as to reunite economic, technological and human resources and be able to identify and tackle the problems at hand since the innovation has to develop enough support and take advantage of the conditions for it to impact and generate changes in the regime. The systemic approach contains the stream of literature of the Multi-Level Perspective (MLP) which

specifically regards transformations as an outcome of alignments that occurs after the influence of forces at different levels: the niche, where innovations occur; the regime, conformed by rules and institutions; and the landscape, which is the context that shape social and technological changes (Rip & Kemp, 1998). In this stream, the system is considered as socio-technical since it is characterised by a combination of techniques and social factors, technologies or practices that accompany a social mindset (Markard, Raven & Truffer, 2012).

Grin, Rotmans and Schot (2010) explain that the broader level is the socio-technical landscape and it is the historical and geographical framework that is set by factors that remain unchanged or if changes occur they are at a slow speed. Climate change is an example of landscape forces, since its effects took relatively long time to be reflected on the landscape and the actions taken now will probably take a considerable amount of time to revert the trend. However, the authors touch upon the fact that there are certain exceptions in which the landscape can be rapidly changed and that is through external shocks, such as wars or economic crisis, usually situations that other actors cannot influence in the short term.

The socio-technical regime includes the rules of the game and the institutions that maintain the status quo or the current paradigm. Grin, Rotmans and Schot (2010) particularly express that the regime maintains stability and therefore, a certain lock-in of activities which are supported by three type of rules; cognitive, regulative and normative. The authors justify that the balance is achieved with the continuous interaction and dependence of several actors in the form of networks that share particular perceptions, problems, preferences, norms and experiences.

The final level of the MLP is the socio-technical niche and it is what the authors refer to as an incubator room, since it is where new technologies, social dynamics and other type of innovations are developed, with the protection of a group of actors willing to invest. They also point out that there are three internal processes at the niche: the construction of social networks that will contribute for developing the innovations, diversified learning processes to be able to tackle the objectives from different perspectives, and a coordination of expectation and visions in order to set a common goal, course of action and unify efforts. What is needed for transformations to take place are innovations that have gained certain maturity at the niche level in order to challenge the conditions at the regime but also the right conditions or changes at the landscape level (Geels & Schot, 2007). A critique of the MLP, made by de Haan and Rotmans (2018), is that the systemic approach has disregarded the importance of actors and their interactions as generators of transformative changes. This will be discussed next.

2.2 Transformative Social Innovations

The MLP established the framework for understanding the dynamics of sustainability transformations in general, however, since every niche functions in different ways, the changes incubate with various actors and settings. de Haan and Rotmans (2018) recognize that actors are value driven and individuals with common values who can unite forces to produce

transformations since they are not bound to a particular system and often times belong to several groups or hover across systems. As a result, other frameworks have emerged considering the relevance of actors, or organizations, for sustainability transformations. An example of this is the Transformative Social Innovation (TSI) framework (Avelino et al., 2015; Avelino et al., 2017; Castro Arce & Vanclay, 2020; de Haan & Rotmans, 2018; Haxeltine et al., 2013; Strasser, de Kraker & Kemp, 2020; Westley et al., 2014). Based on the analysis of initiatives that propose a new or different way of social interaction and, as a result, a change in the system, Haxeltine et al. (2013) identifies that social innovations create new social relationships and collaborations for social value creation, generating benefits for the community. Part of what the authors identify as benefits are the building of social capital and the increase in capacities, both required for an innovative setting.

Castro Arce and Vanclay (2020) recognize the potential of social innovations for being transformative if and when the initiative is able to scale up. This refers to changes in the type of governance achieved when the movement has reached a level of incidence or a sector of the population important enough for the authorities to make formal changes and set a new paradigm. Social innovations are prone to scale up when faced with institutional barriers because they have to pave the way and challenge the current institutional setting or socio-technical regime that most likely created the troubles and dissatisfactions to address (Westley et al., 2014).

What is important about social innovations is that they require and develop changes in the type of interactions and established networks in order to function, particularly in the institutional arrangements and power relationships in the market (Avelino et al., 2015). As seen before, among the type of rules that the socio-technical regimes work with are the cognitive rules, linked to the belief systems and principles, and the normative rules, related to relationships, values and behavioural norms (Grin, Rotmans & Schot, 2010). The effects of social innovations alter directly these two since they rearrange priorities and values, relationships are reorganized and the behavioural norms are modified to fit the new mindset. By the observations of Castro Arce and Vanclay (2020), the modification of regulative rules, such as laws and regulations, would occur after the scale up of the social innovation has produced a change in cognitive and normative rules. This seems natural given that the first rules of a society are the informally established dynamics which are later set into formal codes.

Strasser, de Kraker and Kemp (2020) identify that former research has focused on describing the development, spreading, interaction and scaling up of social innovations, a missing assessment was to identify and understand the transformative impacts and the capacities required for achieving them. The method developed by the authors is known as the 3D framework since it looks at 3 factors: depth, which defines if the changes are incremental, reformative or transformative; width, related to the context in which the innovation exerts and influence (geographical, cultural or societal); and length that refers to the period in which the transformation endures, it can be temporary or long-term. It serves as a complement to the TSI perspective since it also estimates the impact of social innovations.

Under the TSI theory the changes that occur at the level of the landscape are regarded as “Game-changers”. Their relevance relies on the fact that they have been identified as a mechanisms through which various actors start to interact and generate ideas, as Avelino et al. (2017) identify. The authors also point out that these game-changer are not independent from the work of social actions since they form part of the narratives that are to become common values, being some examples economic crisis, national policy interventions and the relationships between the social and material aspects. Avelino et al. (2015) worked on a classification of the social innovations based on the relationship of social and economic aspects, in particular to how they envisioned a new economy. The categories for social innovations that the authors identify are based on degrowth, on collaborative economies, on a solidarity economy or on social entrepreneurship. The solidarity economy is defined by Miller (2008, p. 7) as a type of organization in which the practices of cooperation, mutual aid, reciprocity and generosity are rethought. The author, therefore, says that this type of economy could “encourage collective processes of building diverse, locally-rooted and globally-connected, ecologically-sound, and directly democratic economies”, which Avelino et al. (2015) regard as a characteristic of grassroots movements.

2.3 Influence of Grassroots Movements for Sustainability Transformations

According to the Merriam-Webster dictionary, Grassroots is defined as “the basic level of society or of an organization especially as viewed in relation to higher or more centralized positions of power”. Grassroots Movements are therefore the kind of cooperation that start at ground level, in the community, and in their creation the priorities or needs of the elite groups are not guiding the decisions.

Smith et al. (2017) define grassroots movement as a network of activists, development workers, community groups or neighbours, working together to generate bottom-up solutions for sustainable development. The authors express that these solutions respond to the local context, hence, to interests and values of the community. This means that the community has power over the definition of the problem and for the outcome of the actions taken. This highlights the relevance for local innovations and grassroots movements to have a strong connections with other policy levels so that they are able to scale up and gain more drive in the transformation process (Hansen & Coenen, 2015).

Fuenfschilling and Binz (2018) talk about the frictions between the local and the global context in the sense that each has its own priorities and drivers for innovation and change. In grassroots movements the priority is to create changes that satisfy the local needs and design strategies or dynamics that potentialize the capacities of the community. The bottom-up approach or the community lead initiatives have a flexibility that governmental efforts cannot attain given that

the later generates slower changes through legislation and regulation (Maassen, 2012). This produces an unsatisfactory response to urgent matters, like climate change, since the effects of regulations are seen in the long term and, before these type of decisions, a consensus has to be reached. Haxeltine et al. (2013) point out that the active involvement of citizens is commonly used to address the problems of sustainability, climate change or social injustice since it is a situation that affects the entire community. The TSI theory identified that there is a relationship between social innovations and the capacity of a society to solve urgent matters, among these sustainability issues. These are problems that involve different sectors and actors, and more participation means more economic, technological and human resources available to develop holistic solutions. Another advantage of a bottom up approach is that decisions are taken at the community level, ensuring the legitimacy of the transformation, whereas in a top down approach the actions that are implemented could deviate from what the society needs and follow the path set by the socio-technical regime, hence failing to generate meaningful changes (Fuenfschilling & Binz, 2018). The literature on grassroots movements and transformations has mostly discussed the influence of these organizations from an individual point of view missing an overview of the context in which various social innovations interact. The TSI theory incorporated a perspective in which various organizations were analysed, yet, the criteria was to analyse international organizations, leaving the regional dynamics unaddressed.

2.4 Grassroots Movements in Costa Rica

The early environmental related movements, prior to the 1980s in Costa Rica, were primarily conformed by ecologists and scientists with the aim of preserving land and biodiversity as well as pleading for land use rights, and from there after social movements have included different local actors (Korsant, 2018). These social initiatives have resulted in changes for the whole regime, in some cases supported by international actors or with external resources, and across various areas, not only related to environmental conservation (Campbell, Haalboom & Trow, 2012; Crosbie, Sosa & Glantz, 2016; Korsant, 2018). In particular, there has been an increasing interest on sustainability and on creating environmental shifts in the agricultural sector through grassroots initiatives.

Costa Rica has a robust environmental regulatory framework, it is also one of the first countries in developing the concept of eco-tourism and biodiversity protection, and it is home for various environmental groups (Steinberg, 2001). From the government side there has been a historical centralization on environmental policies (Korsant, 2018). Yet, studies have shown the importance of recognizing and engaging the local context for successful results in Costa Rica (Basurto, 2007). This relationship has been regarded as crucial in other setting and the mechanism through which it should be encouraged is by involving communities in the process of decision making, granting communities control over resource management, supporting community institutions in charge of managing resources, embracing traditions and local

knowledge, bringing legitimacy to community property rights, joining environmental and development objectives and stipulating incentives for environmental conservation (Barrow & Murphree, 2001; Western & Wright, 1994). The aim of this is to shift the top down approach in which local needs, knowledge or actors are not included for developing or executing action plans and overcome the limitations of traditional transformation agreements (Adams & Hulme, 2001).

Zimmer (2011) points out that grassroots movements anchored at regional level had the aim of transforming the policies and patterns of neoliberal regimes, in which exploitive activities and income generation were priorities, backed up by nongovernmental organizations (NGOs) and political networks. These initiatives contributed to a more sustainable regime by influencing the implementation of policies and the creation of other organizations that further encouraged the transformation (Korsant, 2018; Frundt, 2010).

The existent literature analysing grassroots movements in Costa Rica has looked at individual organizations and the transformations that they have achieved. This is quite relevant for understanding how these organizations are conformed, with whom the organizations cooperate, and their transformative impact. However, a study that includes several organizations at a time, such as the ones developed under the TSI theory (Avelino et al., 2015; Avelino et al., 2017; Haxeltine et al., 2013; Westley et al., 2014), is still lacking in Costa Rica.

Comparing different initiatives has proved to be useful for comprehending the challenges and mechanisms for generating a change in the regime and develop a framework that can help define the relationship between social innovations and sustainability transformations. In the work by Haxeltine et al. (2013), the analysed organizations were all part of an international network, in other words, operating in a global context with particular challenges, actors and institutional structures.

In contrast to the previous work, this thesis is interested in unveiling regional dynamics of transformative social innovations and the role that grassroots movements play in them. This would complement the framework of TSI and be able to identify the relevance of local actors and local initiatives for sustainability transformations. Hence, this thesis aims at understanding the role of social innovations in the form of grassroots movements for sustainability transformations by studying them from a regional perspective and from an interactive point of view since initiatives and organizations within a community are collaborative and not independent from each other, as the standpoint that previous analysis have taken.

3 Methodology

3.1 Case Study

As indicated earlier, this thesis aims at understanding the role of grassroots movements for regional sustainability transformations. For doing so, a qualitative study on the relationship between grassroots movements and sustainability transformations in Monteverde, Costa Rica was conducted.

The analysis focuses on understanding how these movements are conformed, their interactions with other actors and organizations and the local context as to explain their influence and relevance for generating transformative changes. A case study is motivated when the interest is to understand a contemporary phenomenon through “how” and “why” questions (Yin, 2018) and this is the approach of the thesis. The case study allows to access data with the potential of answering the main research question:

“How have grassroots movements influenced sustainability transformations in Monteverde, Costa Rica?”

- a) How did sustainability transformations emerge and develop in Monteverde?*
- b) How did grassroots movements begin and evolve in Monteverde?*
- c) How did grassroots movements influence the development of sustainability transformations in Monteverde?*

The research follows a purposive sampling given that the selection of participants was based on the researcher judgement of who could be a relevant knowledge source for addressing the research aim.

3.2 Case Selection

The exploration on the influence of grassroots movements for transitioning toward sustainable practices was analysed in the Costa Rican setting through a qualitative case study. The specific region in which the study was carried out is within the community of Monteverde since it is a location where sustainability transformations have been successfully implemented, in areas such as agriculture, tourism, mobility, waste management and consumption (Báez, 2002;

Moragrega Martín, 2004). The learnings and developments of this region are worth studying in order to understand what has spurred the transformation and to identify elements and communication mechanisms that could be replicated in other settings. Besides from internally generating initiatives, this region was a forerunner in designing and implementing an action plan for de-carbonizing activities as established by the Costa Rican National Plan of Decarbonization (Corclima, 2019b). This achievement is proof of the sustainability drive of the region and the connections or effective interactions between the regime and local actors.

The empirical focus was to clarify the origins and mechanisms of social movements aimed at organizing and mobilizing individuals for taking an active role in social and political matters, resulting in a transformation of the system. Analysing the achievements of environmental initiatives in Monteverde, Costa Rica attempted to shed light on how can sustainability transformations be encouraged and accelerated and through which mechanisms or action plans. This has the potential of providing valuable knowledge for future design and implementation of sustainability transformative strategies, in other regions within Costa Rica and cross-nationally.

3.3 Data Collection and Analysis

The analysis was based on data gathered from primary sources during a period of three months in which the fieldwork activities in Costa Rica took place. The study includes information collected through interviews, observations and notes from on-site activities and complementary material from secondary sources such as reports, organizational webpages and related research. The selected data allows to explore grassroots movements by looking at their origin, development, at the actors that form part and interact with them, and at their impact for the sustainability transformations.

During the fieldwork phase, interviews were conducted either through a face to face or virtual interaction and by means of in-depth individual interviews (IDI). This approach permits to have flexibility during the interviews and make it possible to have discussions and reflections with the participants (Ritchie & Lewis, 2003). The structure followed for the interview process is presented in Appendix B, however, due to the semi-structured approach, the questions varied between participants as well as the order of the questions. Six interviews were carried out and recorded with the agreement of the participants, which were later transcribed for analysis. Only one interview was carried out in English, the rest were in Spanish and translated by the researcher into English for presenting the findings. The interviews were addressed to individuals who had a leadership role within grassroots movements and some of the interviewees were active in more than one organization, which allowed to have insights on 10 organizations in total. Some leaders and grassroots movements were initially identified by the author and the rest were selected through a snowball effect. The participants are identified as P1, P2, P3, P4, P4, P5 and P6 throughout the text, with no particular order.

The interviews were aimed at understanding the influence of grassroots movements for sustainability transformations and in order to achieve this, the questions were structured into five major blocks. The interview started with a section in which participants had the chance to warm up to the interview and answer demographic and background questions. The second block was aimed at understanding how sustainability transitions are developing in the local context and their relevance. This was followed by a set of questions regarding the origin, evolution and achievements of a particular grassroots movement. The fourth section had the purpose of collecting information on how the movements have affected the local setting for sustainability transformation by assessing interactions and impact on other actors and policies. The final questions touch upon challenges for the organization and the effects that COVID had for the movement and the community.

The data was analysed using the MLP, TSI and 3D as a framework to clarify the linkages between grassroots movements, as a manifestation of a social innovation and sustainability transformations; the actors, networks and processes of the transformations; and the impact of grassroots movements for sustainability transformations. The reason to choose these approaches is the standardized criteria since the method provides a framework for transformative patterns and makes comparisons with other organizations or settings viable. The data was analysed through an iterative process, moving between data collection, analysis and review of existing literature in order to generate insights. This mechanism allows to reach a saturation stage in which more information does not provide new insights or builds upon the research results (Ritchie & Lewis, 2003).

The data was handled and coded through the computer software NVivo as to analyse the collected information. This assists in the management of data, facilitates the retrieval of information and increase the transparency of the research with the trade-off of initially spending time preparing and entering the data (Flick, 2009). NVivo is recognized as a Qualitative Data Analysis (QDA) software and it serves merely as a tool for researchers since it does not perform analysis on its own, it facilitates classification and coding of qualitative data (Flick, 2009). The categories in which the data was organized can be found in Appendix A.

3.4 Data Triangulation

The data collected through interviews for this qualitative research is complemented by gathering information from different sources on the same topic in order to validate the data previously obtained. This cross-validation serves to legitimize the information provided by participants as well as for helping portray a comprehensive context and overarching analysis (Ritchie & Lewis, 2003). From the methodological perspective, data triangulation includes the use of data from interviews in sum to information gathered from observations and field notes. The triangulation is also from a data source point of view, where the approach is to collect data through in-depth individual interviews (IDI) and from different sectors and actors. This method,

even though time consuming, allowed for flexibility and encourage the responsiveness of individuals thus increasing the possibilities of finding relevant and thorough information, perhaps not previously acknowledged while designing the interview (Yin, 2018).

3.5 Ethical Considerations and Limitations

The way in which information is collected and processed needs to be transparent for the benefit of the public and the individuals involved in the data collection (Flick, 2009). Since the information gathered in this research comes from primary sources, confidentiality and privacy is ensured by appropriately handling data and by informing participants about the purpose of the research and their free choice for taking part in the study. The participants were aware of how their data was to be used in addition to communicating the managing of materials such as recordings or audios (Ritchie & Lewis, 2003). They were informed about their control over the interview, which includes the possibility of modifying their answers or stopping the interview at any given point (Flick, 2009). All of these was stated in the informed consent signed by interviewees prior to the interview.

In order to carry out this study, the intention was to keep an impartial view and present the findings as close as possible to the observable reality. From a research perspective, the aim was to integrate to the local community and activities in order to gain as much insight as possible while at the same time avoiding to influence the study, as Flick (2009) suggests. However, as the author mentions, subjectivity from the researcher and participants in the research are part of what conforms qualitative studies since it allows for reflections and it is relevant for building connections and communication among the two former actors.

Part of the limitations are that the researcher might not always be entirely accepted by the community in which the study depends, therefore decreasing the depth and insight of the gathered information. It is possible that the individuals collaborating in the study lack trust in the interviewer and withdraw information, as Ritchie and Lewis (2003) point out. The authors also mention that this could be reduced by the researcher's active interest and intention to understand the community and social dynamics. Therefore, as a way to mitigate this risk there was an extensive research on the grassroots movements studied previous to the interview, and also opportunities for volunteering and participating with the community were seized. People can also be more open if they feel their ideas and contribution could generate a change or simply be heard by others (Flick, 2009). Thus, the final purpose of the study was communicated to the participants for motivating and engage the interviewees as collaborators of the project. Another way in which important information might be excluded from the research is if the participants omit details that regard as not relevant, in which case there is a responsibility from the researcher not only to convey the aim of the study but also to prepare the right questions in order to obtain valuable data (Ritchie & Lewis, 2003).

A limitation that could arise, in regards with the difference of languages between the study and the interviews carried out in Spanish, is if the translation does not reflect the full meaning of the original statement. This risk was minimized by analysing the interviewees in the original language to avoid unnecessary manipulation of the data and the responses were only translated for direct quotes.

Other limitations for this research were posed by the context of the pandemic since some interviews had to be carried out through virtual meetings rather than face-to-face interaction, which could have altered the dynamic of communication. The knowledge gained from observation was also limited to the activities that were possible within the restrictions of the pandemic instead of the regular everyday community interaction.

4 Analysis

This analysis is focused on identifying the influence of grassroots movements for sustainability transformations in Monteverde. In order to understand this relationship, first a research about the existing community-based institutions and initiatives was carried out in order to structure the current scenario and the organizational ecosystem. Second, the information gathered from the interviews explains the development of sustainability transformations and grassroots movements individually and the link between the two. Finally an examination of the development is discussed through the MLP, TSI and 3D framework.

4.1 Grassroots Movements in Monteverde

Part of the contribution of this study is to analyse the interaction between grassroots movements, adding up to the analysis of individual communal organizations and initiatives as well as their influence for the sustainable development of a local community. This is paramount to understand the regional sustainability transformations. The current ecosystem in Monteverde is made up of grassroots movements that are aimed at improving the social, economic and environmental setting, focusing in either one of these aspects or in several of them at once. The community based organizations and initiatives that will be further discussed are not the only ones in Monteverde, however, according to the interviewees they have been relevant for the community's development and offer an overview of the ecosystem. Some grassroots movements have formed formal organizations and others have remained as collaborative efforts, hence both are included in the outline. The description of the different movements follows a chronological order (Figure 4.1).

- Monteverde Friends Meeting (1952)

The Monteverde Friends Meeting is a religious association established by a group of Quakers that migrated from the United States attracted by the demilitarization and peace policies in Costa Rica (Monteverde Friends Meeting, 2021). The organization runs by the values of equality, peace, integrity, community, simplicity and sustainability which are central to the Quaker believes (Monteverde Friends School, n.d.). The association later established the non-profit Monteverde Friends School which provides environmental education and encourages community building through initiatives such as community service and carrying out assemblies in which local necessities are discussed (Monteverde Friends School, n.d.). The Monteverde Friends Meeting, like other Quaker organizations around the world, has been an active participant in promoting sustainability transformations through community action (P5).

- Monteverde Reserve (1972)

The Monteverde Reserve was one of the first organizational efforts to change the development trajectory in order to adopt more sustainable practices and preserve the environment (P3, P4). The reserve was a result of joint efforts from the local Quaker community and scientists from the Tropical Science Center with the aim of protecting the ecosystem of the cloud forest and its endemic species, forming a biological corridor in which the habitat is preserved and nature can transit freely (Reserva Biológica Bosque Nuboso Monteverde, 2021). The project includes practicing continuous research, providing ecological education and supporting the development of the community (Tropical Science Center, n.d.).

- CASEM Artisans Cooperative Monteverde (1982)

Following the growing cooperative movement that was taking place in Costa Rica, the Artisans Cooperative Monteverde was established by a group of women in the community with the purpose of commercializing artisanal products and encouraging the integral development of their members (P1). To achieve this, the objectives were to offer a source of fair income for the artisans, help develop their members as socially responsible individuals, promote the conservation of nature with their art and in their production processes, and help building capacities through training courses (Casem Coop, n.d.). The organization was also a way to respond to the economic crisis of the time and the need to diversify from the livestock economy, it also took advantage of the emergent touristic sector (P1).

- Monteverde Conservation League (1986)

The Monteverde Conservation League is a non-profit organization that was born from a local concern about the threat that agricultural development represented for the environment (Burlingame, 2019a). The mission of the association was, therefore, to conserve, preserve and reinstate the tropical ecosystem and its biodiversity by acquiring and protecting the land, transforming it into a private natural reserve called “Bosque Eterno de los Niños” (ACMCR, 2016). The activities of the organization include providing environmental education to the locals, particularly to schools, carrying out reforestation programs and research (ACMCR, 2016).

- Institute of Monteverde (1986)

The Institute of Monteverde was founded by a group within the community with the aim of guiding the development of tourism in a sustainable way (Monteverde Institute, 2021). The local nature was attracting many visitors and this same interest represented a threat to the environment if not well managed, hence, the path they chose was to encourage academic tourism (Burlingame, 2019b). In order to attain a sustainable development the Institute set the objectives of providing education, integrating diverse initiatives across the community and coordinating their programs with the ones in the community, all with the vision of a sustainable future (Monteverde Institute, 2021). The institute is divided into three areas for this purpose, the academic department, the research department and a Community Initiatives Centre in charge of translating the efforts of the institute into practical results that benefit the community (Avendaño Leadem, 2017).

- Café de Monteverde (1989)

Café de Monteverde is integrated by a group of families with a background in agriculture and the mission of producing, protecting, and educating so as to perpetuate nature (Café de Monteverde, 2021). The association, although not formally a cooperative, adopts the values of solidarity, democracy, responsibility and equality, which are part of the cooperativist guidelines, for the sustainable production of coffee (P3). In 2008 they established Life Monteverde, an educational programme on sustainable production which receives local and foreign students that can later share the learnings with their community (Café de Monteverde, 2021).

- Monteverde Community Fund (2012)

The Monteverde Community Fund has the mission of uniting resources, actors and strategies for supporting sustainability initiatives (Fondo Comunitario Monteverde, n.d.). The idea for the project initiated within the Institute of Monteverde and was materialized with the participation of other members of the community (P4). It had the purpose of equitably channelling the philanthropy, that tourism promoted, towards sustainable community initiatives (Fondo Comunitario Monteverde, n.d.). It also functions as a fiscal agent for organizations to receive donations free of taxes (P2).

- Corclima (2014)

Corclima is a commission for resilience to climate change whose purpose is to decrease greenhouse gas emissions, increase carbon sequestration and improve adaptability to climate change (Corclima, 2019a). As part of their activities they measure climate change and perform inventories of greenhouse gas emissions and carbon sequestration (Corclima, 2019b). Based on that they have developed a climate action plan that considers the objectives of the national climate change strategy and the particular needs of Monteverde (P2). The organization functions as a link between the local context and the sustainability efforts and guidelines set by the government.

- Ruta Eléctrica Monteverde (2019)

The Monteverde Electric Route is a community effort for increasing the use of environmentally friendlier modes of transportation, through a network of charging spots for electric vehicles. The collaborators and providers of the charging points are hotels, touristic attractions and restaurants, among other businesses, and their goal is to decrease the greenhouse gas emissions produced from transport (Corclima, 2019c).

- Enlace (2020)

Enlace is a commission that originated during the COVID crisis as an attempt to decrease the negative impact for society and the economy, given that tourism, the main economic sector, declined gravely (Costa Rica Gobierno del Bicentenario, 2019). The initiative reunites members of diverse organizations and from the community in 5 sub-committees; statistics, education, social aid, health and circular economy (P3). The organization performs statistics and census in order to have a better comprehension of the current situation. Some of their activities are

providing food packages to families in need, offering psychological support, planning recreational activities for improving mental health and develop economic alternatives for incentivizing local production and consumption (Comisión Enlace Monteverde, n.d.). From this commission, initiatives such as the community garden, the swap shop, the creation of a local currency and health programs have emerged, which are aimed at increasing resiliency and the wellbeing of the community (P2).

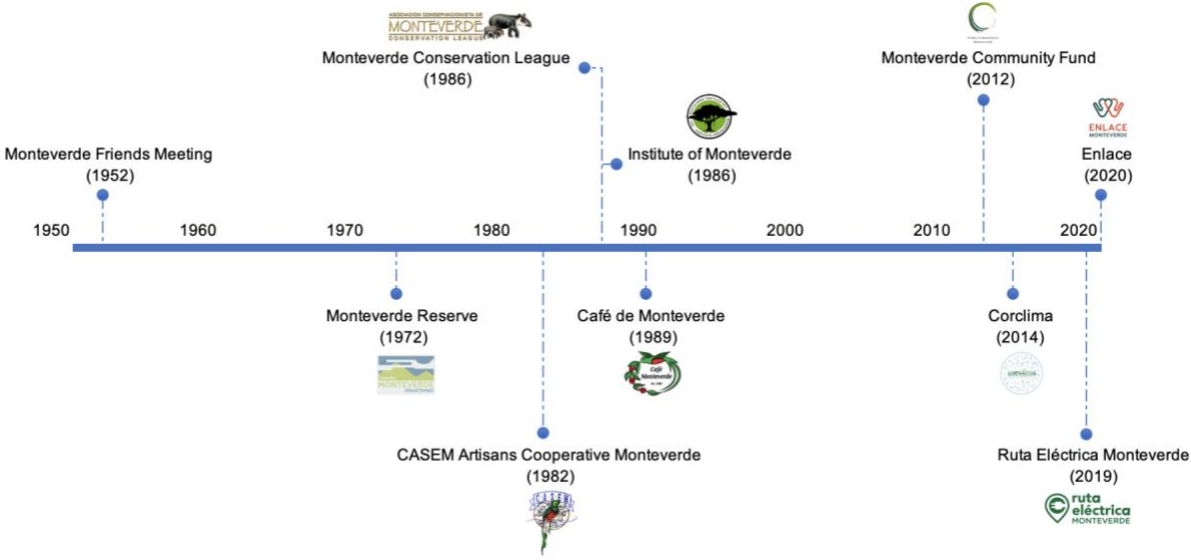


Figure 4.1 Timeline Grassroots Movements in Monteverde

Source: Own elaboration

These movements propose alternative social practices and ways of doing things in order to achieve a sustainable development. The changes include new techniques but also retake old practices and apply them in a modern context. Sustainable agriculture, exchanging goods, and community gardens are activities that were done in the past and returning to them has offered benefits for the environment, society and the economy. It is also relevant that the initiatives originated with active participation of the community and are aimed towards reinforcing cooperation and collaboration for building a more resilient community.

The importance of this ecosystem is that each initiative has its own area of expertise and they take advantage of each other capabilities in order to have greater impact. There are hardly two initiatives that do not share an interaction. For example, the Monteverde Community Fund provides funding and fiscal services for the other associations, in this way the rest of the organizations can focus in their core activity. The funds that are provided are collaborative, they cover only part of what is needed and the rest is raised by the organizations. Thus, the economic risks are shared and the participants do not separate themselves from this responsibility. The Monteverde Friends Meeting has been an important agent for uniting human resources, for sharing knowledge and has been a driving force for new initiatives. The Monteverde Reserve and the Monteverde Conservation League have focused on the environmental aspect. With their research activities they have gained knowledge about how the

ecosystem works and its importance in order to be able to preserve the environment and transmit the learnings to other organizations and society in general. Café de Monteverde and the Institute of Monteverde have developed the academic or educational tourism which has attracted new ideas and an inflow of resources through foreign donations.

It is also worth noting that the ecosystem that supports sustainability transformations is not limited to the efforts of non-profit organizations, private organizations also support these initiatives through active participation. Owners and other members of for-profit organizations are part of non-profit boards meetings, businesses provide monetary resources directly to individual initiatives and contribute with donations to the Monteverde Community Fund. In the case of the Electric Route, businesses are also partners for developing the infrastructure since they sponsor the charging spots for electric vehicles visiting their location. The commission Enlace is another example of this ecosystem and is a reflection of the capabilities of coordination and cooperation that the community can achieve to confront a crisis. In this movement participate individuals from diverse non-profit organizations, from local businesses as well as from governmental and external institutions.

The interaction and collaboration between organizations help to make the most out of the available resources and to have more influence for achieving sustainability transformations. Monetary and material resources are shared and distributed where needed but what has been more significant is the allocation of human resources. Community members participate often times in more than one initiative, therefore, knowledge and capabilities are shared as well as the learnings, experiences and innovations.

4.2 Sustainability Transformations and Grassroots Movements

This section is aimed at understanding the influence of grassroots movements under the MLP, TSI and 3D Framework. Although these frameworks have similitudes, each of them offers a different perspective for understanding the development, characteristics and impact of grassroots movements for sustainability transformations in overall. The MLP is used to understand the interactions between the landscape, regime and niche and the characteristics and changes that have allowed the transformations. The TSI perspective presents the process in which social innovations lead to transformative change, taking into account the actors and networks involved. And finally, the 3D framework is employed to make an assessment of the impact of grassroots movements for sustainability transformations.

4.2.1 Understanding sustainability transformations in Monteverde through a MLP perspective

Monteverde has a history of sustainability transformations that can be traced back to the 70s when the first grassroots movements emerged. One of the most relevant changes that occurred was the shift from a livestock economy, rooted to the dairy industry, to a tourism-based economy. This was a change towards a more sustainable way of living since for the type of tourism that was developing the use of nature was related to preservation, whereas the dairy production required to deplete natural resources. This was accompanied by other sustainability transformations that the community leaders attribute to the decline of the dairy industry and the arrival of migrants with a different appreciation for nature, which permeated in the values of the community.

The sustainability transformations that have occurred in Monteverde can be presented in two scenarios under the MLP framework. One at the beginning of the transformations when the first grassroots movements emerged and a second one with the threat of climate change and COVID. The general landscape, which has remained at both stages, is the rich ecosystem of the region. Monteverde is located in a cloud forest, which is a tropical, evergreen forest with the characteristic of constant presence of low-level clouds. This environment hosts a high biodiversity and within these species some are endemic, which means that if the ecosystem in Monteverde changes and they do not adapt these species face extinction (Nadkarni & Wheelwright, 2000).

The landscape changes that occurred in the first scenario, between the 1950's and 1990's, were the arrival of migrants from the U.S. and the increase of tourism due to an interest in the nature of Monteverde (P1-P6). The regime was mainly constituted by the cultural values and economic activities of the few inhabitants. The locals were focused on exploitative practices as a way of living (P1, P3, P5). There were no formal institutions established and the influence of the national government was minor given that it was a difficult region to access (P5). Therefore, the niche innovations that emerged with the arrival of the Quaker migrant community challenged a weak regime. This, summed up to the changes in the landscape, made it possible for the transformations to settle in.

The innovations that grassroots movements triggered were a shift of economic activity, from livestock to tourism with agriculture at a side, the implementation of reforestation and conservation mechanisms, a sustainable tourism and the decrease of gender inequalities (P1-P6). This last one was a transformation that faced more resistance from the regime since sexism was embedded in cultural values from generations before the arrival of the first Costa Rican settlers in Monteverde, at the beginning of the 20th century (P1, P3). Although the success of these niche innovations, there were some others that could not change the path that the regime was taking. An example is the initiative Monteverde 2020 that emerged from the community in the 90's with the aim of diversifying the economy from tourism and set a 30-year development plan for Monteverde (P3, P6). The transformation was not favoured by the regime since tourism was in a boom stage and, by then, the economy of Monteverde was already dependant on this sector (P3). The regime had set a path dependency since the infrastructure developed and future investments were aimed at taking advantage of tourism and there was no urgent need, nor change in the landscape, that allowed for this transformation to take place.

In the second stage, from the 1990's to 2020, the main landscape variations were the increasing effects of climate change and the COVID crisis. On the one hand, the rise in temperatures, the alteration of precipitation patterns and fluctuation in the species that inhabit the area were events that started in the 80's and later aggravated, increasing the national and international attention (Corclima, 2019a). On the other hand, the COVID crisis was an event that affected the development of the region particularly because of its economic dependency on tourism (P1-P6).

In this period the regime was dominated by the touristic sector and the conservation mindset (P1- P6). The interaction between these two aspects was reflected in nature tourism, academic tourism and ecotourism, activities that were taking place in Monteverde and that were central to the local economy. The institutional setting was integrated by organizations carrying out research, preservation and educational programmes, private businesses highly dependent on the touristic sector and a closer participation of the government (P2, P3,P5).

The niche innovations, promoted by the grassroots movements, were aimed at refining water management, increasing food security and decreasing GHGs emissions, which included the implementation of the electric route, a more efficient use of resources for cattle raising and an improved waste management system (P2). COVID paused or slowed down some of the projects that were taking place, for instance, the study abroad programmes where students stayed with local families (P4), contributing to the household economy, the food banks initiative and the activities of the artisans cooperative (P1). However, it also functioned as a catalyst for projects aimed at diversifying the economy and decreasing the environmental footprint (P1-P6). These projects encompassed food security initiatives, such as the community garden, home gardens and the distribution of fruit trees for local gardens; incentives for increasing the local consumption and production, including regional fairs where producers could sell their goods, a public list of local producers with information on what they offer and an advisory programme for entrepreneurial businesses; and initiatives for strengthening the local economy, such as the implementation of a local currency and a swap shop.

4.2.2 Understanding how grassroot movements led to transformative change through a TSI perspective

Grassroots movements, as the agents of transformative social innovations in Monteverde, have created new ways of doing things, proposed new rules, values and paradigms, and established new social relationships where power structures have changed. The following sections begins with a description of the particular setting in Monteverde in which transformations and grassroots movements have emerged. Then, the analysis goes to the elements studied in the TSI framework which are: drivers, innovations, actors, funding mechanisms and monitoring practices. And finally, challenges for grassroots movements including the COVID scenario are presented.

Particularities of Monteverde

There are some relevant factors identified by the community leaders which have contributed to the creation of grassroots movements and the sustainability transformations that have taken place.

One of them is the type of nature in Monteverde. Due to its geographical characteristics there is a rich ecosystem, with unique animals and plants that have attracted the interest of people with a conservation mindset, among them researchers and tourists (P5). The first foreigners to arrive were a group of Quaker who migrated from the U.S.A. and built a community with the local Costa Ricans (P5). They gave great importance to the value of nature and transmitted it to the rest of the people (P1- P6). The various groups that established in Monteverde created a diversified and collaborative community which has been acknowledged as a relevant characteristic for the transformations that have taken place (P2). Tourism is another factor for the sustainability transformations in Monteverde since it has been an important source of new ideas, knowledge and economic growth (P1), although, the overdependency in this sector (P3, P4) and the increase on the demand of resources were negative consequences (P2).

Another characteristic of Monteverde is that the private businesses are locally owned which allows for economic income to remain in the community and contribute to its autonomy (P3, P4, P5). Locally owned businesses have provided a secure source of income and independence of time, facilitating people to participate in grassroots movement (P3, P4), as participant 5 mentioned about the circumstances for his involvement “I had time to invest in all these organizations”. The promoted education has also been an important factor for translating the economic benefits into opportunities and give younger generations a motivation to continue their life in Monteverde, noticed by participant 3 who said “we returned to a place that offered us job”¹, and encourage further development.

The last factor identified, linked to the geographical characteristics of Monteverde, is that due to its remote location the community was used to solve their needs by their own means and with the resources available (P5). The government was not a relevant actor in the early days of the community’s development (P5) and that independence is something that stimulated the proactive mindset (P4). “In Monteverde there was already a culture of ... when there is an emergency, let’s become active as a community and then we see what is required to bring from public institutions”² (P3).

¹ Authors Translation; Original: “regresamos a un lugar que nos ofrecía trabajo”

² Authors Translation; Original: “En Monteverde ya existía una cultura de.. cuando hay una emergencia, activémonos como comunidad y luego vemos que es necesario traer desde instituciones públicas”

Drivers

The previous elements discussed are contextual factors that have been relevant for the transformations that have taken place in Monteverde, however, there were particular situations that explain the origin of the individual grassroots movements.

The community identified the need to diversify the economy, first from the dairy industry and later from tourism which was accompanied by a local motivation to preserve the environment (P3, P5, P6) and an international interest in the conservation of the tropics (P3). There was also a desire to increase the family's wellbeing and create the conditions where women could generate an income (P1, P2, P3).

With the increase of visitors the community decided to endorse and develop academic tourism so as to create the greater benefits for the environment and the community (P4). Tourism was also a driving force for the sustainability transformations in Monteverde in itself since some visitors have conservational and environmentally friendly practices in mind and expect from local businesses to adopt them (P2, P3). For instance, a sustainable waste and water management system and efficiency in the use of energy. To adapt and mitigate the effects of climate change from within the community has been another driver (P2). And the most recent one has been to face the challenges of a global crisis, taking into account social, economic, and environmental aspects through programmes that strengthen the local economy, improve food security, and the wellbeing of the community, offering an alternative to the lack of flexibility of governmental organizations (P3). Grassroots movements have served to the need of creating new opportunities for cooperation, for providing or sharing knowledge and the available resources (P6).

Innovations

Grassroots movements challenged the way of living and particularly the valorisation of nature (P1, P3, P5), as opposed to the previous mindset in which people's living was based on extractive practices. It was acknowledged that being sustainable was beneficial for the economy (P4, P6). An important agent of change that influenced the values at the household level were the women who participated in the artisans cooperative. They gained a different understanding for nature since their economic income was directly related to the appreciation and observation of nature (P1, P3). Families recognized that their wellbeing was related to the preservation of the environment and these values were transmitted to the children. The paradigm regarding nature changed and the mindset became "it is everyone's mission to fight for the conservation of this forest"³ as participant 1 stated. It recognizing the responsibility of the community as

³ Authors Translation; Original: "es una misión de todos luchar por la conservación de este bosque"

well as the one of the visitors, government and whomever, through direct or indirect actions, could influence the conditions of this ecosystem.

This type of social innovations also brought attention to the usefulness of uniting efforts and collaborating (P2), in helping to recognize that individuals and the community have the power to shape their future (P1, P4). These organizations were focused on creating capabilities for the community, so that it could keep on creating its own opportunities, as it is expressed in the statement of participant 4: “people come to depend on [non-profit] organizations because, indeed, sometimes they are able to solve challenges. We believe more in education, in participation, in the empowerment of the community”⁴. This empowerment was also reflected on the increase of women’s independence which challenged a sexist culture and gave more opportunities for equality (P1, P2, P3).

The paradigm shift was accompanied by institutional changes that were part of the transformations. The education of local institutions was shaped under the principals of sustainability and community building (P3, P5, P6), they created “[the] capacity to think that we have the potential to do things since we are children”⁵ (P4). Private institutions promoted the participation and wellbeing through programmes such as community work for students, gave scholarships to children from families with low resources and organized events which integrated the whole community. The local public school programme was also shaped to address the needs and opportunities of the community, which included technical education on agriculture and tourism with the sustainable aim (P3).

On the other hand, the economic institutional changes have allowed for sustainability to become a priority and a source of income (P3, P4, P5, P6). The organizations in Monteverde have been an example of this since an important part of their funds or income come from carrying out activities that are based on sustainable principles. In this sense, an accomplishment in the institutional setting has been the establishment of the Monteverde Community Fund since it has provided an alternative to the limitations of the economic system. Its purpose is to contribute to the sustainable development of the Monteverde and it has prevented economic resources to be a limitation, allowing to carry out projects that have the local needs and objectives as a priority (P4, P6).

A relevant step in the ongoing transformation has been the institutionalization of the value of sustainable practices by stablishing a social currency. This initiative challenges the current economic system by giving value to actions that are relevant for the community but are not

⁴ Authors Translation; Original: “las personas llegan a depender de organizaciones [sin fines de lucro] porque efectivamente llegan a resolver situaciones. Nosotros creemos más en la educación, en la participación, en el empoderamiento de la comunidad”

⁵ Authors Translation; Original: “capacidad de pensar que somos capaces de hacer cosas desde que son niños”

recognized by the global market and the expectation is that it will support a more resilient community (P3). Another initiative that has addressed values not recognized by the current economic system is the homestay family program, which retributes the work carried out at home, usually by women. Students from abroad receive an accommodation with local families which, besides from benefiting from knowledge interaction, receive an income for the day to day activities that are done in the household (P4).

Other types of institutionalization have been establishing organizations in charge of the conservation of the forest (P1, P2, P3, P4) and of supporting a type of tourism that appreciates nature and cares for its preservation (P3, P4, P6).

In addition to the previous changes there were new practices that were adopted. The first one being a transition from a livestock economy to a tourism economy. Instead of deforestation practices the goal was to preserve and protect the environment which was also reflected in the environmental education that was promoted (P1-P6). Conservation and reforestation programmes were set in practice and locals started to develop business models which were dependent on nature conservation and tourism, which increased due to an interest for the particular setting in Monteverde (P3, P5, P6). With tourism and population growth the environmental pressure was intensified, the amount of garbage increased and so as to the use of fossil fuels and natural resources (P2). Food security was also endangered given that locals started to consume the same products as to what tourists prefers and those were goods that were brought from other regions (P4). The community became more dependent on external agents (P5). However, the current efforts are aimed at reverting these trends. There have been improvements to the waste management system which include storage facilities for sorting the garbage and endorsing home composting (P1, P2). For diminishing CO2 emissions, the changes in practices have been the increase in the use of electric vehicles, of bicycles and of walking (P2). There have also been improvements in agriculture and livestock activities by lessening the use of pesticides (P3), applying organic fertilizers and feeding cattle with non-commercial feed (P2). To improve the economic resilience of the community and diversify the activities from tourism the practices that were implemented included markets or fairs in which local producers could sell their good, developing community and home gardens for self-consumption, the use of a social currency and swapping goods instead of buying new things and throwing away the ones that were no longer needed. The new practices allowed to give value to sustainable actions and further enhance the transformation.

Actors

The actors that collaborate with the grassroots movements of Monteverde, are from foreign and national backgrounds, from universities, private businesses and governmental institutions. It has been a combination that has allowed to share information and innovations from participants with a foreign vision, community members who know the local needs, opportunities and available resources, and foreign settlers that share characteristics of the two former.

The collaboration networks are part of the infrastructure that has allowed for human resources to be allocated in the initiatives that need support (P3, P6). The participants are attracted through word-of-mouth and by the reputation of the organizations (P1, P4), and for specific projects the communication mechanisms include public campaigns (P3, P6). There has also been an attraction of national and international cooperation with academic institutions. Besides from the researchers that came from foreign universities, there are study abroad programmes that welcome international students and current efforts are aimed at attracting more national students as well (P4, P6). These programmes take advantage of the input of diverse views and students can take home the new knowledge and experiences. There is a mutual learning between local and foreign actors (P1, P4) “responding to an international need for sharing experiences and learnings ... learning from each other about sustainable practices” ⁶(P2).

The economic retribution for the local people that participate in the community initiatives is either covered by one of the established grassroots organization or their economic income is secured through their work in a private business. This is important since, as participant 4 mentioned, “having an economic income.. allows us to dedicate the time to think about sustainability”⁷. There are other participants who receive a payment in form of alternative currencies or with funding for their children’s education but these methods are usually used for people with a more intermittent contribution (P4).

Grassroots movements in Monteverde have cooperated with governmental institutions, such as the municipality, the Ministry of Agriculture, the Ministry of Health, the Ministry of Education and the Ministry of Environment and Energy, for achieving sustainability transformations (P2, P3, P4, P6). In some cases, grassroots movements have complemented governmental efforts or worked for correcting institutional shortcomings. They have also provided continuity to the implemented projects, given that their permanence is not affected by radical changes in political ideologies when new elections take place (P4).

Funding

Grassroots movements have maintained a constant and independent source of funding from income generated by the projects in itself or from donations provided by local businesses and foreign individuals and organizations. Which has served for projects’ continuity and autonomy as participant 4 mentions: “it allow us to really choose projects according to community needs and not only to get funds, that gives us an extremely important freedom” ⁸. Many of the donors

⁶ Authors Translation; Original: “respondiendo a una necesidad internacional de compartir la experiencia y lo que estamos aprendiendo... aprendiendo uno del otro de prácticas de sostenibilidad”

⁷ Authors Translation; Original: “tener un ingreso económico.. nos permite poder dedicarle el tiempo a pensar en sostenibilidad”

⁸ Authors Translation; Original: “nos hace poder realmente escoger proyectos según necesidades comunitarias y no solo para conseguir fondos, eso nos da una libertad sumamente importante”

are people who have been in Monteverde, recognize its value and would like to contribute to its development (P2). The legitimacy of the local organizations is an encouragement for donors, since they are aware that what they contribute will be used in projects that encourage the sustainable development of the region (P1).

There are some initiatives that also receive funds from grant awarding institutions, nevertheless these cases are the minority (P4). The government also provides resources for initiatives that go in line with its development plan, such as the decrease of carbon emissions and actions aimed at facing the pandemic (P2, P3). Another source of funds come from the activities of the organizations, such as the sales of products and services (cooking classes, agritourism, education programmes). There is also a contribution that comes from local businesses either through monetary or in kind resources (P2, P3).

Monitoring

The type of monitoring performed depends on the organization and the project, however, it is not an activity that has been implemented in every initiative. A reason for this is that intangible or subjective impact could be harder to measure, for example, the amount of people that participate in an education programme is a tangible, easy to measure metric, whereas the positive impact of the education received has to be measured indirectly (P4). An alternative would be to carry out interviews for monitoring purposes, however, this means using time, human and monetary resources that could be otherwise used for the organizations core activities. The monitoring practices could serve internally for identifying if projects and initiatives are having the desired impact, to allocate resources into the initiatives that are more successful or generate greatest impact and to rethink the use of resources in the ones that are not having the desired results. Externally, monitoring can serve to support the legitimacy of grassroots movements in the community and with other actors, and be able to increase their network of collaboration and influence in other contexts. Monitoring is not only used to measure the results it is also useful for presenting the current conditions, “it helps us a lot in guiding where to make a difference”⁹ (P2), and be able to make a diagnosis and analysis of what is needed, the opportunities and action plan. Or as participant 3 mentions “[to] measure the impact, understand the impact, ... see possible scenarios”¹⁰.

Results and Benefits

The grassroots movement ecosystem has produced a democratic institutional environment in which any member of the community has the possibility to participate and influence the development (P2). A result of these initiatives has been to build a community in which single

⁹ Authors Translation; Original: “nos ayuda bastante en guiar en dónde hacer la diferencia”

¹⁰ Authors Translation; Original: “medir el impacto, entender el impacto, ... ver posibles escenarios”

efforts are summed up for the transformations to occur, as participant 6 mentions “all these small individual actions that have taken place, together generate more change”¹¹. There has also been an empowerment of the community through education and increasing capabilities (P1, P3, P4). The local knowledge and skills have been potentialized by the integration of foreign visions, which has been beneficial for the communities development (P1, P3, P5). The empowerment has reflected in the decrees of inequalities, such as in gender where more opportunities were generated and sources of income so as to gain independence (P1, P2, P3). There have also been benefits from a personal perspective. These projects and initiatives have provided people a rewarding feeling, “a sense of responsibility”¹² (P2), since they contribute to the general wellbeing. “psychologically it is very important too, right? To know that even though I am in a moment of crisis, I still have something to give to the community”¹³ (P4).

On the environmental aspect, the benefits have been the regeneration of nature, particularly in an areas that were eroded by a livestock economy (P3, P5, P6), good water and soil quality (P1) and to be able to work with resources that were not used efficiently (P6).

The conservation of nature and other sustainable practices have resulted in an increased attraction of visitors, which has brought benefits on the economic field. The improved economy has generated more opportunities for the new generations and for the creation of locally owned businesses (P3, P5), in particular of new jobs and income sources linked to nature’s conservation (P1, P2, P3, P4, P5). There has also been an increase in the infrastructure that supports sustainable practices either in tangible assets, such as sidewalks, charging points for electric vehicles or waste sorting stations (P2), or intangible, such as the common system that is required for the local currency and other networks of collaboration (P3). These networks have provide structure and facilitated requesting and receiving support from external agents. Participant 3 mentions that “[the] organized participation of many institutions is a great achievement because it allows the use of local resources, human resources, logistical resources, material and economic resources”¹⁴.

Challenges

The current and future challenges that grassroots organizations in Monteverde face are related to internal and external conditions.

¹¹ Authors Translation; Original: “todas estas pequeñas acciones que se han dado individualmente, juntas generan más cambio”

¹² Authors Translation; Original: “sentirse responsable”

¹³ Authors Translation; Original: “psicológicamente es muy importante también verdad? Saber que yo aunque estoy en un momento de crisis, todavía tengo algo que darle a la comunidad”

¹⁴ Authors Translation; Original: “ participación organizada de muchas instituciones es un gran logro porque permite utilizar los recursos locales, recursos humanos, recursos logísticos, recursos materiales y económicos”

Climate change is an example of an external condition that is not entirely in the scope of influence, however, to be more resilient for facing its effects is one of the challenges ahead (P2). Another one is to maintain continuous effort for decreasing the environmental footprint and not settle for what has been achieved so far (P2).

From an internal point of view, a challenge is to ensure continuity, interest and opportunities to participate in grassroots movements (P1, P3, P4), and for new projects in particular to gain trust and legitimacy (P6). Some of the organizations also face the challenge of adapting and including new technologies to remain competitive (P1). For others, the time component poses the challenge of reconsidering their purpose and objectives in order to ensure continuity (P3, P4). Looking forward, an additional challenge is to increase communication and cooperation with governmental institutions while preventing political interests to interfere in the objectives of grassroots movements (P3). And along with the previous challenges goes the one related with achieving a balance between the economic, social and environmental development (P4).

COVID

The most recent challenges have emerged with the pandemic. There has been a decrease in the economic resources available for the community, which implicitly affects grassroots movements and members who participate in them. Although, up until now all of the organizations have managed to survive the financial situation due to savings or restrictive expenditures, a challenge for some is to get out of the economic deficit (P1, P4). The lower income for members of the community has caused for their efforts to be more focused on securing their personal wellbeing, which has resulted in opportunities and challenges for grassroots movements. On the negative side, it has increased the stress of volunteering members and organizations had to rearrange their retribution scheme (P3). On the positive side, it has represented an opportunity for increasing the participation of another sector of the community in sustainability transformations. People in need for an additional source of income are being employed in grassroots initiatives and, besides from the economic retribution, they experienced the satisfaction of contributing for the sustainable development and its importance (P2).

On one hand, it is recognized that COVID is going to be a challenge in the future if the pandemic is not controlled and tourism is not able to return, because an important part of the funds of the organizations come from the income generated by this sector (P5). But on the other hand, the pandemic has triggered a new mindset for “generating a culture not necessarily only of consumption but a culture of well-being”¹⁵ (P4).

¹⁵ Authors Translation; Original: “generando una cultura no necesariamente solo de consumo sino una cultura realmente de bienestar”

4.2.3 Understanding how grassroots movements impact sustainability transformations in Monteverde

Under the 3D Framework, which weighs the impact of social innovations in the dimensions of depth, width and length (Strasser, de Kraker and Kemp, 2020), the transformations that have taken place in Monteverde can be regarded with a high degree of impact and with opportunities for improvement in the width dimension. The changes that have occurred are now part of cultural values, local policies and incentive mechanisms. Since they are transformations rooted in a formal structure, this gives them a high level in the depth dimension.

The high rate in the width dimension is related to the incidence of the changes across several societal sectors. They have occurred in agriculture, livestock and tourism, the most important economic activities of the region. The transformations have also been at the individual and organizational level, product of the incentive mechanisms and policies but most importantly as a result of education. The width reach that the changes have attained is related to the collaborative and cooperative values of the grassroots movements of Monteverde in which unity among diversity has been favoured. It has been a virtuous cycle that started with the participation of individuals from different backgrounds and that has encouraged further integration of people from diverse contexts and with new ideas. The innovations have also been implemented in various geographic and cultural contexts. Ecotourism has spread across several countries, the structure of the Monteverde Community Fund has also been carried out in another region in Costa Rica and has the potential to be replicated in other locations, and the model of linking the community and tourism to sustainable development is being implemented in other settings. It can be expected that when the most recent initiatives gain track on the local context they will be reproduced in other areas, such as the local currency initiative, the waste management system and the electric route. However, the width dimension could be further deepened if the implemented innovations overcome the local setting and gained track at a national level with the support of the national government.

On the aspect of length, the implemented social innovations have persisted and evolved over time which has benefited the previous two dimensions. There has been continuity in the resources and activities of the grassroots movements. Proof of that is the duration of the organizations in Monteverde. This has also increased the legitimacy of grassroots movements since the results are consistent and people feel more comfortable trusting and supporting changes and new structures. The impact that has been accomplished by grassroots movements in Monteverde for sustainability transformations is related to the formal structure that has developed around the initiatives, the degree of integration and the persistence of the organizations over time. However, it is important to notice that even though the three dimensions have been high it does not ensure that they will be in the future. One of the challenges for the studied organizations is to ensure participation and continuity, without it the high level attained in the three dimensions could drop as well as the impact of grassroots movements.

The results from analysing sustainability transformation in Monteverde within the framework of the MLP suggest that the transformations that took place before the 90's were an outcome of landscape events and grassroots movements that challenged an initial weak regime. By the end of the period the regime had gained strength and opposed some of the innovations proposed in the economic realm, such as the initiative that was aimed at diversifying the tourism-based economy. The second set of transformations was encouraged by the landscape adjustments generated by climate change and the COVID pandemic. Grassroots movements were able to take these opportunities and pushed for the implementation of innovations that addressed the needs of the community within a new context. On this occasion the initiatives were able to challenge the regime and implement innovations for diversifying the economy, given that tourism was no longer meeting the needs of the community.

The analysis of grassroots movements and sustainability transformations, through the lens of the former frameworks, shows the conditions in which they took place, the characteristics of the social innovation ecosystem and the impact of grassroots movements measured in three dimensions. It displays how the coordination between grassroots movements, the established regime and the opportunities that the landscape presented are relevant for achieving sustainability transformations. The intended changes towards decreasing the economic dependence on tourism were better accepted when the landscape conditions changed and a need for alternative sources of income was demanded by the regime.

Context is crucial, the external conditions beyond the actors control offer opportunities for innovations to settle in and to be able to seize them a participatory and capable community is advantageous. The results also show that when movements are persistent over time they increase their potential for achieving transformations even if the landscape does not produce significant changes.

5 Conclusion

The aim of this dissertation was to explore the impact of grassroots movements on sustainability transformations in order to identify how can transformations be encouraged from a bottom-up approach in which the community is set out to develop solutions according to local needs and opportunities. This relationship was analysed under the context of Monteverde, Costa Rica, a community that had attracted attention due to the sustainability transformations that have taken place and the variety of grassroots movements cooperating in this setting.

This study shows that the appearance and growth of grassroots movements is directly related to the emergence and development of sustainability transformations in the context of Monteverde. The results present how various grassroots movements can coexist and cooperate in order to achieve social, economic and environmental transformations, sharing the common goal of directing the development path towards a sustainable way of living. The interaction between the different grassroots movements allows for each to focus on an area of expertise while sharing the available resources and getting the most out of them. These resources could be monetary, physical or human, being the last one the most relevant for transmitting experiences and knowledge. This interaction has also allowed to create networks of collaboration which are useful for responding to urgent needs such as in a crisis situation, and minimize the negative effects for the community.

On the understanding of how grassroots movements led to transformative change in Monteverde, the particularities of the region played a significant role for initiatives to emerge and the sustainability transformations to take place. The geographical characteristics provided the region with a rich nature and made it a location difficult to access. On one side, in the early stages of development and due to the remote location, the influence of the government was limited and the community grew with the mindset of generating their own solutions for meeting their needs with the available resources. In the present days, this independence is reflected in the businesses of Monteverde since the majority are locally owned, which gives the community a degree of autonomy. On the other side, the rich nature attracted foreign settlers and tourists that contributed to the development of the community while introducing a different appreciation about the value of nature and new knowledge, which help in creating a diversified community. Under these particularities, the driving forces that encouraged the emergence of grassroots movements were the need to preserve the environment, to adapt and mitigate the effects of climate change, to diversify the economy, to become a more resilient community and to increase the wellbeing of the community. The actors that participate in grassroots movements in this context are locally-owned businesses, national and international universities and governmental institutions, creating a networks of collaboration with the community which were beneficial for sharing knowledge and other resources that strengthen grassroots movements. The sources of

funding for these initiatives are mostly generated by grassroots movements in itself, either from donations or from the income generated from their activities, which has provided autonomy and continuity for the goals of the community.

Grassroots movements in Monteverde recognize the value of monitoring the context and results for understanding the current scenario and boosting their impact, in spite of this, not all of them employ this practice. Nevertheless, the recognized benefits and results of transformative grassroots movements were social, which englobed building a community, establishing a participatory environment, joining efforts for greater impact, developing collaborative networks that encouraged the efficient use of resources, empowering the community and providing a psychological satisfaction for the participants; economic, since the transformations generated, directly or indirectly, improvements to the economy and favoured the creation of jobs or sources of income that were related to the conservation of nature; and environmental, by regenerating and preserving nature.

The main challenges identified for grassroots movements in Monteverde include the need to become more resilient to face climate change, decrease the environmental footprint, ensure continuity and participation, adapt and readjust to the changing conditions and balancing social, economic and environmental needs. COVID also poses a challenge given that the decrease of economic resources has impacted the community. For some, this has meant an opportunity to start participating in grassroots movements and for others, it has affected the motivation to participate as a result of a decrease in time and income. Even though, the pandemic represents a risk for the community, it has also helped in generating ideological and practical changes with the potential for being transformative.

The transformative impact of grassroots movements, as evaluated within the dimensions of depth, width and length is considered high given that the innovations have challenged cognitive and normative rules, have been constant over time and have generated changes in across societal sectors. Although, the influence at a national scale, particularly on national governance, could be further enhanced increasing the impact on of the width dimension since this would endorse the scope of the transformations.

The study provides some important insights on the role of grassroot movements on sustainability transformations. The first one being empowering the community with education and by building capabilities that could later translate in the development of innovations and solutions for meeting their particular needs. In the long term, this gives the community autonomy for being owners of their income sources and time, a characteristic that was considered a motivating scenario for further enhancing participation in grassroots movements.

Another learning is that when sustainability transformations are linked to economic benefits it helps in communicating the importance of the intended outcome, bringing more actors to participate in the initiatives. In this regard it is also relevant to notice that the transformations in Monteverde were supported by for-profit local businesses either as partners for implementing the innovations or funding agents of grassroots movements without the community's agenda

being changed. A reason for this is that grassroots movements in Monteverde have developed a structure of funding that allows for the objectives of the community to keep on being a priority. The initiatives are conceived, within their scope, to generate the necessary income for in the medium and long term to have financial independence. In the cases where this is not possible or when the initiatives are at a development stage the community fund functions as an enabler for financial means not to be a limitation and keep creating solutions that address the local needs.

In Monteverde grassroots movements are not in opposition to the government, they cooperate with the institutional setting and regulations while at the same time create mechanisms and initiatives to cover the deficiencies or the issues not addressed by the former, improving the current system. Participants of the grassroots movements have later been involved in governmental institutions and members of the community have also contributed to politics, which reflect the relationship between the two. Though, it is important to notice that grassroots movements work together with the government yet they are not dependant on it. They conserve their financial independence and capacity to make changes, therefore their vision and priorities are not jeopardized by the governmental interests. The initiatives have been owned by the community and neither the government nor other institutions have encouraged a paternalistic dependence in which the capacities of the community are diminished.

These findings can contribute to enhance sustainability transformations through grassroots movements in which local needs and opportunities are addressed. The results offer a perspective about how sustainability transformations and community-based initiatives can emerge and develop, as well as an assessment of the influence of grassroots movements on sustainability transformation. This is relevant in order to have more resources for generating the transformations towards a way of living in which sustainability is a priority and encourage the challenges that arise to be tackled from a holistic perspective.

For future research the study could be expanded by adding the participation of other members of the community who are less active in the initiatives and the programmes of grassroots movements, providing a different perception about the influence of grassroots movements. In order to increase the overall impact of grassroots movements, each initiative could be analysed under the lens of the 3D Framework so as to identify individual opportunities for improvement. It would also be relevant to do an analysis on the grassroots movements that did not achieve to generate transformations and be able to identify the causes for it, given that learnings are gained from successes and failures.

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Appendix A

Coding Structure:

Category: Sustainability Transformations

Code: Transformations

Code: Local Particularities

Code: Drivers

Code: Benefits

Category: Grassroots Movements

Code: Origin and Purpose

Code: Actors and Collaborations

Code: Funding

Code: Achievements

Category: Impact of Grassroots Movements on regional sustainability transformations

Code: Paradigm shifts

Code: Institutional changes

Code: New Practices

Subcategory 1: Impact of Context for Grassroots Movements

Code: Challenges

Code: COVID

Appendix B

Interview Structure

Block 1. Demographics

1. General Data
2. Background (Role and activities in the organization)

Block 2. Sustainable Transformation

3. Which were the sustainable transformation that took or are taking place?
4. What have been the changes in practices?
5. What are the perceived benefits (social, economic, environmental) of the transformations?
6. Which are the actors that have contributed for the transition?
7. Which are the characteristics of Monteverde that have enabled the creation of grassroots movements?

Block 3. Grassroots Movement

8. How did the organization started?
9. With which actors does the organization collaborates?
10. Which are the sources of funding for the organization?
11. Which methods or indices are used to measure results?
12. Which have been the main achievements of the organization?
13. How have other actors been attracted to the movement?

Block 4. Relationship between initiative and sustainable transformations

14. What has been the role of the organization for the transformations?
15. Were there particular preconceptions or ideologies that the transformations have challenged?
16. Have the transformation created increased capacity or knowledge for the community?
17. Have the transformations generated a redistribution of power? How has the distribution of power changed?
18. Has the organization generated a change in policies?

Block 5. Challenges and COVID

19. What are the challenges for the movement?
20. What changes does the movement has experienced under the COVID scenario? Has the aim changed?
21. Have initiatives or projects been cancelled or been born during COVID?