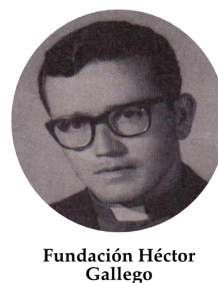


Developing an educational curriculum for organic farming and permaculture in the District of Santa Fe

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In collaboration with McGill University and Fundación Hector Gallego



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Panama Field Studies Semester

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Host Foundation

La Fundación Héctor Gallego is a small non-governmental, not for profit organization built to serve the small farmers of the District of Santa Fe. The idea for the foundation was introduced in 1968 by Jesús Héctor Gallego, a Roman Catholic priest. He arrived at Santa Fe and began his work of evangelizing, educating and uniting the farmers of the region. He helped decentralize the district and taught the importance of working together. He was killed in 1971 for his activism work but his legacy lives on in the form of La Fundación Héctor Gallego. Throughout the years, they have built facilities such as a small library with computers and internet, public meeting spaces and other cooperative services.

Their goals are aimed at local residents and farmers for sustainable development and economic solidarity. This means providing education resources to the entire community with a large focus on local farmers. They promote the importance of permaculture and organic agricultural practices to face the current challenges, especially those related to climate change and water. They foster exchange of information and connections amongst members living in the community, promoting agro-tourism and the creation of sustainable economic projects. Some of these projects include a local seed nursery, providing low-interest loans and facilitating lectures and meetings.

Introduction

Santa Fe is located in the central mountainous region of Panama in the province of Veraguas. The District of Santa Fe is considered a rural territory with a population of 15 585 people according to the 2010 census (INEC, 2010). Agriculture is the dominant source of income for residents in the area with a total of 71.1% dependent on the agricultural industry (IICA, 2014). Approximately 27% of the land is occupied by over 3 285 farms producing various crops (IICA, 2014). There are various forms of agriculture, with the majority growing permanent crops and some practicing small cattle raising (INEC 2012). The main crops of the region by land cover are coffee, rice, oranges, beans and corn. Some secondary crops typically include banana, plantain, pineapple, passion fruit, tomatoes, cabbage, yuca, guandu, onions, sugarcane and cilantro, among others.

The humid tropical forest covers the majority of the area. This particular forest ecosystem has a very important role in the Santa Maria Watershed, helping provide year-round good quality water that the province of Veraguas relies on. The main rivers, Santa María, San Pablo, San Pedro, Calovébora, Veraguas, Belén, Coclé del Norte, and Río Grande, like all fresh water resources, are essential water systems vital for life.

Agricultural Challenges in Santa Fe

Climate Change

Climate Change is a phenomena affecting the entire world. Often, small farmers in developing countries are the most vulnerable to the changes in climate (GFDRR, 2011). Specifically the dry seasons in the Santa Fe region over the last few years, have become hotter and rainfall has decreased by 10%

(ANAM et al., 2013). The water scarcity is affecting irrigation and water availability for livestock, crops and pastures leading to decreased yields. Other impacts to note are increased crop failure, increased spread of diseases and pests, loss of forests and biodiversity, and human health impacts (GFDRR, 2011). With the increase variability of the climate and intensity of extreme weather events, small rural farmers will become more vulnerable.

Spread of Diseases and Pests

Diseases, insects, fungi and invasive weeds are constant pressures for the farms in the region. The constant use of agro-chemicals, climate change and lack of biodiversity can all contribute to the spread of unwanted pests. The increase in temperatures and water shortages aid in the spread and reproduction of organisms, increasing their abundance. (Parmesan, 2006). Droughts can change the physiology of host species, leading to reduction in beneficial insects that feed on them thus influencing the impact of pest infestations (Rosenzweig et al., 2001). Dry conditions increase competition for soil moisture between invasive weeds and desired crops. Pests build up resiliency with the continuous use of agro-chemicals and this resiliency leads to increased application chemicals, costing farmers more money and further deteriorating the environment.

The most prominent pests in the Central Mountain range of Panama, are broca (*Hypothenemus hampei*), a insect affecting coffee, “Panama disease” (*Fusarium oxysporum*), affecting bananas, coffee rust and moscamed affecting the fruits (Labrada et al., 1996). Although there are many more invasive species, these are currently the most problematic to the farmers in the District of Santa Fe.

Land rights

Like many rural places within Panama, there is an issue for land tenure, 81% of all the farmers in the District of Santa Fe do their agricultural practices without official land rights to the property (INEC,

2012). While this may pose economic, social and political issues for producers, it can also have a negative impact on the environment. Lack of land tenure often gives farmers less incentive to take care of the land with more focus on immediate gains rather than long-term consequences. Deteriorating the land inhibits the land productivity and further decreases the environmental sustainability.

Water Contamination and Pollution

The Pacific slope, where the Santa Maria Watershed is located, has the richest water resources in the country (ANAM et al., 2013). The Santa Maria river spans 148 km from Santa Fe, Veraguas, the upper region of the watershed, to Golfe de Parita, Herrera in the Pacific (Steeves, 2016). The quality of water decreases as you go downstream from Santa Fe (Steeves, 2016). This is due to heavily deforested land-cover and agricultural practices upstream in the Santa Fe District (Lombardo and Rodriguez, 2008). The water passes through a land gradient of mixed agricultural lands used for a variety of crops and livestock raising which contributes polluted runoff into the water (Venegas, 2012). Much of the land surrounding the river has been cleared resulting in a disturbed environment where runoff carries soil, organic matter and pesticides into the river (Steeves, 2016). This increase of pollutants into the waterways have negative impacts on the livelihoods of the communities and ecosystems that are downstream from the disturbed areas. The use of chemicals in agriculture can result in loss of fish and plant species (Baron et al., 2003) In the dry season especially, many people rely on the underground water reserve from wells and water contamination can have negative health consequences (Baron et al., 2003).

Problems with Conventional Farming

Conventional farming, in this case, refers to practicing monoculture, row planting and the use of synthetic-based agro-chemicals. Often, conventional methods of farming require many inputs and tend

to have negative effects on the environment (Baron et al., 2003). Monoculture is a method of growing a single or very few crops in one large area. It attracts many pests and exhausts nitrogen in the soil, which encourage the use of chemical fertilizers and pesticides (Labrada et al., 1996). Pesticides have the disadvantage of also eliminating beneficial insects. Beneficial insects and microbes are important because they prey on invasive species and prevent spread of diseases. Without them and little crop variety, the transmission of disease is faster and reproduction of pests is greater (Rosenzweig et al., 2001). With an increase in pests, often comes an increase in reliance on fertilizers and pesticides, further deteriorating the agro-ecosystem (Coleman and Amsel, 1995). Overtime, the pests build up resiliency, making it more challenging for conventional farms to resist them. On a large scale, if resilient pests emerge, it poses a threat not only to farmers regionally, but can threaten entire crop varieties.

The use of pesticides also degrades soil quality, killing organisms that are essential for breaking down organic matter and recycling nutrients (Coleman and Amsel, 1995). Without a living soil, fertilizers are required to provide missing nutrients. Synthetic fertilizers also disrupt the balance of the agro-ecosystem and further decreases a farmers' environmental and economic sustainability. Conventional farming works well initially and has very high yields but overtime yields decrease as the soil degrades and eventually the land becomes infertile and must be deserted or restored (Coleman and Amsel, 1995).

When agro-chemicals are applied to target a pest, often the entire site is contaminated as chemicals evaporate into the air, leach and run-off into water sources and soil. This can have negative effects on the crops, soil organisms, humans and other wildlife in the area (Labrada et al., 1996).

Organic Agriculture

FAO defines organic agriculture as “a system that begins to consider potential environmental and social impacts by eliminating the use of synthetic inputs, such as synthetic fertilizers and pesticides, veterinary drugs, genetically modified seeds and breeds, preservatives, additives and irradiation. These are replaced with site-specific management practices that maintain and increase long-term soil fertility and prevent pests and diseases.” (FAO, 2014) Organic standards still allow the use of naturally occurring pesticides but prohibit synthetic substances. Organic agricultural methods are internationally regulated and legally enforced by many nations (Paul, 2010).

In organic farming, fertilizers come from organic matter such as compost, mulch and manure rather than manufactured elements. Fertilization is also aided by techniques such as crop rotation, companion planting and long-term planning. Instead of using pesticides to deal with pests, biological pest control, mixed cropping and insect predators are methods that may be used (Paul, 2010).

In Central America, organic agriculture often refers back to traditional techniques used by ancestors. For small farmers, producing organically is a challenge due to the lack of time, money, management strategies or knowledge. It is difficult to transition from conventional farming to organic farming as it relies on having healthy soil. As a result, despite the environmental consequences, farmers continue to practice conventional methods of agriculture (Labrada, 1996).

Permaculture

Permaculture is a method of designing a landscape with a deep understanding of nature’s principles. It incorporates ecological science, traditional knowledge and empirical observations of nature to design an ecosystem from which both humans and other life benefit (Hathaway, 2016). It’s different from organic agriculture because it’s a design system with a holistic philosophy that incorporates more

than just techniques.

The philosophy of permaculture is based on indigenous communities that have discovered principles of sustainable living over millennia (Hathaway, 2016). It's aim is to create sustained ecological and economically prosperous human communities. A permaculture designed garden is an ecological garden and closely resembles resilient ecosystems you would find in the natural world (Ferguson and Lovell, 2014). The objective is to create a self-regulating, resilient, and biodiverse ecosystem with emphasis on providing products and services to humans. Contrary to many yards and farms, permaculture landscapes improve the environment by adding to biodiversity, storing carbon, and filtering air and water (Hathaway, 2016).

Pest management and fertilization are done intrinsically by the farm requiring little to no external inputs. By resembling a natural ecosystem, pests are managed by other pests in a complex food web. Fertilizer is build up in the soil and replenished by plants. For example, there are plants that bring nutrients from deep in the ground to the surface through the extraction by deep roots. Another example are plants that are strong nitrogen fixers making the essential nutrient more readily available (Hathaway, 2016). Rather than considering the individual elements by themselves, there is a big emphasis on the relationships between them (Ferguson and Lovell, 2014). In a permaculture design, elements have multiple roles. A specific species may provide shade, food, mulch, and attract pollinators. Biodiversity is a key characteristic in these agro-ecosystems as it creates resiliency. An example, instead of having a single pollinator-attracting species, it is advised to plant several in case one of the species fails. As much as possible, a plants' yields meet the needs of another plant which in return provide yields for it's needs resulting in a symbiotic relationship whereby both help each other. Initially these systems require a high initial investment of labour and time but overall results in a resilient ecosystem that produces food and other services with minimum labor and external inputs (Ferguson and Lovell, 2014).

Biodiversity

Biodiversity refers to the various types of plant species and permanent vegetation that are being cultivated and used in the agricultural ecosystem. It's one of the most important concepts in organic agriculture and permaculture practices. It provides farmers with various types of incomes, pest and disease control and resilience against the changing environment (Labrada et al., 1996).

Conclusions:

Although conventional farming is a good short-term, high yielding strategy, it's not a long lasting solution to the challenges that Santa Fe will face. It does not provide the same economic and environmental resilience that organic farming and permaculture do. In rural Panama, agricultural practices are driven by economic and alimental needs but are not sustainable for the future. They often lead to destruction of the environment as well as decreased human health. The conversion to organic agriculture and permaculture are possible solutions to the issues that the people of Santa Fe face. To tackle climate change and environmental damage, organic farming and permaculture increases water quantity and quality and biodiversity thereby providing greater resilience against climate change and the spread of disease and pests.

Research question and Rationale:

School of Organic Farming and Permaculture

La Fundación Héctor Gallego intends to create a school of organic farming and permaculture. They, themselves currently practice permaculture and organic techniques and would like to extend their knowledge to the rest of the community. Their concern for the future health of their natural

environment are the driving forces of the courses. They currently provide occasional lectures on the importance of farming in an ecological and sustainable way. They would like to have a structured program to teach people specific techniques of permaculture and organic farming with an emphasis on hands-on learning.

Before the curriculum is developed it's important to understand whether or not there is a desire for these courses, who will be taking them and how the courses will be most effective. Our research question is designed to understand the target audience for these courses and the types of subjects that should be explored. It aims to gauge the current status of organic farming in Santa Fe, how it is perceived, and what the demand is.

Research Question

What are the current methods and techniques used by small producers in the District of Santa Fe in response to the challenges and constraints they face? What is the demand for courses in organic agriculture and permaculture?

Methodology

Research design

Semi-constructed interviews were made up in order to provide qualitative information for our research. These types of interviews offer greater flexibility in data collection as it allows for more in-depth inquiries on relevant issues and more clarification of some questions. The questions were created to be used as a formal guideline which gave us the flexibility to follow topical trajectories in conversations that may have strayed from the interview topic. It was a key method to gauge the specific insights possible candidates for the curriculum had on organic agriculture and permaculture.

Population Studied

The study population were local small scale producers living in the District of Santa Fe. The local producers were both members and non-members of the Fundación Héctor Gallego. The ages ranged from 30-80 years old and with the majority males, the head of the household or available at that specific time. All the interviewees have lived in the same area their entire lives and work in agriculture for a staple food source and economic livelihood. Everyone in the community was very outgoing and friendly and open to talking to us and participating in the interviews.

Study site

The interviews were conducted in the District of Santa Fe, Veraguas, Panamá in collaboration with the Fundación Héctor Gallego. The foundation put us in contact with farmers and drove us to where they were located which were in areas known as la Gloria, los Bajos and la Muela. The second study site was at the Festival of Flowers that took place in Santa Fe, February 24th, 2017. The fair served as an excellent opportunity connecting us to a large group of local vendors selling their produce. The rest of the study sites were chosen during field excursions in el Alto, el Carmen, el Bermejo as well as in the town of Santa Fe.

Data Collection

The interviews were done in pairs, mostly while one researcher asked the questions and the other recorded the responses. Some of the interviews were voice recorded, with verbal consent of participants, and reviewed later on for analytic purposes.

There were 3 strategies used in finding producers to do interviews. The Fundación Héctor Gallego works closely alongside many of the community leaders and has many connections throughout

the District of Santa Fe and surrounding area. Hence, la Fundación was a main resource for getting in contact with farmers to do interviews. Second, was at the Festival of Flowers, where producers were selling their produce. The third method of contacting farmers was by walking around the area of Santa Fe for observations and starting up conversations with farmers we encountered.

The complete list of specific questions are found in Appendix 1. The questions were developed to understand the farmers' knowledge and views regarding organic farming and permaculture. The interviews began with simple questions such as where they lived, what they produced and if their produce was mainly used for subsistence or sold on the local or regional markets. The interviews then progressed to the biggest challenges they faced, how they adapted to these challenges and specifically what methods they used for weed and insect control to determine what methods of farming they used. The Introduction questions regarding the subjects of organic agriculture and permaculture were addressed to identify the level of understanding of these concepts. This provided valuable information to whether or not they'd be interested in learning more and also what sort of methods and techniques should be taught related to organic farming and permaculture run by the Fundación Héctor Gallego.

In our results pertaining to what type of farmer the participants were, we used the definitions of conventional, organic and permaculture introduced in the beginning of this paper.

Ethical Considerations

All participants in the interviews were informed that this information was going to be anonymously used for our personal research and presentation as well as to help create an outline for an educational curriculum for La Fundación Héctor Gallego. We informed the interviewees who we were, what we would use the information for, the length of the interview and that they were allowed to discontinue the interview at any time. Verbal consent was received at the beginning of each interview.

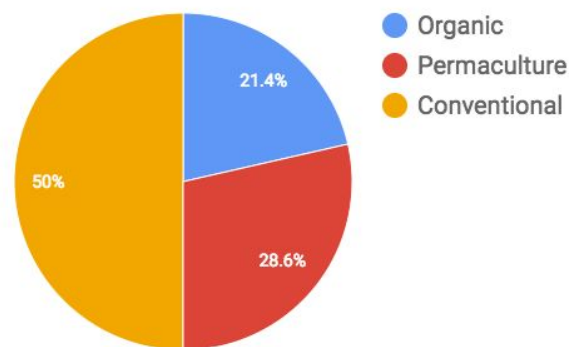
This research was performed according to the Code of Ethics of McGill University. Certification for the Ethical Conduct for Research Involving Humans course in research by the Tri-Council Policy Statement is provided in the Appendix 3.

Results & Discussion

After the end of the research period, 14 semi-structured interviews had been completed. Three of the fourteen farmers interviewed were in relation with la Fundación, seven of the interviews were done at la Feria de Santa Fe and the final four were encountered in various locations in the District of Santa Fe. The following are the interpreted results of the interviews pertaining to the research topic.

Farming Practices

Figure 1: Types of Agricultural Practices



As shown in Figure 1, half of the fourteen participants responded by saying they used agro-chemicals. Many of the respondents stated that they practiced organic methods during the

interview, but later as the conversation progressed, also mentioned the use of fertilizers and pesticides to control pests. These responses perhaps demonstrate the perception of the term “organic” which will be discussed in the latter part of the discussion.

Greatest Challenges

Figure 2: Challenges

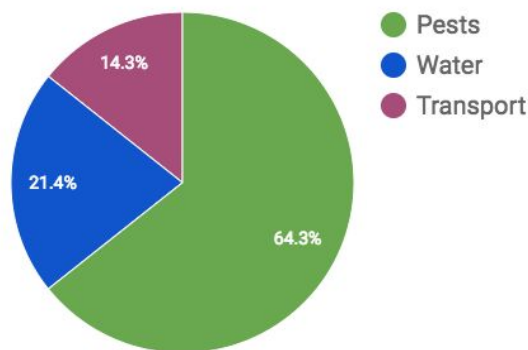


Figure 2 represents the biggest challenges mentioned by the 14 farmers interviewed. Although many of the farmers faced multiple challenges which was dependent on the products they produced and the time of year, this figure represents their response to the question “What is your biggest challenge?”. Water was the biggest challenge for 3 (21%) of the participants. Only 2 (14%) of the interviewees said transport was their biggest issue, mainly referring to lack of vehicular or road access to markets in order to sell their produce. The other 9 (64%) of participants stated that their biggest challenge was pests. Broca, was the common insect that the coffee farmers struggled with.

Responses to the Challenges:

Many of the conventional farmers did not have any specific techniques to help with their challenge of lack of water other than to cultivate less water-intensive crops. Only two privileged conventional farmers had irrigation systems because they had easy access to river water. They responded to pests by fumigation and spraying crops with pesticides, herbicides and/or fungicides.

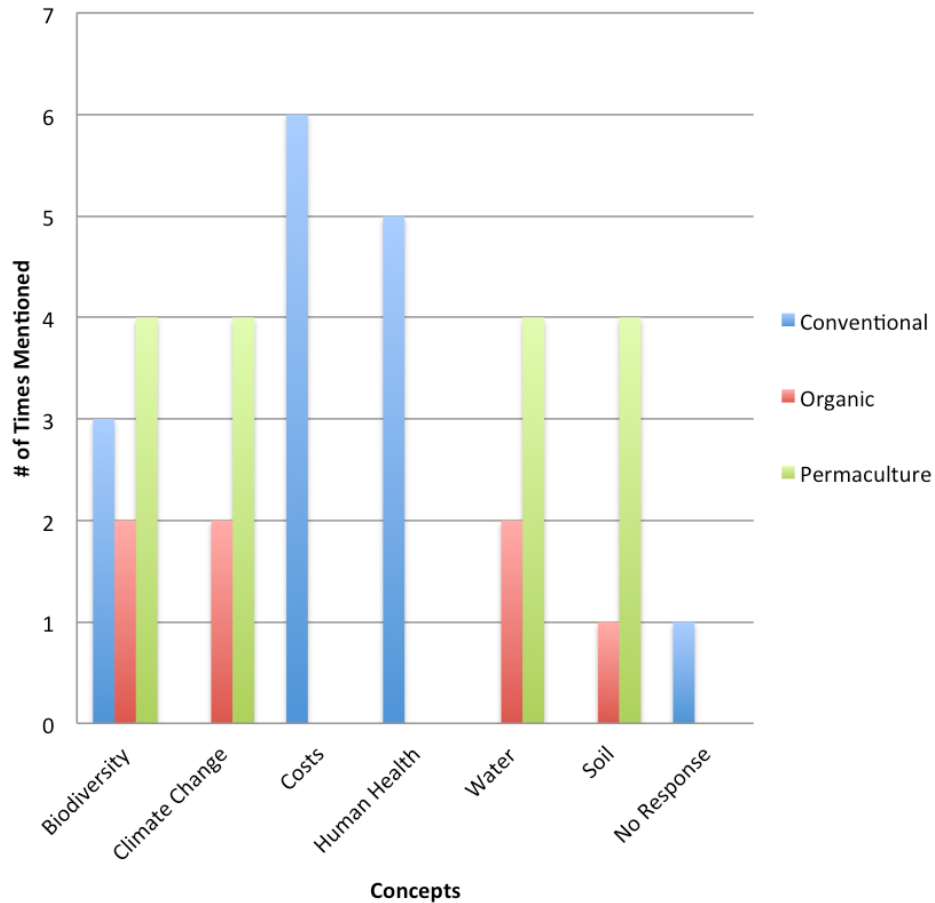
Two of the three practicing organic farming responded to pests by changing some of their plants to other more pest-resistant crops. They also responded by practicing crop-rotation. In response to their water issues they planted less water-intensive crops.

The permaculture farmers used strategies such as creating sprays of cilantro and water to deter pests. They also used integrated pest management by planting different plant species to attract natural predators of the pests. Other strategies involved rotating crops and mixed planting. Some mixed their crops with garlic plants to deter pests. Permaculture farmers responded to water challenges with water conservation techniques. These techniques include “live” and “dead” barriers, building contours along slopes as well as densely planting crops and adding trees to lessen evaporation. “Barreras vivas” are the use of plants to slow water flow, allowing more water to infiltrate into the ground. The other, a “barreras muertas” are barriers made of dead organic material, mostly wood and leaves, which also allows a greater amount of water to soak into the ground while also preventing soil erosion.

Both organic and permaculture farmers used compost as a natural fertilizer instead of chemical-based ones. Compost is very good at absorbing and storing water. All the permaculture farms we visited had a large, fully-functioning vermicompost which produced fertilizer that was naturally rich in nutrients and acid that was used as a substance for fumigation instead of synthetic based substances.

Perceptions of Organic Agriculture

Figure 3: Perceptions of Organic Agriculture



The above figure shows the responses of the farmers to the question “What does organic agriculture mean to you?”. The x-axis shows the concepts that were brought up in the responses and the y-axis represents the number of times these concepts were mentioned. For example, one farmer may have brought up how there are many benefits of soil and water conservation in organic farming but also that it was very costly. In this case, a point would be added to soil, water and costs. This information was useful to gauge the knowledge and perception of organic agriculture and gave us an idea on what

subjects should be addressed in the farming courses; biodiversity, water and soil conservation, benefits to human health, climate change and the cost of management and changing from conventional farming.

The farmers were split into three groups based on their farming methods. The majority of conventional farmers said that organic products are good for human health. Three said that it was important for the environment. 6 of the 7 conventional farmers perceived organic farming to be costly. Most farmers felt discouraged because they thought it would take too much time and labor to engage organic practices for decreased yields. The farmers mentioned they were more concerned with making a living and were not able to consider the environmental benefits.

Organic and permaculture farmers perceived more environmental benefits such as the importance of biodiversity, climate resilience, improved water and soil quality.

Perception of permaculture

Figure 4: Perceptions of Permaculture

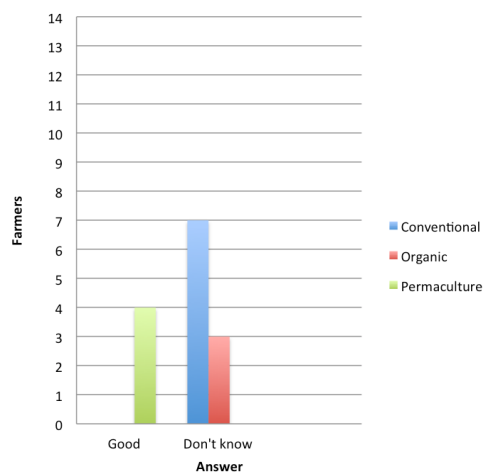


Figure 4 presents the perception of permaculture from conventional, organic and permaculture farmers when asked “How do you perceive permaculture?”. As shown, the concept of permaculture was not well understood, 10 of the 14 participants did not know the term. Only the farmers who practice

permaculture, were familiar with the concept. Some farmers did have a similar concept and perceived it as growing food in a way that resembles nature. They referred to these systems as “agricultura de la naturaleza”.

Willingness to learn more

Figure 5: Willingness to learn more

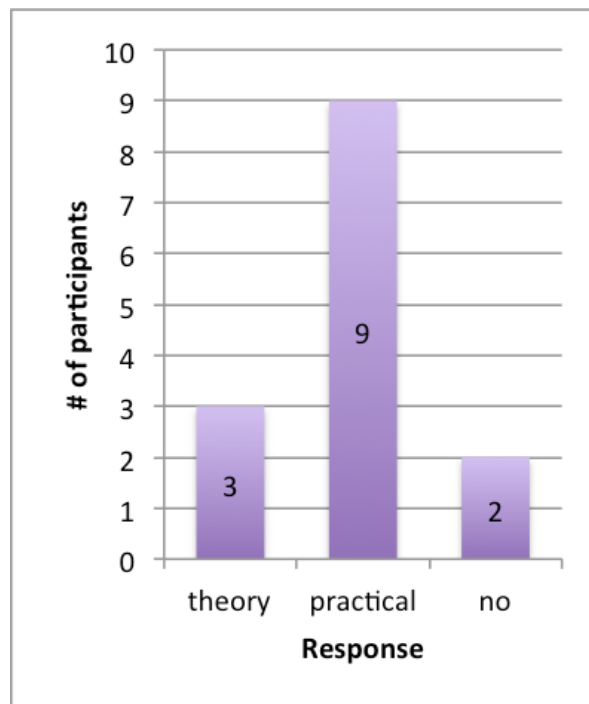


Figure 5 shows the response to the question “Would you be interested in learning more about organic agriculture and what would you like to learn?” Overall, the graph shows that yes, farmers would like to learn more. They were adamant about learning practical techniques. Some mentioned that the government offers some farming programs but that they were not sufficient to deal with their current challenges. They felt there was too much theory involved and not enough hands-on learning.

The most common request was learning specific techniques on how to better handle pests.

Second most common was learning about water conservation. Other requests included organic fertilizer, nurseries, seed collection, agro-forestry, chickens, preserving foods and native plant uses.

Limitations

- The language barrier was a significant limitation as it prevented detailed discussion into certain topics and led to misunderstanding and loss of details when writing down the answers to the interviews.
- The producers that were introduced by the Fundación had more knowledge and opinions regarding the permaculture and organic questions and since they know each other well, all had a similar concepts. This created a bias in our results and may not be representative of the permaculture farmers overall.
- Coming into the interviews with a pre-conceived ideas of the what the producers understood and what they didn't understand.
- Not a large sample size. There was not enough time to do more interviews to get a better idea of the needs and wants for the courses in permaculture and organic agriculture.

Conclusion

To summarize, based on our sample, the current methods and techniques by small producers in the District of Santa Fe is roughly 50% conventional methods, 21.4% organic methods, and 28.6% permaculture.

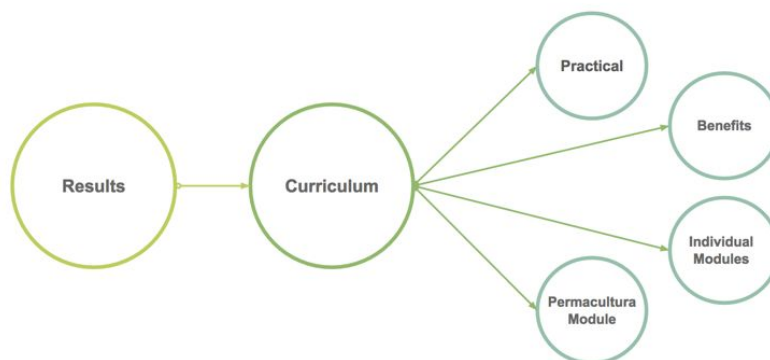
The biggest challenges farmers faced were related to pests and water issues. Conventional farmers responded to pests with an increase of pesticide use. Organic farmers responded mainly by changing their crop types and doing crop rotation. Permaculture farmers responded by integrated pest

management, mixed-planting and crop-rotation. They also made self-made sprays using local non synthetic substances. Conventional and organic farmers responded to water challenges by changing crop types. Permaculture farmers planted densely, used trees to provide shade, and built barriers and contours to slow down runoff.

Overall, 12 of 14 interviewees were interested in learning more about organic agriculture. We conclude that there is a high demand for courses that teach practical skills with a hands-on approach. The basic outline for a curriculum found in appendix 4 has been designed based on the results of our study.

Suggestions for Developing a Curriculum

Figure 6: Implications for Developing a Curriculum



The figure above shows how we have used the results from our research question in developing the curriculum outline. There are four main points of focus that we address.

Practical: Visiting the 4 permaculture farms showed us relevant information and demonstrated us specific techniques to put into the courses. These farms were affiliated with La Fundación Héctor

Gallego and could be used as field demonstrations for the specific techniques. These farms could be the visual representation of what is taught during the lessons in organic agriculture and permaculture. Having farms and farmers from Santa Fe as successful models of the practices could provide inspiration and evidence that organic agriculture and permaculture can be successful and is worthwhile.

Benefits: Many producers did not have the knowledge to change and felt discouraged due to high perceived labour costs and reduced produce compared to their current farming methods. The farmers said they were more concerned with making a living and were not able to consider the environmental benefits. Several mentioned that everything grows faster with chemicals. Overall organic farming and permaculture was considered as unrealistic or too big of a risk to change. This is probably the most important part for the education program because convincing farmers to change their ways and point of views is a challenge. These answers just further point out the importance of clearly demonstrating the economic benefits and climate change resiliency that organic agriculture and permaculture can bring to the small farmers in the district of Santa Fe. It's important to convince them that they can in fact make a greater income that will be more resilient into the future.

Individual models: Because of time constraints faced by farmers, the curriculum was broken down into individual modules which can be taken as separate courses each with their own lessons and need not be followed in order. This structure lets busy farmers choose specific courses to learn based on their most pressing needs. It also allows them to transition slowly.

Permaculture model: It's important that the courses are focused on teaching the concepts of permaculture because that is the focus of la Fundación. When asked about Permaculture only the

farmers who practiced it knew of the concept. Therefore, the first module explains the difference between organic farming and permaculture and teaches the philosophy of permaculture outlining its main principles.

Implications of the Organic Agriculture and permaculture School

The curriculum will provide the opportunity for the producers of the region to improve their education in a way that demonstrates hands-on techniques that are ecological and more sustainable. It gives a space where knowledge is accessible and shared. It could create an interactive community and administer the support of ecological farming practices.

With a decrease in conventional farming, the quality of their natural environment will increase as well. Permaculture practices advocate for reforestation, which in the long term, improves soil and water quantity and quality. This is especially important because the region of Santa Fe is part of the Santa María Watershed an essential freshwater resource for Panama. An increase in biodiversity will increase their product range, improving the farmers' ability to easily adapt to climate change and increase their economic resiliency.

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Appendices

Appendix 1: Interview Questions

1. What's your main produce?
2. What do you do with your products? Are they for selling or subsistence? To who do you sell them: Locally or Regional?
3. What are your biggest challenges?
4. Why do you think you have these problems? (for example: climate change, lack of help, services, infrastructure)
5. How have you adapted to these challenges?
6. What do you need to overcome these challenges?
7. How do you deal with pests and insects?
8. How do you deal with weeds?
9. Where do you get water from?
10. Do you use compost?
11. How do you fertilize your plants?
12. What does organic agriculture mean to you?
13. What does permaculture mean to you?
14. Are you interested in organic agriculture?
15. Are you interested in learning more about it? What specifically?

Appendix 2: Ethical certificates

