

**Food Security and Climate Change Policy: Interactions  
and Applications in Buglé Communities of Northern  
Veraguas and Comarca Ngöbe-Buglé**



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## Table of Contents

I.	Acronyms .....	4
II.	Introduction .....	5
	A. Context	
	1. Literature Review	
	2. Food Security and Climate Change	
	B. Alianza para la Conservación y el Desarrollo	
	C. The Project	
	1. ACD's Goal	
	2. Our Role and Final Product	
	3. The Locations	
III.	Methodology .....	10
	A. Key Terms	
	B. Data Collection	
	1. Literary Research	
	2. Interviews	
	a) Semi-Structured	
	b) Unstructured Interviews	
	3. Selecting Communities	
	4. Alto Bilingue Proper	
	a) Survey	
	b) Observations and Huerto Tour	
	5. El Guabal	
	a) Survey	
	b) Observations	
	C. Analysis of Data	
	1. Analyzing SENAPAN's 2017-2021 Plan	
	2. Interviews	
	3. Surveys	
	4. Observations	
	D. Code of Ethics of McGill University	
IV.	Results .....	20
	A. Policy	
	1. Summary and Analysis of SENAPAN's 2017-2021 Plan	
	B. Interviews	
	1. Summary and Analysis	
	C. Alto Bilingue Proper	
	1. Surveys	
	2. Observations	
	D. El Guabal	
	1. Surveys	



	2. Observations	
	E. Comparing the Communities	
	F. Limitations	
V.	Conclusions . . . . .	.44
	A. Summarize Findings	
	B. Significance	
	C. Implications	
	1. Locally	
	a) ACD	
	b) Panama	
	2. The Big Picture	
VI.	References . . . . .	.48
VII.	Appendix . . . . .	.49
	A. Ethics Certification	
	B. Semi-Structured Interview	
	C. Survey	
	D. Graphs	
	E. Photos	



## **I. Acronyms**

ACD: Alianza para la Conservación y el Desarrollo

NGO: Non-Governmental Organization

SENAPAN: National Secretariat for Food and Nutritional Security (Secretaría Nacional para el Plan de Seguridad Alimentaria y Nutricional)

Miambiente: Ministry of Environment (Ministerio de Ambiente)

MIDA: Ministry of Agricultural Development (Ministerio de Desarrollo Agropecuario)

IDIAP: Institute of Agricultural Research (Instituto de Investigación Agropecuaria)

CELAC: Community of Latin American and Caribbean States

FAO: Food and Agriculture Organization of the United Nations

ALADI: Latin American Integration Association



## **II. Introduction**

### **A. Context**

#### *1. Literature Review*

With the recent signing and ratification of the Paris Agreement in 2016, the government of Panama recognized the urgency of responding to the impacts caused by climate change. Notably, the Paris Agreement considers climate change's effect on food security, underlining "the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change".<sup>1</sup> Considering Panama's indigenous populations' rights, as well as the country's history of legal agreements with indigenous communities, such as the *Organic Charter of the Ngäbe-Buglé* (1999), it is important for governmental institutions to consider the rights and interests of indigenous groups when looking to implement national policies aimed at the adaptation and mitigation to climate change, as well as food security policy.<sup>2</sup> Such interests include the maintenance of indigenous food sovereignty, as well as their adaptation to issues of climate change in their cultural and traditional food production practices.

Previous research on food security and food sovereignty in Panama, specifically on indigenous communities, has been conducted by Maisie Ganz and Helena Saracho Dominguez. The focus of Maisie Ganz's research is on addressing broad issues in politics, culture, and society as they pertain to the traditional agroecosystems of the Naso through the evaluation of their management of biodiversity.<sup>3</sup> This paper will be used to help us determine

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<sup>1</sup>United Nations. *Paris Agreement*, (No. 54113). Paris, France: United Nations, 12 December, 2015.

<sup>2</sup>International Work Group for Indigenous Affairs, "Indigenous Peoples of Panama," International Work Group for Indigenous Affairs, accessed January 30, 2017, <http://www.iwgia.org/regions/latin-america/panama>.

<sup>3</sup>Maisie Ganz, "Agroecology of the Naso-Teribe: The Management and Conservation of Traditional Agroecological Systems," *Independent Study Project (ISP) Collection 434* (2005): [http://digitalcollections.sit.edu/isp\\_collection/434](http://digitalcollections.sit.edu/isp_collection/434)



our methods for appreciating the biodiversity of Buglé Comarcas, which will allow us to determine how cultural and traditional practices relate to national food security policy and climate change policy.

Helena Saracho's research focuses on the alimentary situation of the Ngöbe people through detailed food profiles, sustaining the hypothesis that the food production pattern which has allowed the survival of the Ngöbe throughout history and the products derived from its praxis are crucial in self-sustaining food production. As such, the maintenance of traditional practices surrounding food security can be considered an appropriate alternative in the face of the introduction of industrial foods. Implied in this hypothesis is the evaluation of the impact of current environmental and food security policy on food sovereignty.<sup>4</sup>

Research on food security in Panama, particularly in Buglé communities, is of prime importance. It was declared, upon the announcement of the new Food Security Plan 2017-2021 (*Plan Nacional de Seguridad Alimentaria 2017-2021*), that over half of the people in Panama who suffer from malnutrition live in indigenous Comarcas, in the Bocas del Toro province, or in Darien.<sup>5</sup> Furthermore, despite previous research with other indigenous communities such as the Naso and the Ngöbe, there is no literature on food security tailored specifically on Buglé communities and their challenges in maintaining food sovereignty.

## 2. *Why Food Security and Climate Change*

a) Climate Change At this point, the academic community is well aware of and accepts that the climate is changing around the world. But why is this important for Panama? "The direct effects of climate change will vary by region, but will be particularly severe in the

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<sup>4</sup> Helena Saracho, "Alimentación Tradicional Ngöbe y Soberanía Alimentaria Frente a la Imposición de Hábitos Exógenos," *Universitat de Lleida*, (2011).

<sup>5</sup> José Arcia, "Panamá invertirá \$200 millones contra el hambre," *La Estrella de Panama*, last modified March 29, 2017, <http://laestrella.com.pa/panama/nacional/panama-invertira-200-millones-contra-hambre/23993140>



tropics.”<sup>6</sup> Panama is well within the boundaries of the tropics, meaning that the impacts of climate change could hit very hard, and the impacts do not bode well for the country’s future. “Climate change-by redrawing the maps of water availability, food security, disease prevalence and coastal boundaries-will reduce the available food and water, increase migration, raise tensions and trigger new conflicts.”<sup>7</sup>

**b) Food Security** If we continue on this assumption that climate change will indeed have an impact on people’s access to food, then where should we start to look in order to attempt and strengthen food security? “Between 60 and 70 percent of the world's poor currently reside in rural areas and directly or indirectly derive a significant share of their income from agriculture.”<sup>8</sup> But it is not only income that is driven by this agriculture. In the indigenous areas of Panama, subsistence agriculture is an extremely common practice. “The poor are especially vulnerable . . . they have such meager resources to fall back on.”<sup>9</sup> What will happen when the poor, who “spend 50 to 80 percent of their income just to get enough food to survive,”<sup>10</sup> can no longer rely on their own crops to sustain themselves because of climate change? This is why the development of policy and programs on climate change and food security are so important, and why they need to especially take into account the interests and realities of rural indigenous communities.

## **B. Description of Host Organization and Interests**

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<sup>6</sup> Louise Cord, Catherine Hull, et al. “Climate Change and Poverty: An Integrated Strategy for Adaptation,” *The World Bank: PREMnotes Special Series on the Economics of Climate Change*, no. 3 (2008), [http://www1.worldbank.org/prem/premnotes/note3\\_climate\\_change\\_and\\_poverty.pdf](http://www1.worldbank.org/prem/premnotes/note3_climate_change_and_poverty.pdf)

<sup>7</sup> Oli Brown, “Campaign Rhetoric or Bleak Reality? Just How Serious a Security Challenge is Climate Change for Africa?,” *Climate Change Resources Migration: Securing Africa in an Uncertain Climate*, (2010): 38-47

<sup>8</sup> Louise Cord, Catherine Hull, et al. “Climate Change and Poverty: An Integrated Strategy for Adaptation,” *The World Bank: PREMnotes Special Series on the Economics of Climate Change*, no. 3 (2008), [http://www1.worldbank.org/prem/premnotes/note3\\_climate\\_change\\_and\\_poverty.pdf](http://www1.worldbank.org/prem/premnotes/note3_climate_change_and_poverty.pdf)

<sup>9</sup> Lael Brainard, Abigail Jones, and Nigel Purvis, eds, “Climate Change and Global Poverty: A Billion Lives in the Balance?,” *Brookings Institution Press*, Chapter 1 (2009): pg 13, <http://www.jstor.org/stable/10.7864/j.ctt6wpgcq>

<sup>10</sup> *ibid.*



Our host organization is the Alianza para la Conservación y el Desarrollo (ACD) Panama and is directed by Osvaldo Jordan (Bachelor of Science in Biology from California State University; Master's and Ph.D., Political Science and Latin American Studies from the University of Florida).

ACD's mission is to “promote conservation and alternative development through the defense and empowerment of Panamanian society in order to make it more just and environmentally responsible.”<sup>11</sup>

To reach its goals, ACD operates and develops scientific and preliminary research and generates models of alternative development which are favourable to the protection of the environment. Through research, ACD seeks to better understand and promote the interests of indigenous communities and households who rely on small-scale agriculture (campesinos).

## **C. The Project**

### *1. Overall Goal*

ACD has an ultimate goal for this project. The research that we have done, along with the research that will continue to be conducted, will all be used by ACD to inform and substantiate a dialogue with governmental entities to allow for more consideration of indigenous people's interests in the formulation of improved food security policy. In order to produce a product that is complete in both information and evidence to back it up, very detailed and representative data needs to be collected.

### *2. Our Role*

Our role within the context of this project was limited to four weeks of work, so our contribution to the overall goal was determined to be preliminary research that would

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<sup>11</sup> ACD Panama, "Quienes Somos," accessed April 25, 2017, <https://acdpanama.wordpress.com/category/quienes-somos/>



conclude with a final product, being a policy analysis which describes the main challenges facing the new *Plan Nacional de Seguridad Alimentaria y Nutricional 2017-2021* in terms of climate change adaptation and food sovereignty of Buglé communities.

### 3. *The Location*

Alto Bilingüe Proper is a community situated in the corregimiento of Valle Bonito, district of Santa Catalina, Comarca Ngöbe-Buglé. According to the 2010 national census, Alto Bilingüe Proper had a population of 178.<sup>12</sup> Alto Bilingüe Proper is accessible, depending on weather, only by foot via a dirt trail, and is approximately two to three hours away from paved road located in El Guabal.

El Guabal is a community situated in the corregimiento Rio Luis, district of Santa Fe, Veraguas. According to the 2010 national census, El Guabal had a population of 144.<sup>13</sup> El Guabal is accessible by paved road approximately 45 minutes away from Santa Fe, Veraguas.

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<sup>12</sup> Instituto Nacional de Estadística y Censo, “Volumen I: Lugares poblados de la República:2010,” accessed April 25, 2017, [https://www.contraloria.gob.pa/inec/Publicaciones/Publicaciones.aspx?ID\\_SUBCATEGORIA=59&ID\\_PUBLICACION=355&ID\\_IDIOMA=1&ID\\_CATEGORIA=13](https://www.contraloria.gob.pa/inec/Publicaciones/Publicaciones.aspx?ID_SUBCATEGORIA=59&ID_PUBLICACION=355&ID_IDIOMA=1&ID_CATEGORIA=13)

<sup>13</sup> Ibid.



## **III. Methodology**

### **A. Key Terms**

In our research, we used a few key terms and ideas for guidance. As with many concepts in development, these terms can have different variations of definitions. These are the key terms we identified, along with the variation of the definition that we chose to be our standard.

#### *1. Food Security*

The United Nations' Committee on World Food Security defines the term 'Food Security' as "the condition in which all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."<sup>14</sup> Additionally, the 1974 World Food Conference concluded that "every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties."<sup>15</sup>

#### *2. Food Sovereignty*

"Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers."<sup>16</sup>

#### *3. The Organic Charter of the Comarca Ngöbe-Buglé*

The *Carta Organica de la Comarca Ngöbe-Buglé* is also very relevant to our research. This charter recognizes the right of indigenous people to autonomy and it is what

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<sup>14</sup> International Food Policy Research Institute. "Food Security." IFPRI: International Food Policy Research Institute.

<sup>15</sup> World Food Summit. "13 - 17 November 1996 Rome Italy." World Food Summit.

<sup>16</sup> Nyéléni. "Declaration of Nyéléni." Nyéléni. Last modified March 27, 2007.



legally created the Comarca Ngöbe-Buglé<sup>17</sup>. Therefore, we must highlight that any legislation on food security that impacts the Comarca should take into account food sovereignty, as it is included in their right to autonomy.

## **B. Data Collection**

### *1. Literary Research*

Prior to commencing any data collection on the field, we needed to ensure that we had sufficient background knowledge on the subjects relevant to this project. We started by conducting research on key terms and previous literary works on the topics of Food Security, Climate Change, the Buglé people and culture, and any studies conducted in our region of focus. This research was mainly done online using the Smithsonian Institute *OneSearch* system. Additionally, we utilized the McGill University *WorldCat* system to search for scholarly articles and journals that could provide us with academically appropriate information.

### *2. Policy Research*

With the goal of building a better understanding of food security and environmental policy in Panama, we conducted search engine-based research and recommendation-based research of food security policy and climate change policy in Panama. Important documents include SENAPAN's *Plan Nacional de Seguridad Alimentaria y Nutricional 2017-2021*, *Plan Nacional de Seguridad Alimentaria y Nutricional 2009-2015*, the *Plataforma de Seguridad Alimentaria y Nutricional* developed by CELAC in collaboration with FAO and ALADI, as well as the following documents developed and distributed by the Ministry of

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<sup>17</sup>Republica de Panama Asamblea Legislativa, "Por el cual se Adopta la Carta Orgánica Administrativa de la Comarca Ngobe-Bugle," *Ministerio de Gobierno y Justicia*, numero 194 (1999).  
<http://www.iadb.org/Research/legislacionindigena/leyn/docs/Pan-Pan-DecretoEje-194-99-CartaOrgan-Ngobe-Bugle1081.pdf>



Environment (Miambiente): *El Cambio Climatico, Estrategia Nacional de Cambio Climatico en Panama*, and *Marco Técnico de la Estrategia Nacional REDD+ de Panamá*.

### 3. Interviews for Policy Synthesis

a) Semi-Structured Interviews This method was conducted with key government representatives of offices relevant to food security policy in Panama:

Lorena Vanegas, Office of Climate Change at Miambiente

Javier Enrique Gonzalez Peñaloza, Miambiente's Santa Fe Office

Franklin Corro, Director of SENAPAN

Eulito Peralta, Agricultural technician (tecnico agropecuario), MIDA's Santa Fe Office

José Alberto Yau, Researcher at IDIAP

Additionally, the following government and non-government officials were contacted for interviews, but did not answer the call:

Dr. Yuri Huerta Vasquez, General Administrator of the Autoridad Panameña de Seguridad de Alimentos (AUPSA)

Roberto E. Mancilla C., Comité Nacional de Semillas, MIDA

Juan Manuel Rios Peralta, Unidad Ambiental, MIDA

Moises Batista, National Director of Agriculture, MIDA

Orlando Torres, Director of Rural Development, MIDA

Luis Pinto, Local technical adviser, FAO

These interviews allowed us to gain an understanding of potential differences between the policies being put in place and what is actually being done on the ground, as well as the traditional and cultural background of food production in the area of study.



As an example, the questions of the semi-structured interview with Lorena Vanegas can be seen in the Appendix B.

b) Unstructured Interviews and Field Observation Given that no previous research has been done on food security specifically in Buglé-inhabited areas, ACD emphasized that any field observation related to food security and sovereignty in the area was valuable indicative data for future research endeavours. These observations include snippets of conversations with locals and unstructured interviews, visual information and trends and patterns noticed throughout our stay in the field. This method allows to discuss what is important and pertinent to the community by allowing a completely open dialogue with community members. This method provides access to what Buglé-inhabited communities believe to be the most important beliefs and desires without the potential for external guidance of information. This includes unexpected interactions that may guide our research into ideas that had not been considered before. We fully recognize, however, that these observations are preliminary and bear little significance unless further studied.

### *3. Picking Communities*

ACD specified that they wanted our end of the research to focus on the region of northern Panama where the provinces of Veraguas and the Comarca Ngöbe-Buglé meet. Specifically, they wanted us to work in Buglé populated communities that were on the border of the two provinces or just inside the Comarca.

The first community we visited was selected by Candido Carpintero, an ACD employee who is a resident of the area. He brought us to Alto Bilingüe Proper because he has relatives there and knew of a family with whom we could stay.



The second community was chosen by us. El Guabal was selected because it provides a very good contrast to Alto Bilingüe Proper in terms of amount of outside influence and development as a result of having direct access to a road.

a) Consent of the Communities We have already discussed how we selected the communities of Alto Bilingüe Proper and El Guabal. However, part of conducting research in any situation is ensuring that those impacted by the research consent to it. Therefore, in our first visit to each of the communities, we spent time seeking out the appropriate authorities to explain the project and ask if they consented to us conducting our research there.

#### *4. Alto Bilingüe Proper*

When we arrived for the first time to Alto Bilingüe Proper, we immediately went with our guide to find the corregidor, Hilario Concepcion. He invited us to the communal meeting house and we explained to him the scope of our research as well as the potential impacts of our study on the community. Once we had finished explaining the project, he asked us some questions and then gave us permission to conduct our research in the community.

Once we received permission to proceed, we began with a small group gathering that was organized by the corregidor where we repeated what we had told him to the community so that they could understand what we were doing and ask us questions. We used this opportunity to take note on the types of questions and comments they had for us, as well as asked them some questions to try to start a discussion. However, due to the complexity of the program schedule, we had to leave that afternoon, thus ending our first visit to Alto Bilingüe Proper.

When we went for the second time, we brought surveys [Appendix C] with us in order to attempt to collect more information. We chose surveys because we noticed from our first visit that people were reluctant to talk at length with us about any of the questions we had for



them in an unstructured interview format. The survey we created had much simpler questions, and the answers given could be compiled and analyzed in a way that provided us with the type of data we were looking for. The purpose of the survey was to attempt to create a representative food profile as well as understand what the people produce, consume, and purchase. Additionally, the questions were also intended to allow us to comprehend if there was a situation of food insecurity in the communities.

At three different times of the day, we split up into two groups and visited each of the forty houses in the community to complete the survey. We decided to do this at three different times of the day to account for the fact that some household members would leave to go to other communities or to go to the finca to work. By going at three different times, we could be sure to visit houses when there would most likely be families at home.

Additionally, we chose to go to each house for two reasons. The first reason was that the way in which the houses were organized made it very difficult to use any sort of pattern such as 'every other house' or 'every third house'. The second reason was because we realized that there were houses that were empty because the family was away working in the fincas, or the people in the house did not want to participate. The main reason for households not wanting to participate was that, if the male head of the house was not there, the female head of the house sometimes did not feel comfortable talking to us without the male present.

We split up into two groups and we made sure that we covered all of the houses while not double visiting any. When we reached a house, we would ask permission to walk on the property, and then introduce ourselves, our guides, and explain the project and the survey. We would then ask if they wished to participate in the survey. If they expressed interest, we would read the questions off and write down the answers as they were given, noting which questions the respondent did not want to answer.



The other form of data collection that we conducted in Alto Bilingüe Proper was a local tour of the types of products being grown and produced for consumption or medical purposes. Our host in the community, Cristina, along with Candido, walked with us around the entire community and pointed out each of the types of products that the people grow for consumption. As we walked, we would note the name of each of the plants or products that Cristina would point to, and then we would take a picture. Each photo along with the name of the product can be found in Appendix E.

### *5. El Guabal*

Upon arriving to El Guabal for our first official visit, we were not completely sure to whom we needed to speak to get permission to begin our research. We decided to go to the cooperativa and ask one of the people who worked there. They gave us the name of one of the members of the Junta Local, Marino Vasquez, and told us where to find him. Just like in Alto Bilingüe Proper, we explained who we were, the purpose and goal of the project, and what we wanted to do in the community in terms of data collection. He gave us permission to begin our data collection in the community.

After receiving permission to begin our research in El Guabal, we decided to try and count the number of houses in the community. However, because of the layout of the community, we were not able to do so. Instead we counted how many houses were visible from the two main paths of the community. Based on the number of houses we could get to, we decided to walk to the farthest end of the community and walk back towards the beginning, stopping at every other house. At each house we stopped at, we would introduce ourselves, explain the project, then ask if they would be interested in answering some questions. If they were interested, we would proceed to ask questions in the form of a semi-structured interview.



We also had the help of a Peace Corps member that we met there who was working to help coffee growers in the area commercialize their crops. We spent some time talking with him in an informal manner about what he has learned about the community and the situation there in relation to our project. This concluded our first visit to El Guabal

Similar to the issue we encountered in Alto Bilingüe Proper, we did not get the level of results that we had wanted. When we went back to El Guabal for the second time, we brought the surveys with us and proceeded to use those as the preferred method of data collection. We decided to again walk to the far end of the community and make our way back visiting every other house, but this time the houses were the ones we did not visit the first time. This was because we did not want to bother the same households again to ask about similar topics.

When we arrived at a house, we would ask permission to enter the property. If there was no one home we would note it and proceed to the next house in the manner of our pattern of every other house. If someone was home, we would introduce ourselves and the project, explain what the survey was for, and ask if they would like to participate. If they agreed, we would read off the questions from the survey and write down the answers as they were given. Additionally, we would make visual observations and observations of tone or of what questions received more elaborate responses.

## **C. Data Analysis**

### *1. Policy*

The *Plan Nacional de Seguridad Alimentaria y Nutricional 2017-2021* will be summarized through these different sections: Its origins, its legal and institutional framework, the main challenges it identifies, and its main goals and yearly courses of action. This summary,



although general to the macro-level of national policy, will pay special attention to the Plan's reference to the Comarca Ngöbe-Buglé, climate change adaptation, and food sovereignty. It must be specified that the data, figures and statistics provided in this summary are found and used by the Plan itself, making it the only source cited for this section.

### *2. Interviews with government officials*

Given that most of the data derived from interviews is qualitative, data analysis will be conveyed through an interview synthesis for each interview. Given that interview transcripts were not produced due to time constraints, instead the most salient points of discussion will be mentioned, particularly pertaining to food security, food sovereignty in the region, and climate change adaptation.

### *3. Surveys*

The data collected from the surveys conducted in both communities were compiled and entered into Microsoft Excel spreadsheets. Two separate Excel documents were created: one for the responses from Alto Bilingüe Proper, the other for the responses from El Guabal. The method of data entry depended on the type of question. For questions 1a), 1b), 1d), 3), 4), 5), 6), 8a), 8b), 10a), 10b), 12a), and 13a), the data that was inputted into the Excel sheets was then used to generate graphs which can be seen in Appendix D.

This was done for the the surveys of both communities. However, the results of the surveys in El Guabal have not been included in this report, as they did not provide us with any relevant information. Additionally, the data from Alto Bilingüe Proper is not representative of the population there as a consequence of the poor response rate. However, they can be used to give initial insight into the community and pose questions that can be answered with further research.

### *4. Observations*



Part of our data collection included making observations at every step of our research. These observations were things that we saw and heard that we felt were relevant to our research. We each wrote down observations in journals and organized the notes by date and location. At the end of the data collection period, we went through all of the observations that each of us had made, and together, along with ACD's Osvaldo Jordan's guidance decided what observations were the most interesting and relevant to our research with the final goal of analyzing national food security policy.

#### **D. McGill University Code of Ethics**

All research conducted through McGill University must comply with the McGill *Code of Ethics*. While all types of research must be carried out in an appropriate and professional manner, it is vital for research with social elements to strictly adhere to such a code. This is not only to protect the reputation of McGill as a research university, but also, and even more importantly, to ensure that the rights and preferences of those affected by the research be held in the highest priority.

Prior to the commencement of this research project, we received a special educational course from The Panel on Research Ethics. Following the course, we took a test to show that we understood the importance of ensuring ethical conduct as well as the implications if we failed to do so. Upon passing this test, we each received a certificate as proof that we had completed the training. Both of our certificates can be found in Appendix A.



## **IV. Results**

### **A. Policy**

#### *1. Summary of SENAPAN's 2017-2021 Plan<sup>18</sup>*

(The following information was strictly taken from the Plan)

SENAPAN's *Plan Nacional de Seguridad Alimentaria y Nutricional 2017-2021* begins by contextualizing food security in Panama, stating that in the last 15 years, malnutrition in Panama has gone from affecting 27.6% of the population to 9.5%, around 400 000 people. It carries on by acknowledging that these numbers are concentrated mainly in rural areas, affecting particularly households dependent on family-based agriculture.

The Plan is justified and supported through both national legal and institutional frameworks and the international agreements upon which emerges the obligation to ensure the eradication of malnutrition in Panama. Constitutionally, food security is first approached by the 56th article, which guarantees to minors, elders, and the destitute the right to alimentation, and then by the 110th article, which underlines the obligation to ensure an optimal nutritional state for all of the country's population by promoting availability, access, consumption, and biological enjoyment of adequate foods. Then, by international agreements and conventions, such as the 22nd, 23rd and 25th articles of the Universal Declaration of Human Rights, and the 2nd article of the International Covenant on Economic, Social and Cultural Rights (PIDESC by its Spanish initials), which ensure food security as a basic human right, the Plan stresses the national responsibility to be accountable over the insurance of this right through at least thirty public administration organizations. Responsibility to

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<sup>18</sup> Ministerio de Desarrollo Social (MIDES), *Plan Nacional de Seguridad Alimentaria y Nutricional De Panamá 2017-2021*, accessed April 25, 2017.

<http://www.mides.gob.pa/wp-content/uploads/2017/03/Plan-SAN-Panam%C3%A1-2017.pdf>



ensure food security is not only legal, but also institutional. The Plan states that the main responsibility of ensuring food security goals, cemented through the ratification of the *Plan para la Seguridad Alimentaria, Nutrición y Erradicación del Hambre de la CELAC 2025* and the *Objetivos de Desarrollo Sostenible* (Sustainable Development Goals), lies within the MIDES and SENAPAN.

SENAPAN's predecessor until 2004 was PRONAN, the *Programa Nacional de Alimentación y Nutrición*. SENAPAN then came about as a coordinating tool among governmental and non-governmental entities for the implementation of food security initiatives in the country. In 2012, SENAPAN is incorporated to MIDES, and has been ever since managed to the discretion of said ministry. In 2014, a report which evaluated the progress of SENAPAN's 2009-2015 plan recognized that since the beginning of the plan, poverty levels in small-scale farming and indigenous households had accentuated namely due to a lack of stimulus for food production and the absence of a territorial focus in food security policy. As such, the report recommended to develop a better articulation of the institutional framework surrounding the Plan and an improved focus on the heterogeneity of territory in the application of policy.

The Plan identified four main challenges to the current nutritional status of the country, and laid out different objectives and courses of action for each of these challenges

First, the promotion of nutritional well-being is a challenge in itself, as is shown by different indicators, the first being the prevalence of lower height for a child's age, which is particularly problematic in indigenous areas, where 31.3% of children under five years of age in the Ngöbe-Buglé Comarca are of low height for their age according to the indicator, compared to the national average of 17.7% in 2014. Micronutrient deficiency is another important obstacle to the promotion of nutritional well-being, as shown by the prevalence of



anemia in both toddlers aged six to fifty-nine months and pregnant women, with percentages of 33.8 and 23.2 respectively in 2014. Additionally, in 1999, the prevalence of vitamin A deficiency in toddlers aged six to fifty-nine months was classified as severe, with a prevalence of 23.6%. Excess weight and obesity are identified as another problem, as it presents increasing concern in indigenous and rural areas, with the rates of excess weight being the highest in indigenous areas compared to urban and rural areas for children younger than five and of school age (2008). 13.4% of children younger than five in the Ngöbe-Buglé comarca were considered overweight, compared to 8.5% in urban areas. Finally, the last obstacle identified was that of non-transmissible chronic diseases related to nutrition, as non-transmissible chronic diseases are the leading cause of death in the country and represent an important cost to the country.

To this challenge, the objective the Plan formulates is to reduce by five percentage points low height for age, micronutrient deficiency (iron and vitamin A), and obesity and excess weight in the country. Actions would include the strengthening of school food programs (Programas de Alimentación Escolar) to ensure nutrition at a young age. This program could be paired with strategies to provide these programs with local food supply.

The Plan will also rely on improving nutritional education within the population at large by informing the general public of healthy eating practices and recommended food groups. The plan's yearly proposed actions include the NutriVidas program, which approaches nutrition based on community, the strengthening of the IDIAP Agronutre program which entails the biofortification of certain foods, the expansion of the Nutre Hogar program into the Ngöbe-Buglé comarca, and programs of entrepreneurial social responsibility (Responsabilidad Social Empresarial).



The second challenge the Plan highlights is ensuring a national, sustainable food supply for Panama's population. It highlights the importance of the national agricultural sector, as 14% of the economically active population of the country work in it. Another issue the Plan raises is the increasing dependence on food imports, stating that national agricultural production is an important factor to food sovereignty. As such, the Plan focuses on indices of dependency on imports and the evolution of national agricultural productivity, noting an increased dependency on imports of rice, sugar, coffee, meat, potatoes, and vegetables such as onions or tomatoes. This increased dependency, the Plan states, is partly due to increased demand of these goods, coupled to the limited increase of national food production. Under this lens of national production, the Plan defines national producers as either practising subsistence farmers, intensive traditional farmers, and "agro-exporters". The subsistence farming category is further divided into three categories based on livelihood, the first being households which produce for self-consumption, but do not manage to cover all of their needs and have to work temporarily in other productive units. The Plan gives special emphasis to this grouping, stressing a need by the MIDA to promote, support, and assist these households. It is stated that in 2011, 20,807 of total agricultural producers in the Ngöbe-Buglé comarca, more than half (13,111) completely depended on their own production for subsistence. In contrast, this was the case for 3,428 out of 36,642 producers in Veraguas.

As a final obstacle to the insurance of a sustainable supply of food is the factors that affect productivity and competitiveness of Panamanian food production. For instance, the Plan states that the "atomized" structure of food producers presents problems in production volume, which inhibits said producer to reach economies of scale. Another factor identified is that production is highly seasonal by its dependence on rain cycles. Additionally, land tenure



is identified as an obstacle, as unclear or nonexistent titling in some areas of land prevents from engaging in financial transactions over land.

The goal associated with the challenge of food supply is to improve the agricultural sector's contribution to food security through a focus on rural territorial development and the integration of the agricultural with other sectors of the economy. The Plan states that agricultural production presents itself as the fastest and most effective option to ensure the nutritional situation of around 900,000 people who rely on food production as their livelihood. It is highlighted that areas with adequate infrastructure for transportation and communication are associated with a higher number of producers whose livelihood completely depends on food production and lower incidence of extreme poverty. As such, the Plan calls to develop a national plan aimed to improve productivity in the agricultural sector with different goals based on typology and the prevalence of poverty, as well as an increase in infrastructure investment for food provision. More detailed yearly actions include the increase in number of programs which provide technical assistance and training for food production, the design of a plan for agricultural production specifically in the comarcas, the expansion of Miambiente's project for sustainable community development (Proyecto de desarrollo comunitario sostenible) and the implementation of the National Climate Change Plan (Plan Nacional de Cambio Climático) for the agricultural sector.

The third challenge, now that supply at a national level has been approached, is guaranteeing access to foods at a local level. Access is mainly approached through a household's income, which is why the Plan identifies the incidence of poverty and extreme poverty as an important obstacle to the access of food. The *Encuesta de Mercado Laboral* from 2014 divides the national population into deciles, three of which fall under the urban absolute poverty line of 140.52 Balboas per person per month. Around 400,000 people were



identified as living under the line of extreme poverty, 134,321 of which live in the Ngöbe-Buglé comarca, representing an incidence of extreme poverty of 67.8% in the comarca. In contrast, the incidence of extreme poverty in Veraguas is of 17.9%. Further, employment is considered by the Plan as a principal way to guarantee access to food.

The goal corresponding to this challenge, according to the Plan, would be to reduce the national malnutrition index to lower than 5%. This goal is in large part approached through both financial aid and guaranteeing adequate employment conditions. More precisely, in comarca regions, financial aid would be based on transfers for nutritional deficit (Transferencias para deficit alimentario). Yearly actions would include social protection and productive inclusion programs.

As a fourth challenge, particularly marginalized groups of people are identified as needing special attention to the insurance of food security goals. The Plan states that the recent high levels of GDP growth indicate that Panama is not a poor country, but that there are noticeable differences in the participation of the different segments of the population to the development of the country. As such, the Plan highlights the need to adopt measures which train and capacitate farmers to increase productivity, such as increasing access and quality to education to basic and technical education. The Plan aims to increase productivity specifically in vulnerable regions, such as rural areas and indigenous communities.

For this challenge which particularly aims comarca areas, as well as the provinces of Darien and Bocas del Toro, the objective is to reduce extreme poverty in indigenous comarcas to less than 40%, and closing the gap by one third with the rest of the country in terms of malnutrition and the provision of basic services. The two main ways identified to reach this goal is through monetary transfers to cover nutritional deficit, as well as increased



investment in the development of infrastructure identified as ‘pathways to production’, as well as water sanitation infrastructure.

Job creation is also described as an indispensable complement to these investments and to the financial aid provided. It is calculated that a 200 million Balboas investment is needed on infrastructure in the comarcas, Bocas del Toro and Darien. Yearly actions in these areas would include the design of a plan for technical labour training, activities for sensibilisation on food security, the push for an organic farming project in indigenous areas, the construction of production roads in comarcas, and promoting the incorporation of new food items in production.

## **B. Interviews**

### *1. Interviews at National level*

We talked with Franklin Corro, the Director of SENAPAN, before the new Plan was accessible to the public, but he still underlined the major differences with the 2009-2015 Plan. The main difference, he highlighted, is that the previous plan did not have any clear objectives with a defined timeline for the accomplishment of its goals. Corro explains that this new plan seeks to align CELAC’s goals on food security with the needs of the country. He mentioned that the four guidelines for the Plan were the availability, access, safety and nutritional value of foods to ensure food security in the country, with a special focus on vulnerable areas specifically subject to poverty. When asked about the public consultation process to the creation of the plan, he stated that there had been a direct process of consultation with comarcal authorities of the Ngöbe-Buglé and the Kuna. An important point Franklin Corro mentioned about the Plan is that SENAPAN is not an executive entity, but rather a coordinating one, and that as such, the Plan and its stakeholders included a great



number of governmental and non-governmental bodies which are supposed to carry out the actions underlined by the Plan under SENAPAN's supervision. As such, Corro as the director of SENAPAN is in charge of coordinating the Plan among these different entities to avoid duplicity of actions, both among different national government entities, but also going from a macro to a micro level.

The program for productive inclusion (Programa de Inclusion Productiva) aims to guide individuals living in poverty towards a condition where they are no longer reliant on government aid through education and training on the development of micro-enterprises to strengthen local markets within communities. An example of such training includes community workshops on the production of organic fertilizer through a Japanese method called "Bokashi", where the sun heats organic waste until decomposition. This method started being taught in 2009. Other actions being taught in the field is the establishment of tanks for fish farming, collective and commercial rice and maize cultivation whereby the benefits are divided among participants, and fairs organized by the Instituto de Mercado Agropecuario.

When asked about SENAPAN's Bonos, which provide 150 balboas every three months to families, Corro explained that there are four conditions to having access to the Bonos Alimentarios. First, the beneficiary must undergo regular health check-ups. Second, this individual must show that they own a "huerto", and that as such, they practice family-based agriculture. Third, if the individual has children, they must show that their children is attending school. Fourth, again if the beneficiary has children, they must have their children undergo regular health check-ups. Corro then explained the advantage of the Bonos: it entails a cheque with double signature: one for the beneficiary, and one for the market owner who receives the Bonos. This allows for the survival of small marketplaces which provide basic in isolated areas. In fact, these SENAPAN-approved markets must offer



at least twenty-four different foods, thus encouraging the markets to buy produce from the beneficiaries themselves, thus creating a cycle of benefits both for those receiving aid and the market owners participating in the program. This incentive to create a circle of trade goes in line with the Plan's goal to introduce individuals vulnerable to food insecurity into the labour market. As Corro states, he is "convinced that we do not have to be a paying entity", referring to the provision of Bonos, but rather just one that coordinates different actors which encourage the creation of markets around food production which combat food insecurity. Corro mentioned that poverty, particularly through the lens of food security, is not caused due to the lack of development but rather the lack of roads.

When asked about the relationship between SENAPAN and environment-focused government entities such as Miambiente, Corro explained that while there are no common projects between the two, Miambiente still provided feedback during the formulation of the Plan San 2017-2021 as one of its contributors. However, he clarified that the reason why SENAPAN does not have joint projects with certain bodies is due to the fact that it is only a coordinating entity, and as such it does not have the power to guide these bodies, only to ensure their compliance to the Plan.

Lorena Vanegas of the Climate Change Office at Miambiente explained that Miambiente's current strategy for climate change lies within four pillars. The first is compliance to the international program REDD+, acronym for Reducing emissions from deforestation and forest degradation. From this plan emerges the national program of Alianza por el millon, a private-public partnership aimed at reforesting one million hectares in the next twenty years, complemented by pilot agroforestry projects which seek to reduce unsustainable livestock production as well as burning and slashing methods. The second pillar is the Plan de seguridad hídrica 2050, which is based on the improvement of the



distribution of drinkable water at the national level. The third pillar is the development of agroecotourism, which would encourage tourism based on sustainable farming practices. Finally, the fourth pillar mentioned is the institutional strengthening of Miambiente. When asked about the relationship between climate change policy and food security, Vanegas pointed to the Estrategia de Cambio Climático de Panama's section on Food Security, which states that the priorities in terms of climate change policy and food security are to identify varieties of crops which are resistant to climate change, incentivize a change in sowing periods and modifying the sectorization in the agricultural sector, and finally to develop climatic prognostics which would allow the producer to adapt to foreseeable changes. When asked about the consultation process for the creation of these policies, Vanegas mentioned that REDD+ underwent fourteen public consultations for its development, and that policy-making was constantly fueled by public consultation.

Dr. José Alberto Yau, a researcher with IDIAP, explained, much like SENAPAN's 2017-2021 Plan does, that food security in Panama is partly understood through the characterization of agricultural producers, with one of these categories being family-based agriculture, whereby the workers of a parcel of land are family members themselves. As for the role of IDIAP in food security, forty-seven to forty-eight projects of genetic "improvement" are being undertaken in order to improve production. IDIAP acknowledges the impacts of climate change through its research on developing seeds with high tolerance to droughts, such as rice varieties which present a lower demand in water for production. Yau also explained the Agronutre program, which entails the biofortification of certain seeds, such as rice, yuca, and camote. Rice specifically presents an important historical example of the use biofortification as a way to combat food insecurity in Panama, when the Law 33 of 2009,



which creates the Programa de Fortification de Arroz, was passed. Foods are usually fortified with betacarotene, iron, zinc, and vitamins.

## *2. Interviews at Regional level*

Mr. Eulito Peralta is the Agricultural Technician at MIDA's office in Santa Fe, Veraguas. He was mainly asked about his experience with food security and food security issues specifically in his area of work, however he explained that he had not worked in the Rio Luis corregimiento of Veraguas, which is where El Guabal is located. However, he did mention that he believes there is little action being done in Rio Luis, but that he was aware of a program of rural extension, where MIDA carried out training in communities for commercial coffee production. When asked about the relationship between MIDA in Santa Fe and Miambiente in Santa Fe, which shares the same office, Peralta stated that they were not officially jointed or specifically communicated about food security issues, but that some motions established by policy-making, such as prohibiting the burning of forest for environmental reasons, has pushed MIDA to adapt to such laws by training farmers through non-burning methods. Finally, Peralta noted that climate change had indeed affected the production of certain crops in the region which has pushed for changes in the calendar, as seen with traditional crops such as rice.

Javier Enrique Gonzalez Peñaloza of Miambiente in Santa Fe, Veraguas, provided local insight into how Miambiente operates in Northern Veraguas. He explained that there is an effort to reduce the use of agrochemicals in the agricultural areas of the region, and current training programs are being put in place to prevent agrochemical use. He also confirmed the presence of the REDD+ program, as there are reforestation programs, as well as a special focus on the recovery of watersheds. Given MIDA's presence in the same office as Miambiente, we asked Mr. Gonzalez Peñaloza whether there was any relationship between



the two offices in Santa Fe, particularly coordination pertaining to food security, and he mentioned that there was currently a lack of inter-institutional coordination which would allow them to do that. When we inquired about social programs for food security, he stated that there was little presence by the MIDES, but that there was the program “120 para los 65”, a program aimed at providing financial aid to elders. He also highlighted that the Red de Oportunidades did not operate in his area of work, and despite the presence of SENAPAN’s food aid “bonos”, he noted that SENAPAN used to have an office in Santa Fe that no longer operates in Santa Fe. When asked about the construction of the new road which had reached El Guabal, Gonzalez Peñaloza stated that it was a government project executed through private enterprise, and that its construction, despite its possible damage to the environment, represented a cost to undergo for development.

### **C. Alto Bilingüe Proper**

#### *1. Surveys*

Of the forty houses that we visited with the surveys, there were only thirteen that desired to participate. Because of this small response rate, the data cannot be used as a representation of the population. However, this does not mean the data are not interesting or that they cannot be used to pose new questions or speculate. It should be noted that all data presented by the surveys are only representative of those households which participated and that they are presented as such, and not presented as a representation of the population of the community. All questions referenced can be found in Appendix C.

1a) This question was answered by all of the participants. The smallest household record was two individuals, while the largest two households contained ten inhabitants. The



average number of inhabitants per household recorded was 6.3 individuals per house.

[Appendix D, Graph 1a]

1b) This question received responses by all but one participant. From the responses received, we found that 62.2% of the population of participating households were females while 37.8% were males. [Appendix D, Graph 1b)

1c) The question was answered by all but one participant as well. However, because the participant was not sure, or because the participant did not wish to give them, only six participants gave the ages of each member of the household. We noticed that in many households, there were children whose ages ranged from just a baby to mid-to-late teen. Of the houses that provided the ages of all inhabitants, the average ages were: 17, 17.3, 16.3, 15.9, 13.5, and 18.4 years old.

1d) This question also had a one hundred percent response rate. There were four types of responses: Dialecto, Buglere, Castellano, and Español. Castellano is the type of spanish that is taught in the school, so when a household answered with Castellano, we counted it as Español. Dialecto here means that they speak in a native language. However, it is unclear if that means Buglere, Ngöbere, or another native dialect. For that reason we cannot assume that it means Buglere although it might make sense because the region is known to be populated by mostly Buglé people. From the survey, we found that seven participating households said that they only spoke Buglere in the home, that no households only spoke Español, and that three participants spoke a combination of Buglere and Espanol. [Appendix D, Graph 1d]

2) Question 2 was answered by all participants, and all thirteen participating households said that agriculture was their principal work.



3) This question was also answered by all of the participants. In these answers we found that ten of the thirteen households had both a huerto, or siembra, and a finca, or monte. Additionally, two participants stated that they only had fincas while one participant said that they had neither. [Appendix D, Graph 3]

4) Question 4 was designed as a way to try and understand the variety of crops grown by the participants. The responses we received showed that nine households grew yucca, eight households grew Maiz, eight households grew Ceba, and Ñame, Guineo, and Arroz were all grown by six respondents. [Appendix D, Graph 4]

5) This question gave us a depiction of the foods that are most commonly eaten in the participating households. Guineo was the most common response, mentioned by four households. Platano and Arroz were both mentioned by two households. [Appendix D, Graph 5]

6) Question 6 was meant to provide us with an understanding of what kinds of foods people buy from the Tienda. The most common product purchased by participating households was Sardinias. Arroz and Frijoles were the second and third most commonly purchased goods, respectively. [Appendix D, Graph 6]

7) Number 7 only received responses from six households. Two of those households responded that they do not buy anything from their neighbors. Of the four households that said that they did buy products from their neighbors, three households said that they bought Yucca, one house also bought Pollo, one house also bought Frijoles, and one house only bought Carne.

8a) Part a) of question 8 tried to help us understand if there were moments when the households could not rely on their crops to sustain themselves because nothing was ready to



harvest. Although one household chose not to respond, the majority of participants said that there were moments when nothing was ready to harvest. [Appendix D, Graph 8a]

8b) Of the participants that responded 'Yes' to question 8a), six households were able to provide us with the months during which this situation occurred. The three most frequently mentioned months were April, May, and June. [Appendix D, Graph 8b]

8c) Part c) was meant to help us have an idea of what types of products were consumed during the periods mentioned by the participating households. Only four of the households that replied 'Yes' to 8a) provided an answer. The three most commonly consumed products during times without crops were Maiz, Arroz, and Yucca.

9a) Eleven participants answered the question of if they ever had an abundance of crops ready to be harvested. Six of those households said that they had encountered a time where they had more than enough food harvested, while five households said that this had never happened.

9b) Of the six households that had experienced this, only one house said that they sold their excess yields. However this house also said that they saved some for later consumption. The other five participants that responded all said that they would save the excess for later consumption.

10a) All thirteen respondents answered question 10a. Five participants said that they did not think there were any foods that were important to their culture. The remaining eight responded by saying that they did believe that some foods were culturally important to them. [Appendix D, Graph 10a]

10b) Seven of the participants were able to name some foods that they believed were important to their culture. The most mentioned food was Iraca. The second most mentioned was Helecho. [Appendix D, Graph 10b]



11a) Ten participants answered this question while the remaining three chose not to answer. Of those that responded, all of them said that they were not a part of a cooperativa.

11b) When asked if they would like to become a part of a cooperativa five respondents answered that they would be interested in joining a cooperativa. Three respondents answered that they did not want to, while the remaining five participants did not provide an answer.

12a) This question was meant to find out if, in the last five years, any of the participating households had encountered a period of time during which they did not have access to enough food to feed themselves. All participants answered. Eight of the households had experienced such times while the remaining five stated that they had not. [Appendix D, Graph 12a]

12b) The responses to this question were very limited. Six participants did not answer. Of the remaining seven, three were able to provide us with the months during which this had occurred. The other four did not provide details of when but answered with ‘algunas veces’ or ‘depende’. The months mentioned were February, October, November, and December.

13a) All participants answered when asked if they received any form of aid from government programs. Nine households did in fact receive some sort of government assistance, while the other four households said that they did not. [Appendix D, Graph 13a]

13b) Of the households that received government assistance, all said that they were aided by the program Red de Oportunidades. One household said that, in addition, they also received money from the “100 para los 70” program.

13c) Although the manner in which the answers were given to this question differed, the results are the same. The Red de Oportunidades program provides fifty Balboas per month to participating families, and that money is given every three months, so the families



receive one hundred and fifty Balboas every three months. The “100 para los 70” program provides participants with a hundred Balboas every month to individuals over the age of seventy.

## *2. Observations*

The most useful observations that we made in Alto Bilingüe Proper came from a tour of what food is grown in the community (Appendix E). We recorded the names and photos of thirty-one different products being produced throughout the community. Some of them had very specific cultural significance, like the Koscla, a specific variety of cacao [Appendix E], which is said to have ceremonial significance. We also learned of plants that were used for traditional medicine, such as the Malba plant [Appendix E].

From listening to different discussions that people had, we were also able to make certain observations. While we were walking from house to house conducting surveys, we came across a group that was meeting to start a polleria. It was a group of a few families that were all working together to start a collective for commercial chicken. Additionally, at the end of one of our days, while we were back at the house where we were staying, we heard our guide discussing a large inter-community gathering that would take place at the end of April. This gathering of different communities from the surrounding area was going to be the start of an NGO for the Buglé people.

During the first community meeting in Alto Bilingüe Proper, four crops were identified by those present as being currently vulnerable to plagues: oranges, rice, coffee. It must be specified that the perceived incidence of these plagues has increased over the past years. In the case of oranges, it was said that something was causing them to fall too early. For rice, the presence of an unidentified species of bird which eats the grains before time was also increasingly becoming a burden. Upon further inquiry during our second stay in Alto



Bilingüe Proper, we were told that the reason why the production of rice had almost collapsed was due to seasonality - a rainier season was preventing the community from using their Swidden-based soil preparation technique for coffee planting, which involve the burning of trees under dry conditions. As for coffee, it was also noted during our second stay that the plague attacking the coffee beans was an insect called the broca, This information was given to us by a community member who worked partly for a commercial coffee growing project. Finally, maize, specifically “maiz criollo”, was identified as increasingly vulnerable to “gusanos”, worms.

The community meeting also confirmed the information collected from the survey about government aid presence, which found that the only program present in the community was the Red de Oportunidades, a government aid program aimed at helping women financially. Another implication for the Red de Oportunidades was that its beneficiaries must organize a commercial fair where people from neighbouring communities can trade different locally-produced products. As such, the topic of an opening to markets was approached positively by some members of the community. As seen with the commercial coffee grower and the meeting for the polleria, as well as comments from other individuals, there seems to be room in Alto Bilingüe Proper for an improved and more accessible market of goods.

Finally, as for the traditional methods of food production, we observed that there is no use of agrochemicals, and that a relatively small areas has incredible diversity compared to conventional farming plots. In the community meeting, it was explained to us that the land was worked with a practice called “tierra en descanso”, a sporadic, non-intensive method of production whereby rotation of crops is done at a small scale but over a large area. This allows for the production of many different crops in proximity to each other. For example, we would observe a medium-sized area of land which had only maize, but right next to it grew a



tremendous amount of individuals of different species, as shown by the tour of the huerto. Another technique which illustrates the method of “tierra en descanso” is how maize was being cultivated - seeds are thrown randomly and sporadically on a slope.

## **D. El Guabal**

### *1. Surveys*

We did not complete enough surveys in El Guabal to provide us with any really usable statistical data. The day that we blocked off for conducting the surveys was a religious holiday, and we had not planned on this. As a result, most houses were empty. We were only able to collect four surveys. The more useful data that we collected in El Guabal was in the form of observations and discussions that we had with the people in the community.

### *2. Observations*

For both of our visits to El Guabal, we were forced to change our plans as a result of things that were happening in the community. The first visit we made, we showed up on the day that SENAPAN was distributing ‘Bonos’. There was a group of volunteer doctors from the Southern United States conducting checkups on the schoolchildren while the adults waited to receive the aid. Once they would receive the Bono, they would go immediately to the Tienda to renew it for food. We talked to the man in charge of this distribution, he explained the following about SENAPAN’s Bonos Alimenticios Nutricionales: They are a cheque of one hundred and fifty Balboas given every three months to families under certain conditions. The Bono can only be used in approved markets, which included the cooperativa. Later, a poster was identified in Santa Fe which explained the conditions to receiving the Bonos: children over six years of age must be attending school and their vaccines up to date,



adults must have their health checks up to date, and a member of the family must participate in a training program for food production.

On this first visit, we also met a United States Peace Corps volunteer who is stationed in El Guabal. We learned that he was there to work with coffee producers in the area to try and help them commercialize their crop. He also acted as a translator for when the volunteer doctors came to conduct health checkups on the children.

From our discussions with different community members, we learned that, although El Guabal is just outside the border of the Comarca Ngöbe-Buglé, the population is a mix of Buglé and Campesino inhabitants. In one conversation that we had, we learned that there has been somewhat of an identity crisis in the community over the years, where some individuals who used to identify as Buglé are now identifying as Campesino. However, we do not have the data to substantiate this claim.

One recurring topic in our discussions with community members was the road. There is a newly constructed paved road that runs from Santa Fe, Veraguas, to El Guabal. The pavement stops at the school, although the government is in the process of trying to continue the paved road all the way to the northern coast. When we pursued the topic of the road in conversations, we seemed to get mixed opinions of it from the community members. One individual seemed to be happy with the changes that had come as a result. He said that, before the road came, there was very little government assistance and very little access to any sort of healthcare. A different individual told us that it has increased access to many different types of food and has given some people the opportunity to sell their crops.

We also received some negative opinions on the road. We heard that wealthy individuals and private companies have been visiting and trying to buy land off of individuals because of the abundance of minerals in the land. We do not have evidence to substantiate



this claim. However, we heard this from more than one individual. Additionally, one man said that he thinks the construction of the road might be polluting the water because, even though there aren't any communities up to the source of the river, they have noticed that a lot of the fish are dying. Again, we do not have any proof to back up this statement.

The presence of the road has brought change to the community; this is certain. Before the creation of the road, there was very little government help in the community or surrounding communities. However, now government programs are active in the area. We witnessed the distribution of 'Bonos' by SENAPAN. The Red de Oportunidades program is also present in El Guabal. Additionally, there is the aid program for the elderly called 100 para los 70, which allegedly offers a payment of seventy Balboas per month to individuals over seventy years of age. Not only do these programs exist here, outsiders come in to help ensure that the members of the community can meet the requirements in order to receive the aid. The government programs have certain criteria that must be met in order for a household to qualify. In El Guabal, the road has not only brought the programs, but also the help needed to make sure that families can qualify for the aid more easily.

### **E. Comparing the Communities**

As was mentioned earlier, the community of Alto Bilingüe Proper was not chosen by us. However, we chose El Guabal because it provided us with an interesting contrast in situations.

Alto Bilingüe Proper is located in the Ngöbe-Buglé comarca and El Guabal in the province of Veraguas, which implies a different national approach on land tenure. El Guabal is a community where a relatively new road ends, and, as we observed on our first visit, it appears as though the government is financing a project to extend the road from El Guabal all



the way to the northern coast. As a result, El Guabal has relatively easy access to the rest of Panama. The road has brought government officials, tourists, and international volunteers such as members of the Peace Corps.

This in contrast to the Community of Alto Bilingüe Proper. The only way to get to the community is to hike two to three hours into the mountains to the northwest of El Guabal. The path is rugged and can be very dangerous depending on weather conditions, which means that Alto Bilingüe Proper has not been impacted by the outside world to the same extent as El Guabal. In terms of demography, El Guabal is considered a mix of both indigenous Bugé households with “latino”, or “campesino” households.

## **F. Limitations**

In our research we came across a number of different events and situations that impeded our progress. Considering the facts that we were the first two individuals working with ACD to conduct research in the area of Alto Bilingüe Proper and that we were the first two ACD affiliated individuals to conduct research on food security, we took note of every limitation that we came across as a result that could be handed off to the organization in order to help them prepare for future research on the topic and in the area.

### *1. Methodology*

Although our original methodology in the two communities included conducting semi-structured interviews with individuals, we very quickly learned that this was not a method that could work in the area. An observation that we made during our first visit to Alto Bilingüe Proper was that people were not very open to talking with us. During the community meeting on our first trip, we noticed that there were only two or three individuals who spoke while the others sat and listened. Additionally, during our first trip to El Guabal, when we'd



pose a question for a semi-structured interview, we would occasionally receive a response similar to, 'I am not sure that I have the knowledge to answer these questions'.

For these reasons we decided to switch methodologies and elected to conduct surveys with much simpler questions and answer options instead. However, this did not improve the situation as we thought it would. We noticed that, if the male head of the house was not present, we would often be turned away. Additionally, when questions were left unanswered, it was sometimes unclear whether it was because the participant did not want to answer the question, or because they did not know how to answer. In one instance, the member of the household that was answering the questions could not remember the ages of some of his family members, and therefore could not answer.

## *2. Time*

Time was a major restraint on our ability to collect data. To start with, our schedule was organized in such a way that there were rarely periods longer than a few days that we could actually use to go into the field and collect data. Additionally, it takes one full day in order to reach El Guabal, and an extra half of a day in order to reach Alto Bilingüe Proper. So, if we had a total of seven days in a row to work, between two and three days would be wasted traveling to the research sites.

This also had an impact on our relationships with the communities. Social research relies on mutual trust between the community and the researchers. This does not happen overnight, and it is especially difficult when the researchers are foreigners and the community already is distrusting of outsiders. The research could have resulted in better data had we had time to spend in the communities in order to build trust.

## *3. Lack of Experience*



This was both of our first times conducting field research. This created an obstacle in that previous experience allows for better decision making. Once we noticed that the semi-structured interviews were not going to work, we may have decided to use a methodology other than surveys if we had more research experience under our belts.

It is particularly important to hire researchers with experience working in indigenous communities because there is a very different dynamic of trust and culture in these situations. We had very little information on the social structure and culture when we first arrived to Alto Bilingüe Proper and we therefore might not have handled the introduction in the best manner possible. This could have lead to increased distrust in our project and in ourselves by the community.

Finally, a lack of experience and understanding of the societal structure in the area meant that we had a very poor understanding of how a community was defined. We ended up attempting to conduct semi-structured interviews in a community that neighbored El Guabal without realizing it. Additionally, we had very little understanding of the hierarchy within the Buglé communities. We were informed by the Corregidor in Alto Bilingüe Proper that there were two separate areas that were considered to be a part of the community, and that we could go there to try and collect more data. However, when we went to one of the communities, called Rio Tallo, we found that they identified as a separate community and that we needed to get permission from the Jefe Inmediato, not the Corregidor.



## **V. Conclusions**

### **A. Summary and Significance of Findings**

We have found, through the methods of policy research, semi-structured interviews, surveys, and field observations, that the national food security plan, specifically in the comarcas, is looking to increase agricultural productivity and output through investment in infrastructure, the introduction of new crops and farming techniques through formal training, and commercial fairs.

We also found that in the communities, particularly in Alto Bilingüe Proper, there was a scarce presence of government aid for the insurance of food security, as seen with the specific conditions needed to receive said aid. Noticeable changes in the climate and the increasing perception in the incidence plagues have caused, it seems, for the community to adapt to these changes through an increased dependence on outside foods purchased in markets, as seen with the case of rice in recent years. As such, we judge that the Plan does not correctly take into account the challenge of climate change adaptation into its goals. We argue, through our experience in the field, that changes in the climate must be considered a challenge to the same level other main challenges were identified, as opposed to an afterthought of the Plan.

Finally, community members in Alto Bilingüe Proper have voiced a desire to belong in an accessible market where their produce is commercialized, and the new Plan may be correct in its assumption that increased productivity and an increased access to employment and markets may be an appropriate solution to food insecurity. However, undeniably, the Plan should take into account food sovereignty at a community-level. As such, the Plan needs to better take into account traditional agricultural practices such as “tierra en descanso”,



which maintain the high diversity of what is being produced, as shown by the tour of the huerto, The plan should look to enhance, as opposed to overshadow, local and non-conventional agricultural practices. This conclusion echoes Helena Saracho's thesis which states that the safeguarding of traditional food culture is a better alternative to combatting food insecurity compared the introduction of foods.

### **C. Implications**

#### *1. Local*

**a) Community**        The implications of our research on the communities we visited are so far unknown, considering that this is just the very beginning of the project. To the extent that we can assume, there could be an impact on the amount of trust of outsiders and foreigners. During the town meeting in Alto Bilingüe Proper on our first visit, we had difficulties trying to ensure that their expectations were as realistic as possible. We assured them that the research was aimed at benefiting their community, however we were not in control of whether or not the government decides to act on the information that they will receive at the end of the project.

**b) ACD**        Additionally, there are implications for our host organization as well. ACD has very few projects in the area of Northern Veraguas, and this is the first project on food security in the Comarca area of the region. As a result, even if the data that we collected was not representative of the entire community, the observations we made will add to the general understanding of the area and will help inform both the continuation of this project as well as the planning and implementation of future projects.

**c) The Republic of Panama**    Since the information, data, and observations we collected will be used to help continue ACD's study of food security and climate change, eventually it will



lead to stronger data that can be used to argue for an improvement in Panama's policies on the two topics, particularly on how food security policy must take into account how climate change can lead to the deterioration of food security. For that reason, although our research does not directly affect Panama's policies, the hope is that our role in starting this project will eventually lead to an improvement in how the government addresses Food Security.

## *2. Larger Scale*

On a larger scale, the findings of our preliminary research do have an important role to play. In terms of international development, it provides an example of the start of a research project on Food Security. And as the climate continues to change around the world, Food Security will become an even more important topic.

In terms of policy, our study can be useful both to other governments as well as international organizations such as the World Bank. The analysis of SENAPAN's new plan could provide ideas for how other governments could handle similar situations in terms of improving food security within their borders. The significance of the new plan could also receive attention from the World Bank. The implications of the new SENAPAN plan could be a gateway for more World Bank programs to enter onto the Panamanian development scene.



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## VII. Appendices

### A. Research Code of Ethics Course Completion





## **B. Semi-Structured Interview**

Interview with Lorena Vanegas, policy analyst in the climate change unit at Miambiente:

### **Questions**

Nos podría describir su rol principal en Miambiente?

Nos podría usted describir el estado actual de las políticas de Miambiente en cuanto al cambio climático, específicamente en el Norte de Veraguas?

Han habido interacciones entre Miambiente y SENAPAN (Secretaría Nacional para el Plan de Seguridad Alimentaria y Nutricional)? Hay diálogo entre las dos entidades para tomar en cuenta los impactos del cambio climático antropogénico en la seguridad alimentaria?

Como es el proceso de participación local, específicamente en comunidades indígenas y campesinas, en la creación de políticas de cambio climático?

Como es la relación entre el desarrollo económico al nivel nacional y las políticas de cambio climático que se implementan a nivel local y nacional?

Panamá firmó el año pasado el Acuerdo de París, que fue un gran avance para el reconocimiento internacional de políticas que buscan lidiar con los impactos del cambio climático. El Acuerdo tiene presente “la prioridad fundamental de salvaguardar la seguridad alimentaria y acabar con el hambre, y la particular vulnerabilidad de los sistemas de producción de alimentos a los efectos adversos del cambio climático”. Qué piensa usted será el rol de Miambiente en los años que vienen para asegurar que esta prioridad del Acuerdo sea implementada en Panamá?

Cual es la posición actual de Miambiente ante el programa Agro Nutre de biofortificación de alimentos para combatir la inseguridad alimentaria en Panamá?



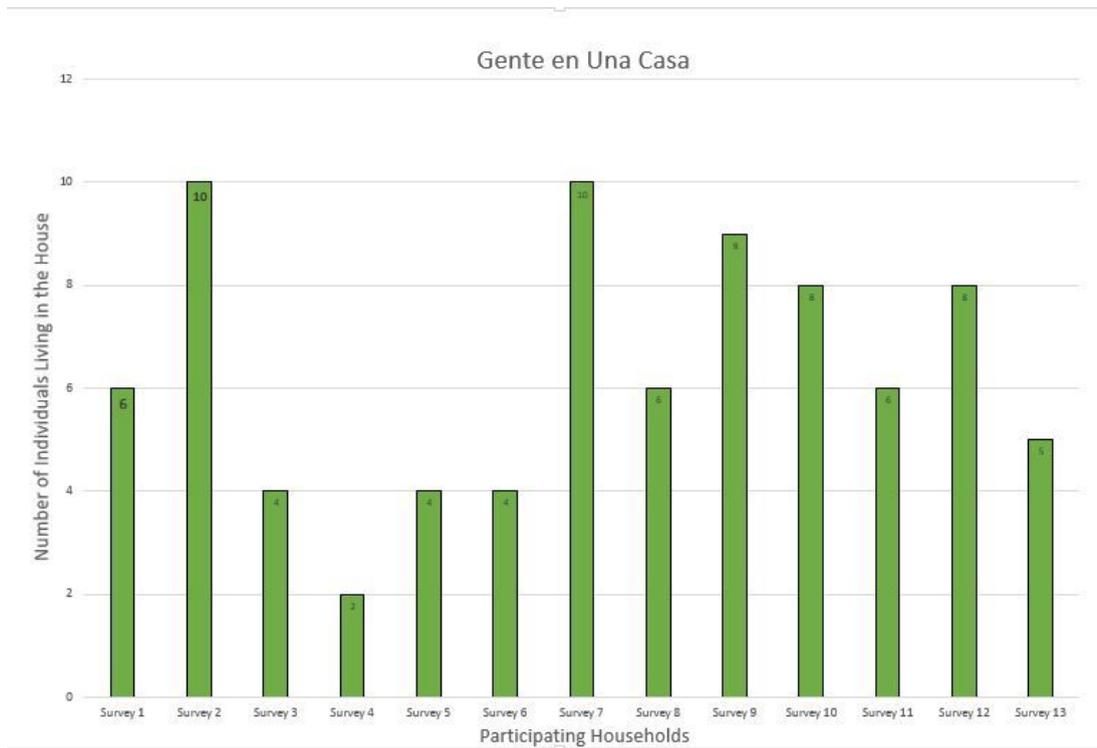
**C. Survey Questions**

- 1)
  - a) Cuántas personas viven en su casa?
  - b) Cual es el género de cada persona en su casa?
  - c) Cual es la edad de cada persona en su casa?
  - d) Cuales idiomas hablan en su casa?
- 2) Es la agricultura su principal trabajo?
- 3) Tiene Usted un huerto (una siembra), una finca (un monte), los dos, o ninguno?
- 4) Que alimento(s) produce Usted?
- 5) Cual cultivo come Usted en mayor cantidad en su casa?
- 6) Que alimentos que provienen de afuera de este corregimiento compra Usted? (Es decir, que compra Usted en la tienda?)
- 7) Que alimentos que provienen de adentro de esta corregimiento compra Usted? (Es decir, que compra Usted de sus vecinos?)
- 8)
  - a) Hay momentos durante el año que ningun cultivo esta listo para cosechar?
  - b) Cuando?
  - c) Que come Usted durante esa época?
- 9)
  - a) Hay algún momento durante el año que hay una abundancia de cultivos listos para cosechar?
  - b) La vende o la guarda?
- 10)
  - a) Hay comida que es importante o representativa de su cultura?
  - b) Cuales son estos alimentos?
- 11)
  - a) Es Usted socio de una cooperativa?
  - b) Le gustaria a Usted ser socio?
- 12)
  - a) Ha sucedido que Usted y su familia no tengan suficiente comida en los últimos 5 años?
  - b) Cuando?
- 13)
  - a) Recibe Usted ayuda del gobierno?
  - b) De cual programa?
  - c) Cuanto dinero es por mes?

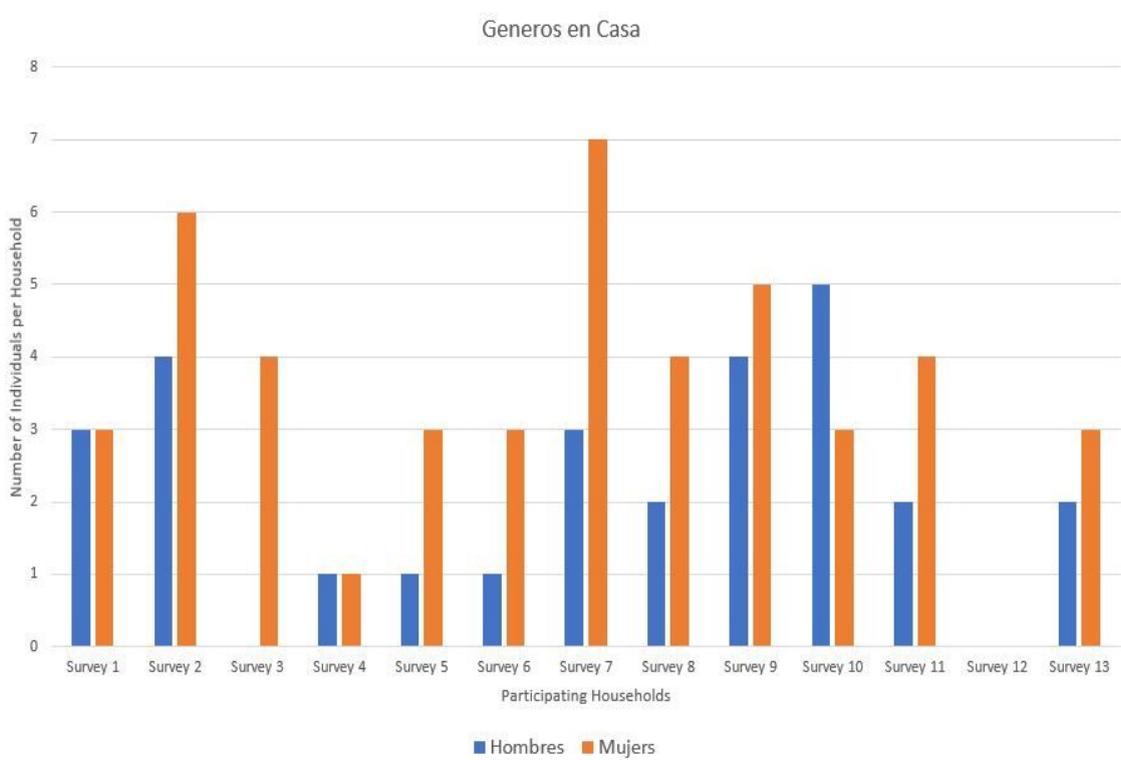


**D. Graphs**

1a)

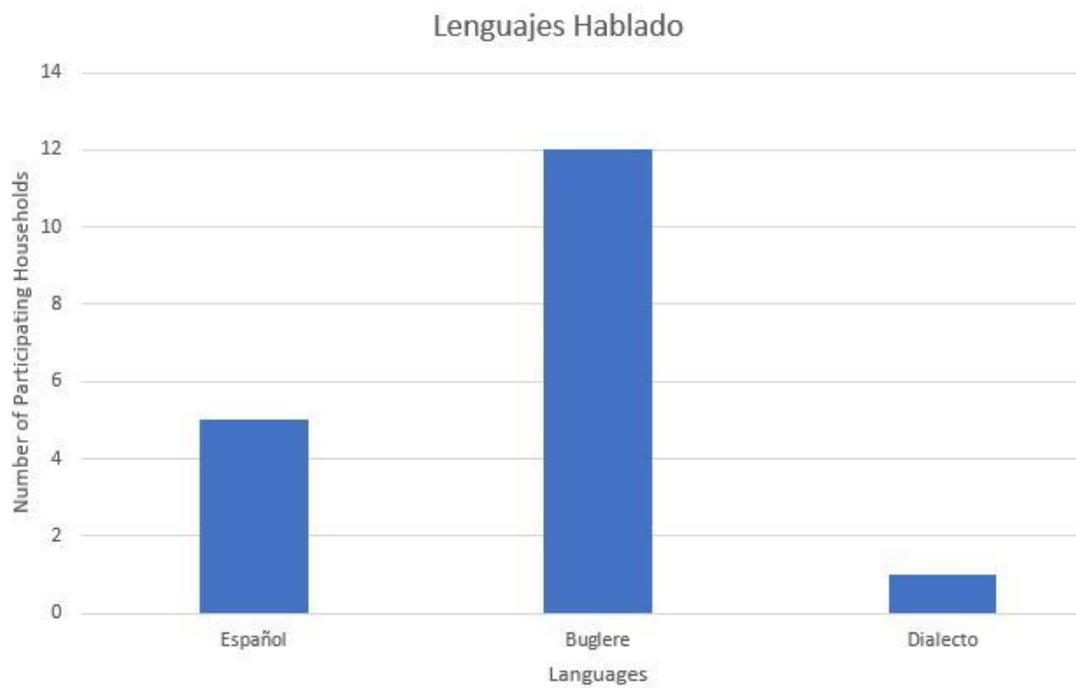


1b)

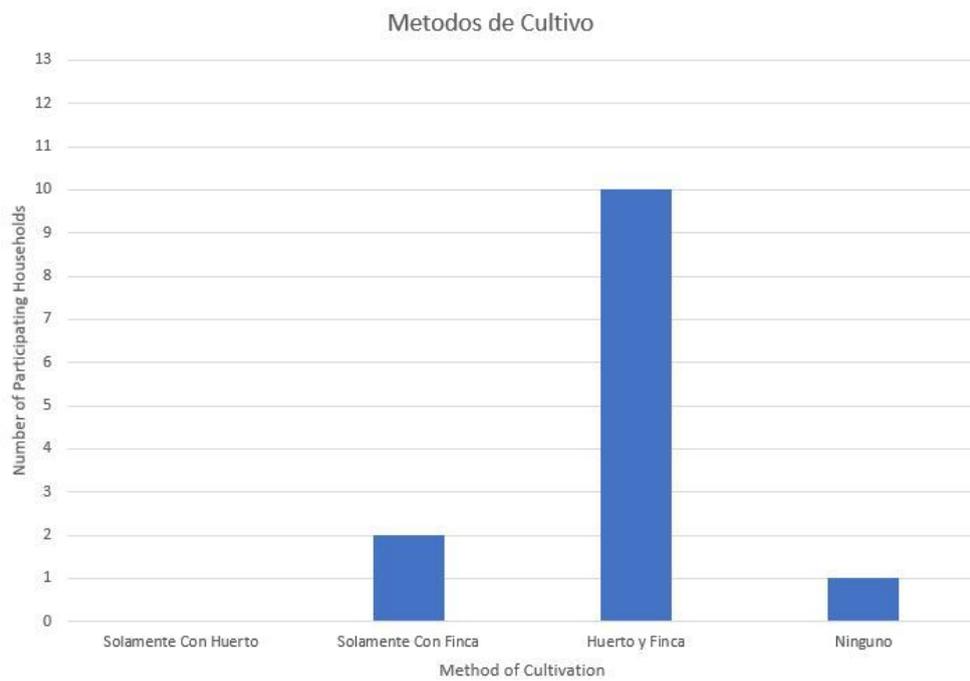




1d)

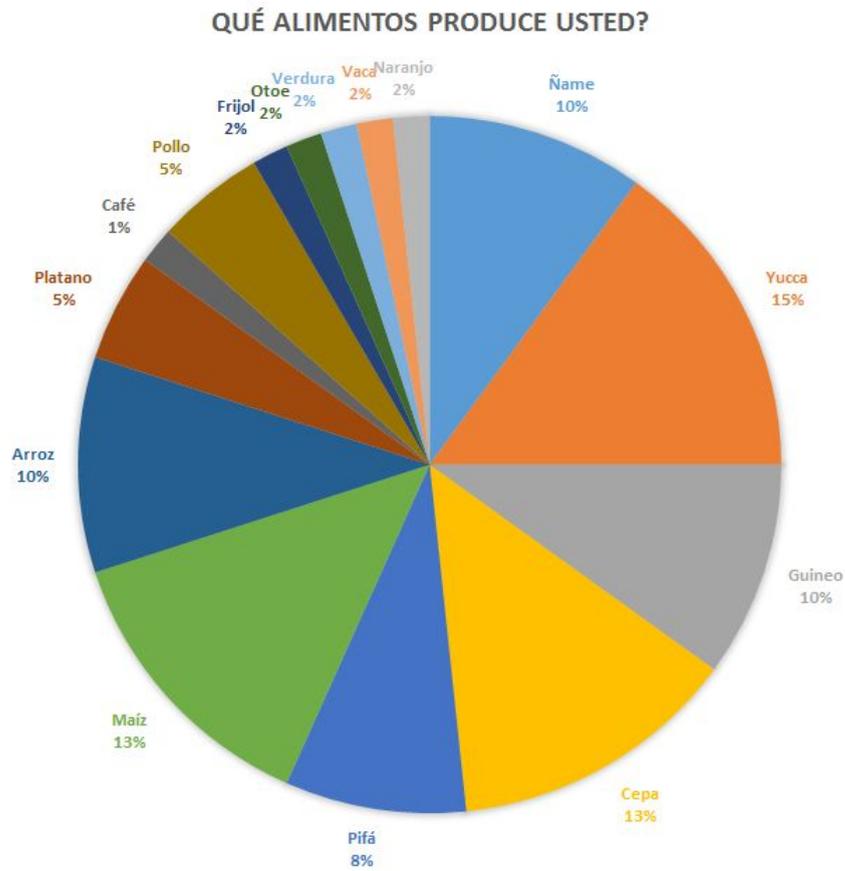


3)

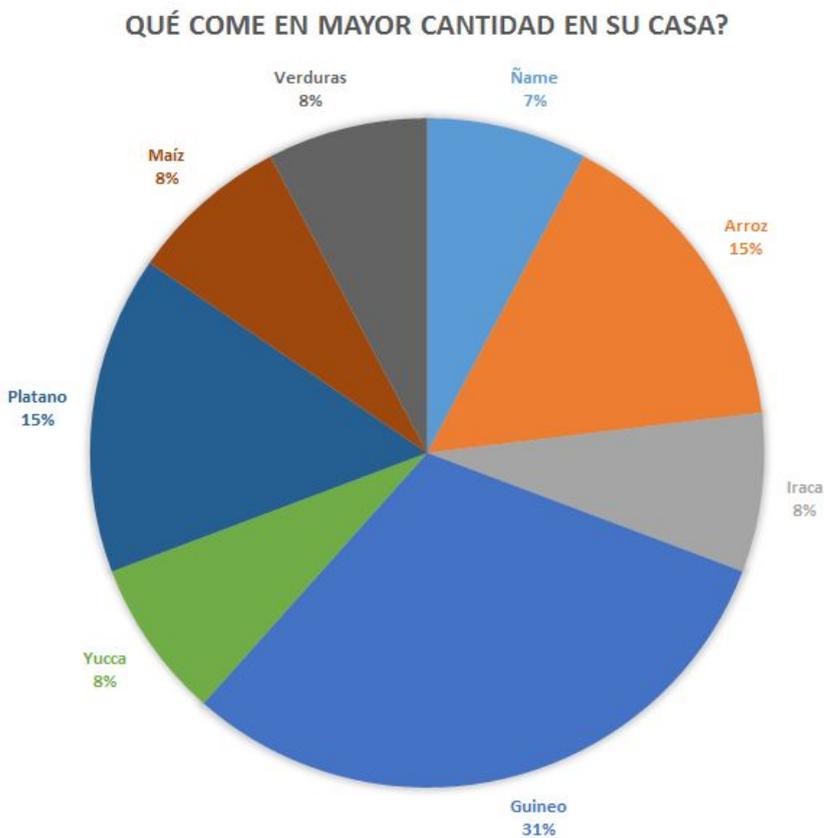




4)

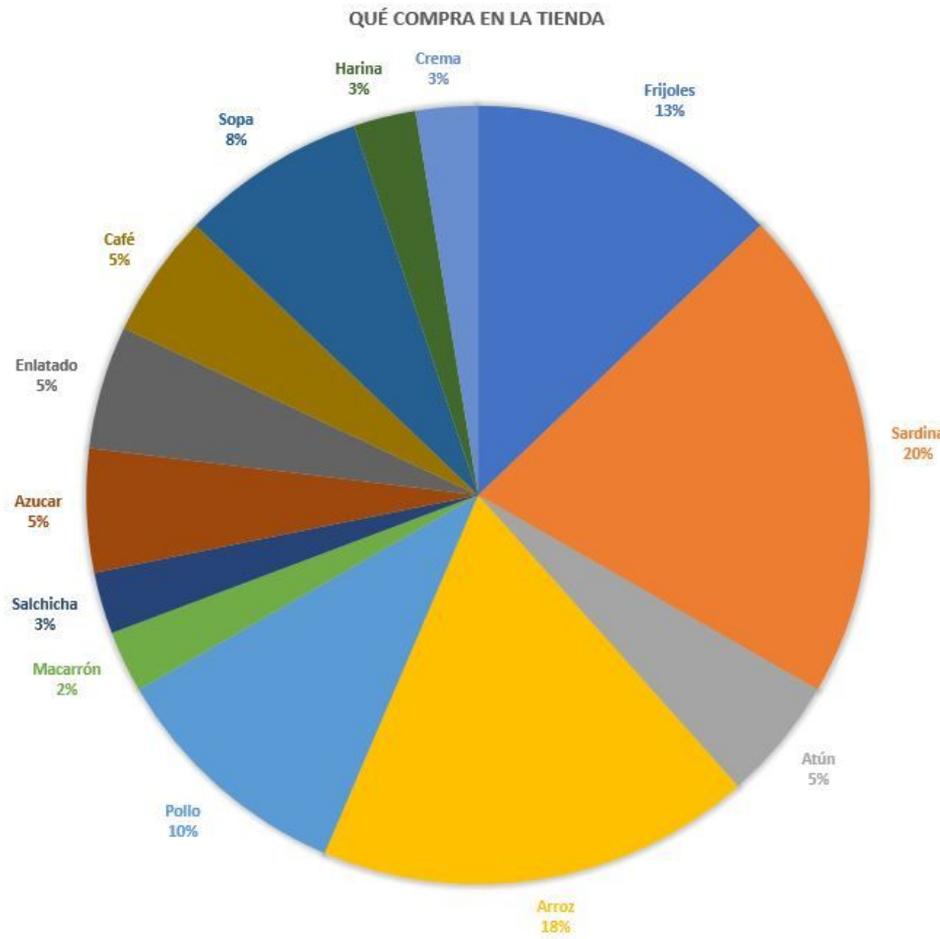


5)

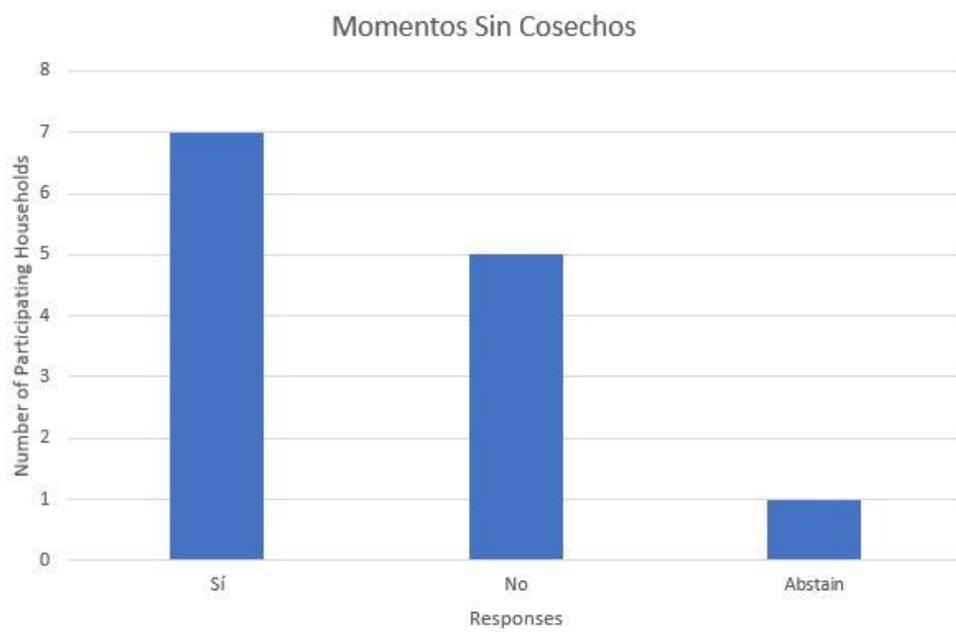




6)



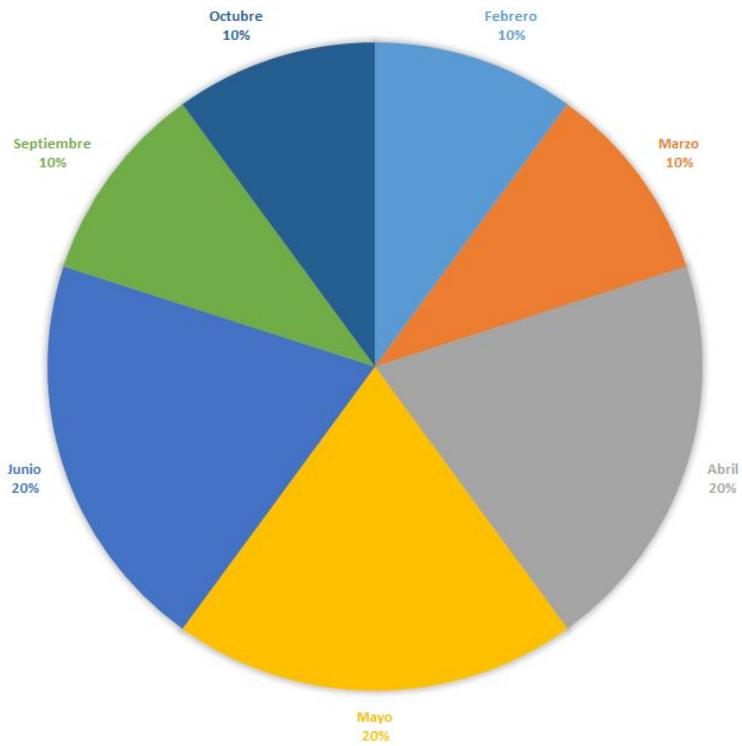
8a)





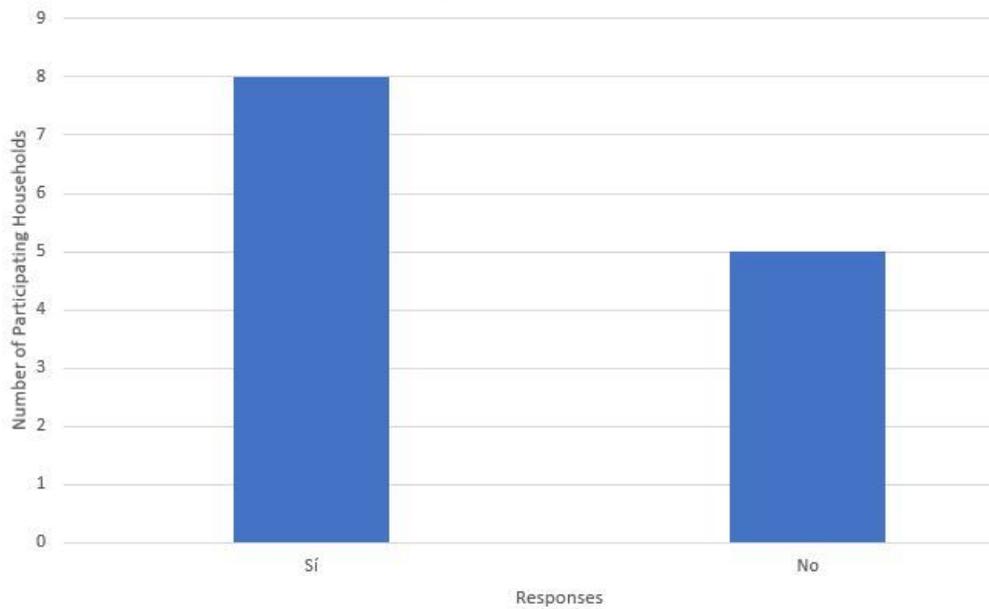
8b)

MESES EN LOS CUALES NO HAY NINGUN ALIMENTO LISTO PARA CULTIVAR



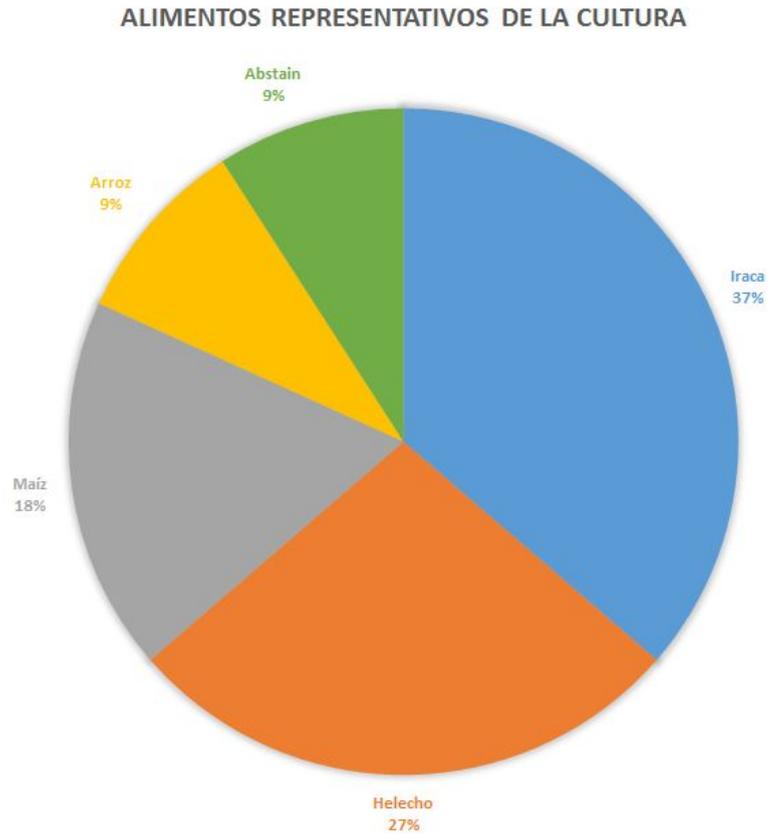
10a)

Hay Comida Cultural



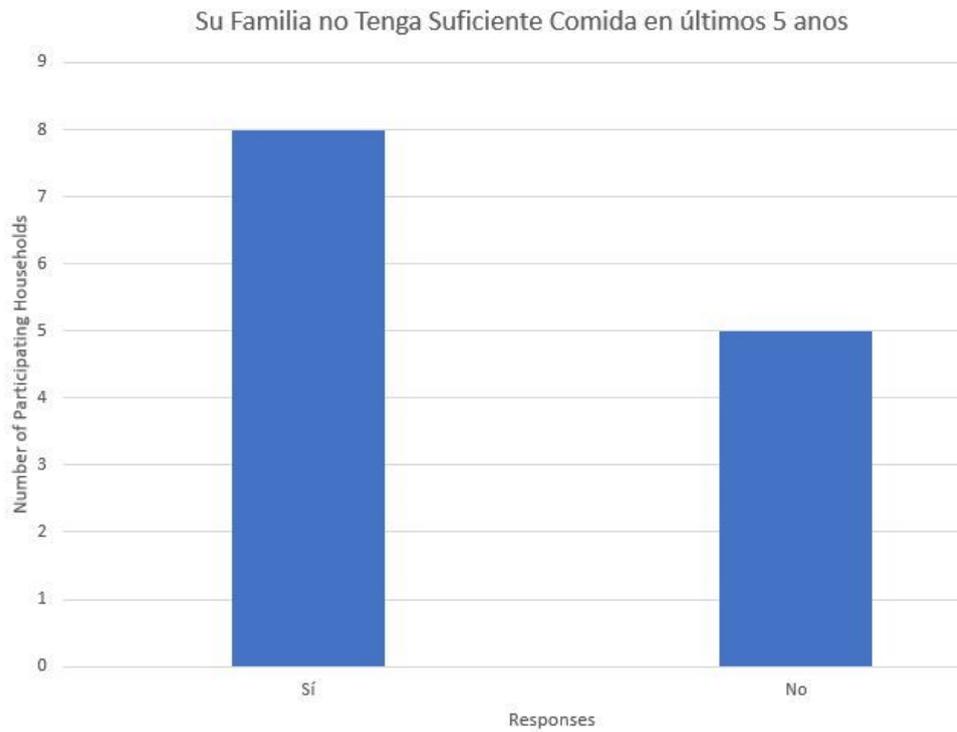
10b)



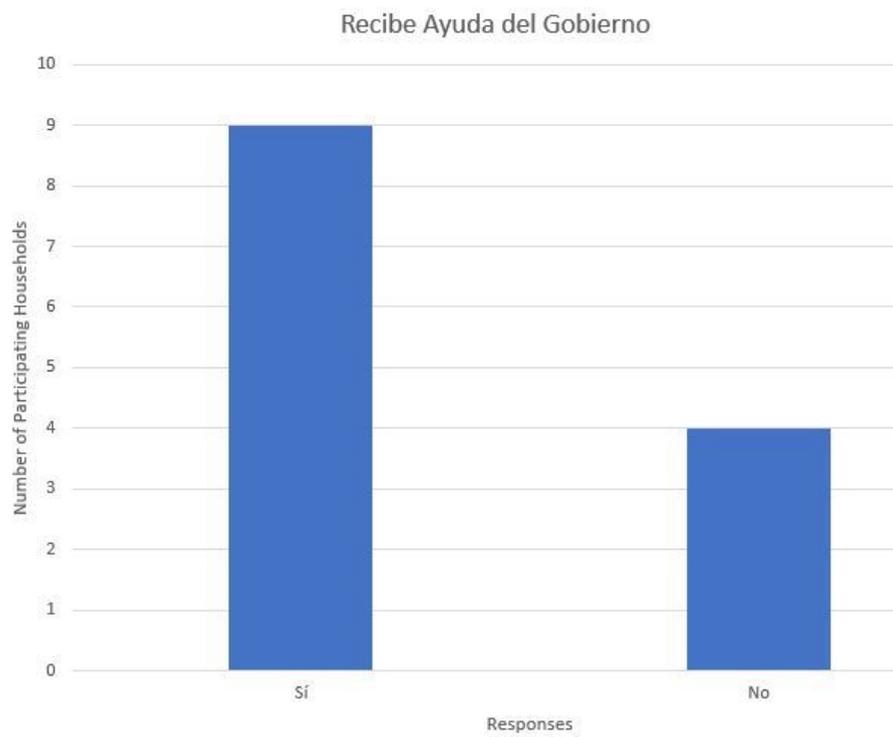


12a)





13a)





**E. Huerto Tour Photos**

Helecho



Guineo



Yucca



Cana de Azucar



Palma de Coco



Naranja



Palma Hilar



Naranja Japonesa



Tanque de Pescado



Chayote





Pina



Cepa



Marañon Curaçao



Cacao (Cultural)



Tomate y Culantro



Cacao Colorado



Guineo Chino



Achiote (arbol)



Naranjilla



Achiote (Semilla)





Maíz Criollo



Maíz Criollo afectado por un gusano



Ñame



Ñampí



Cacao Amarillo



Aguacate



“Pan” (una fruta)



Frijol



Papaya



Platano Domenico





Maiz Grande



Café (saludable)



Malba (medicina)



Café afectado por la broca



