

**EXPLORING CASMA VALLEY GEOGRAPHICAL KINSHIP:
MAPPING THE LANDSCAPE OF IDENTITY**

by

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B.A., National University of Distance Education (UNED), 1995

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ABSTRACT

EXPLORING CASMA VALLEY GEOGRAPHICAL KINSHIP: MAPPING THE LANDSCAPE OF IDENTITY

by Maria Orcherton

Social work as a profession historically advocates that communities deserve self-determination, cultural sustainability, and social justice. In light of these considerations, this research examines the social, cultural, and spiritual planting practices of the Casma people of North Peru regarding their native Apichu/Kumara/Camote (A/K/C) or sweet potato (*Ipomoea batatas* (L.) Lam.). For Indigenous/Mestizo families A/K/C represent the symbolic reflection in the preservation of communal knowledge, rituals, languages, traditions and teaching and learning practices mainly as a way of protecting community-base customs regarding autonomy, empowerment, self-determination, modernity, and cultural sustainability (Meyer, & Maldonado, 2010). Sadly, traditional planting practices, rituals, and ceremonies are becoming extinct. In this regard, Lundy (2008) critically states that many developing countries must adhere to imposed *structural adjustment programs*.¹ This external pressure requires Indigenous/Mestizo farmers to turn their best agricultural lands over to export crops to pay off their national debt, causing unsustainable practices, land degradation and erosion, as well as setbacks in social-welfare delivery to vulnerable groups. An important consideration is also the preservation of their communal (traditional) knowledge. Prado (2007) emphasizes the importance of social work within community adaptation strategies to Climate Change (CC). Viewed thus, the sustainability embedded in the revitalization of

¹ The structural adjustment program (in order to receive IMF/World Bank Loans), requires countries to embrace international investment and to put out the 'welcome mat' of low wages, compliant unions, environment deregulation, privatization of public services, and diminished the role of the state in social protection and social programs. (Lundy, 2008)

A/K/C, traditional "ways of knowing" can also be considered as one of the adaptation strategies to help Indigenous/Mestizo communities to become resilient to the impacts of CC. Undoubtedly, urgent solutions are needed that are both effective and respectful of the cultural context and local knowledge in which they will be applied. As a result, this research was framed within the following qualitative methodologies: using community case study, with a purposive sampling with six (families) participants. Data was gathered through informal conversations, oral narratives, and open-ended participant (field) observations. Upon my observations, I argue that enhancing these traditional "ways of knowing" is a way to support the Indigenous solidarity, which is integral to the future of these communities.

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LIST OF ACRONYMS

A/K/C	Apichu / Kumara/Camote
CBC	Canadian Broadcasting Corporation
CC	Climate Change
CSC	Case Study Community
CVR	Comision de la Verdad y Reconciliacion
EC	European Commission
FM	Family Member
GIS	Geographic Information System
GPS	Global Positioning System
IEK	Indigenous Ecological Knowledge
INEI	Instituto Nacional Estadistica e Informatica
IPC	International Potato Centre
MRTA	Tupac Amaru Revolutionary Moverment
ON	Oral Narrative
R&C	Rituals & Ceremonies
RQ	Research Question
SP	Shining Path (Sendero Luminoso)
SP	Sweet Potato
TK	Traditional Knowledge
TRC	Truth Reconciliation Commission
UNBC	University of Northern British Columbia

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Figure 1. Eladia Gomez Anyosa: *My culture will survive*, Ayacucho, Peru. By Orcherton, 2011

CHAPTER ONE

When I was young, I always wanted to be a teacher. It was a dream of mine, even since my parents send my brothers to school. I saw their struggles in school and felt that I was there to help. My parents sent me to work on the farm (chacra) instead, which I enjoyed very much, and learned to appreciate the little we had. While working on the chacra, I always listened to the community elders, and was inspired by them; they were my teachers, my guardians and the people I looked up to in times of difficulty. Life-long learning has also been my goal, and respecting the elder's teachings was also part of this goal. I am now 72 years old and I have tried most of my life. I also know by doing that I made my culture survive, because that is what sharing does. It makes things to grow again and again...

Eladia Gomez Anyosa.

Opening

En el tiempo en que crecí, en el colegio ellos no enseñaban Quechua
Nuestros padres solo trataban de hablar Español con nosotros. Eso era obligatorio
Y necesario, Porque nosotros teníamos que hablar a los profesores en Español
Fue muy difícil hablar con nuestros padres y abuelos,
Ellos no querían hablar Quechua con nosotros
En ese tiempo nosotros no entendíamos y nos sentimos avergonzados
cuando teníamos que hablar Quechua.
Yo sé que nuestros padres no querían que nosotros sus hijos seamos como ellos
Ignorantes, campesinos y pobres. Ellos decían, no sean como nosotros,
aprendan Español para que puedan tener una vida mejor.
Yo sé que sus intenciones eran buenas, querían proteger a sus hijos.
pero podía ver dentro de sus ojos el gemido de tristeza de la cruda realidad.

*In the time, when I grew up in the school, they did not teach Quechua
Our parents have to talk to us in Spanish. This was mandatory
And necessary, because we have to talk to our teachers in Spanish
It was hard to communicate with our parents and grandparents,
they did not want to speak Quechua with us
At the time we did not understand and we feel ashamed
when we tried to speak Quechua.
I know that our parents did not want us to be like them
ignorants, farmers, and poor. They told us that "do not be like us,
learn Spanish so you can have a better life."
I know their intentions were good they only want to protect us
I know that I could see through their eyes an agony clamour of sadness of this cruel reality.*

Maria Sudario Gomez, 2011

Introduction

The global urgency as a consequence of Climate Change (CC) that has radically shifted weather patterns, increased intensity of extreme events, and changed cropping cycles; which has also re-directed our notion of searching for more practical, "down-to-earth" community-based solutions or approaches for adaptation based on traditional knowledge (TK)². Recovering and revitalizing (traditional) ancient wisdom embedded in the social, cultural, and spiritual planting practices for example, is urgent and the need unprecedented, mainly because Apichu/Kumara/Camote (A/K/C), and its socio-cultural connectedness with its people, is also threatened³. Thus, acknowledging, validating and revitalizing ancestral "ways of knowing" especially for finding social and ecological resilience and adaptive capacities (strategies) to cope with the impacts of CC on Indigenous/Mestizo families, is also a fundamental component of building community resilience and reducing vulnerabilities. Borden (2010) states that "resilience involves struggling well, effectively working through and learning from adversity, and integrating these experiences into the fabric of individual and shared life passage" (p. 149).

In light of these global and regional based (or local) phenomena, it is critical to revitalize, preserve and sustain TK. As Indigenous peoples' ancient knowledge is one of the many cultural elements that must be incorporated into our ways of knowing and being.

² Traditional knowledge (TK), indigenous knowledge (IK), traditional environmental knowledge (TEK) and local knowledge generally refer to the long-standing traditions and practices of certain regional, indigenous, or local communities. Traditional knowledge also encompasses the ancient wisdom, knowledge, and teachings of these communities. In many cases, traditional knowledge has been orally passed for generations from person to person. Some forms of traditional knowledge are expressed through stories, legends, folklore, rituals, songs, and even laws (Wikipedia, retrieved from http://wapedia.mobi/en/Traditional_knowledge.)

³ Harmsworth, uncovered that the Indigenous Maoris' of New Zealand "... began to realize what a wealth of knowledge is in danger of disappearing forever on the death of Maori elders" (Harmsworth as cited in Tripachi & Bhattarya, 2004, p.4).

From an 'epistemological and ontological'⁴ perspective, it is crucial to ascertain how TK is embedded in the culture and language of village societies. Meyer and Maldonado (2010) believed that revitalizing the languages, cultures, and technical resources, and developing forms of social organization generated from Indigenous People's traditions, but adapted to the modern world, is a way to protect community- based customs and the sustainability and preservation of the culture.

Purpose of the Study

The purpose of this research is to examine the social, cultural, and spiritual planting practices of the Casma valley people of the north central coast of Peru regarding the native cultivar A/K/C. This research also seeks to validate/explore the claim that over centuries, Indigenous/Mestizo farmers and their families have developed an ability to adapt and respond to the challenges of CC. To understand how the Casma Peruvian adapt to the environmental changes and adopt new innovations/strategies into their daily lives, the overarching goal is to describe and map people's perceptions and their adaptive capacities (learning strategies or responses). Thus, Casma Peruvian build resilience, increase food security, alleviate poverty, and sustain their culture.

Research Question and Subquestions

1. What are the social, cultural, and spiritual planting practices (ways of knowing) of the Casma people in the north of Peru regarding their native cultivar A/K/C and how can this help them:

⁴ Epistemological and ontological refers to the philosophical study of the nature of being, existence or reality as such, as well as the basic categories of being and their relations. The researcher's epistemological stance is determined in part by their ontological position, even this is because a theory of the nature of knowledge, or the world, is at the same time a theory about knowledge of the world; hence there are large overlaps between epistemology and ontology. The shaping epistemological question for a researcher is - 'Can "real" or "objective" relations between social phenomena be identified, and if so how?'(Retrieved from: "the Philosophical Trinity" <http://www.durantlaw.info/philosophical-trinity>)

- a) To adapt and build resilience to new innovation/strategies and adaptive capacities (responses produced by their local knowledge) to the challenges of climate change.
- b) To increase their sense of food security
- c) To alleviate poverty

Significance of the Study

By exploring the effectiveness of the social, cultural, and spiritual role of A/K/C on the resilience of Indigenous/Mestizo farmers and families, and building on Indigenous culture and traditions of community empowerment will have profound effects in terms of uncovering traditional knowledge based systems, which in themselves, empower local communities. It is hoped that this research engages Indigenous/Mestizo people in their own cultural negotiations among several sciences found within communities, and recognition of the importance of the revitalization of traditional beliefs and values that empower communities to further broker knowledge and culture for future generations. In itself, of course, studying the impact of CC and the role of social work in the Indigenous families' resilience, practice approach, and problem solving process, help to better understand this resilience and how it influences decisions and knowledge building processes. Partnership opportunities will be developed and fostered between Peru, and other organizations. The researcher's hope is that the lessons learned in this study can be used in other Indigenous contexts (within First Nations communities in Canada) or in other geographical areas with similar social or cultural dilemmas.

Beyond these observations, it is important to indicate that after doing an exhaustive literature review on A/K/C, the focus of most papers done on A/K/C were regarding the

socio-economic impacts on CC and their possible solutions on poverty reduction, and food insecurity. However, the serious implications of vulnerability, resilience, and how to foster a positive adaptation in the context of significant adversity have essentially been overlooked or completely forgotten (ignored). For this reason, I believe that the strong social, cultural, and spiritual connections within Indigenous /Mestizo families with their land and their communities can counteract feelings of insecurity, helplessness, and meaninglessness created by the impact of CC, food insecurity and poverty. Meyer and Maldonado (2010) interviewed Chomsky who emphasized that the community can resist and counteract adversities, nevertheless, it will depend on “the nature of the community, how integrated they are, how committed they are to retaining their own identity, what kinds of external pressures they are under, straight economic issues” (p. 13). On the positive side, communal principles and daily practices of communality provide Indigenous communities with an authentic way of learning. It is through these communal actions that they enhance their cohesion and strength of identity to survive and resist.

Resilience is embedded by shared beliefs that increase options for effective functioning, problem solving, healing, and growth (Borden, 2010). The research findings contribute to the understanding of problems and policies in developing countries such as Peru, and may improve ways of bridging knowledge gaps between *Western science* and *Traditional science*, particularly in the field of social work. Within the contemporary social work context, and reflecting on what has been accomplished in this study, international solidarity is needed and is well highlighted in ethical guidelines of the National Association of Social Workers (NASW) 6. Social Workers’ Ethical Responsibility to the broader society.

6.01 Social Welfare:

Social workers should promote the general welfare of society, from local to global levels, and the development of people, their communities, and their environments.

Social workers should advocate for improving livelihoods, conducive to the fulfillment of basic human needs and should promote social, economic, political, and cultural values and institutions that are compatible with the realization of social justice. (p. 23)

Thesis Organization

My hope is that this thesis will be not only accessible for its content but also for its structure. Whoever accesses this material should find its organization logical, comprehensible and overall thoughtful and valuable. This thesis is divided into six chapters. Chapter 1, states the introduction of the thesis, and provides the purpose and explanation of what the thesis covers and the significance of the study and its design. Chapter 2 emphasizes the genealogical and geographical position of the researcher, which I found fundamental as an important element of interpretative inquiry in qualitative research. It introduces myself and briefly describes details of my personal journey as an Indigenous child growing up in Peru. The chapter also discusses the influence of my family, my community and the people with whom I grew up with, and how they have contributed to whom I am today. Chapter 3, includes the literature review and historical background (incorporation of visual layers of history) of the geographical setting, and the different processes of change among the Indigenous population especially in the coastal areas. In this context, the *visual layers of history*, as part of this research, “examines events or combinations of events in order to uncover accounts of what happened in the past” (Berg, 2007, p. 264). Chapter 4 discusses

methodology and methods used in this qualitative study. It emphasizes the uses of the qualitative approach and highlights critical reflection of the issues that underpin Indigenous research, and explains the methods that I employed to ensure that rules of cultural sensitivity, appropriateness, engagement, accountability and ethical considerations were met. It also presents the UNBC research ethical guidelines as well as the cultural values adapted from the work of Linda Tuhiwai Smith (1999), which I intertwine with the stages of development of A/K/C. At this point, Chapter 5, contains the collection of narratives as an introduction (a glimpse) into the world of the Casma Peruvian people, and traces the characterization of education, social experiences, and their consistent inequality and disadvantages. Finally, Chapter 6 covers the analysis of the narratives from my personal interpretation as well as lessons learned and the summary and conclusion of this research.

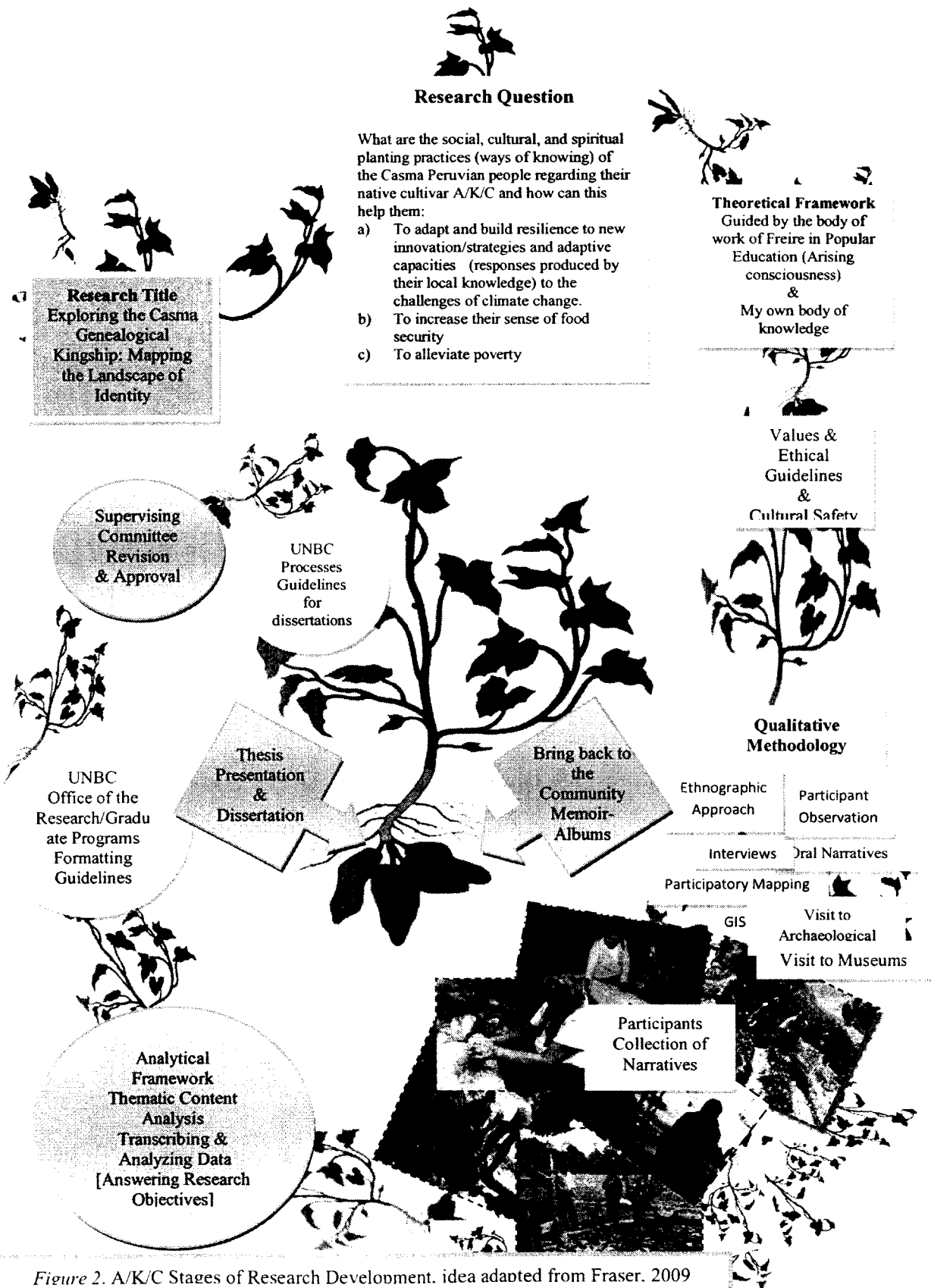


Figure 2. A/K/C Stages of Research Development. idea adapted from Fraser. 2009



Figure 3. Prince George, Tehja, Loui and Maria. *Youths and new views*. By Orcherton, 2011.

CHAPTER TWO

Genealogical and Geographical Location of the Researcher

Being able to be creative, reframe, and re-invent are necessary, especially when unhealthy memories from the past visit and revisit again and again... and this allow traumatic experiences to come to surface.... As I can recall, I can feel my body receiving the unseen pain and dark emotions. While this happens I close my eyes and ask for internal guidance and grace...then, I could feel my hands in need to touch the stones that I usually carry with me...After a few minutes of silence, beautiful thoughts came to me and I had an inner call to go out to the forest, to the river and hold a tree and share my story with them, with nature. I am becoming more aware in appreciating and recognizing that we are all in need of healing, learning, and growth...

Maria Orcherton, 2011

Opening

Pachakuteq

¡Padre mío Pachakuteq! ¡Mi Inka creador!
¿Dónde está tu querer? ¿Dónde está tu compasión?
Extendiendo tus brazos hiciste crecer el Tawantinsuyo;
mas, los hombres crueles hacen padecer a nuestra nación.
Lágrimas de sangre del Qolla Suyu venerado por los Inkas;
a tí te invocamos cuando sufre nuestra tierra.
¿Dónde estás Pachakuteq? ¿Dónde está tu corazón noble?
Si es posible resucita para que nuestra tierra progrese.

Pachakuteq (English)

Father of our nation! Creator of the Incas!
Where is your love? Where is your compassion?
You extended your arms, and made our nation grow into an empire;
But now, cruel men make our people suffer.
Tears of blood now flow in the venerated land of the Incas;
We call upon you, because our people are suffering.
Where are you Pachakuteq? Where is your noble heart?
If you were alive today, our nation would prosper.

By Octavio Díaz Mendoza.
(Translated to English by Ada Gibbons)

Introduction

The timeline of historical events has great influence in how people develop and how their worldviews are shaped. In Peru, during the 1960s in areas where haciendas exist Indigenous population were not allowed to exert their rights as citizens. Indigenous people did not have access to the land. The land tenure system was in the hands of minority groups called *the hacendados*. Politically, during this time, Peru returned to the civilian government (with Fernando Belaunde Terry as elected president), his government was then ousted in a coup by a military general (Juan Velasco Alvarado). With Velasco the land-reforms and the nationalization of programs started. In addition to class-based reforms, cultural transformation was also happening. Although this may be true, this was an opportunity to the *Indian* to avoid marginalization and discrimination. With this in mind, this situation created two options; first, to move out from their ancestral lands the Andes (sierra), to urban areas the Coast (costa). Second, to remain and be confined to live in poverty, and to deal with the dominance and mistreatment of *the hacendados*.

By the 1970s Peru returned once again to a civilian government, and there was a general discontent in the population for the ongoing crisis, political disorder, and the abandonment of rural areas. This situation set up the base for the initiation of the terrorist organization the *Shining Path*. In the 1980s the *Shining Path* (SP) and the *Tupac Amaru Revolutionary Movement* (MRTA) launched an armed guerrilla struggle. By this time, the nation was experiencing the worst debt crisis, problems with drug trafficking, and strikes. In general the situation seemed unsustainable.

In summary, during the 1960s the government's vision was to modernize the countryside. The 1970s were detrimental for Indigenous communities. Paredes (2008)

emphasizes that “when community solidarity and trust is repeatedly debilitated by the humiliation of peoples’ cultural identity, organisations are less likely to emerge and to build channels to express their demands” (p. 26). As a result, in the 1980s the internal war of the SP in the Central Andes that lasted for more than 15 years, resulting in more than 70,000 victims and 75 % of the victims who were killed in the conflict were of Indigenous origin (The Truth and Reconciliation Commission, 2004). Unfortunately, as Paredes believes, this situation may reinforce the power of authoritarian leadership, which symbolically appeals to people’s ethnic resentment. In brief, all those events in one way or another influenced me, and shaped my way of knowing and being.

Where Did I Come From?

I am originally from Peru, my mother was an Indigenous Quechua Woman from the South of Peru; Ayacucho. My Father is an Indigenous Quechua man from the North of Peru; Ancash. A brief account of what happened with my parents’ life and mine is that, my parents were removed from their lands and went through countless difficult times and hardships. They did not have the opportunity to go to school and learn the Spanish language of the colonizers. So finding a job to sustain their family in other places was almost impossible. To this point, it is interesting to me to reflect in what Paucar Maximiliano (2003) found in a study done on the Incas colonial mentalities. At that time the Indios were seen as inferior and weak, unable to make decisions on their own. They were persecuted by the dominant class, especially for their physical strengths as they were needed to work in the land of the *Señores*. The mentality and behavior of the Indio was that at all times the Indio had to be sure that his *Señor* was well fed before he (the Indian) even worried about himself or his family. Moreover, we can add to this miserable condition the diseases and sicknesses that most of the

Indio were exposed to and died from. When I reflect⁵ I realize that what Paucar Maximiliano shared in previous lines has intrinsic relation with what happened in the community from where I come from. To this point, I have a more comprehensible view of why Indigenous people (not all) behave the way they do. I have seen the submissive behavior in most Indigenous Quechua people, during my years of growing up in such a controlling environment. In addition, many history books pointed out the humbleness and humility of how Indigenous people perceived and presaged their destiny. I can conclude that the humbleness and resistance of Indigenous people in Peru is well attached to history.

In brief, I considered my parents (and many others) survivors of the devastating cruel reality that many Indigenous people, their families, and their communities went through during the 60s, 70s and 80s (terrorism). I am sure that what maintains their livelihood, spirituality, and family ties are the survival of their culture expressed in their daily interaction and ways of *knowing and doing*, their connection to the land (as both of my parents were dedicated to the agriculture), the ceremonies and rituals that they strive to preserve and practice. All these pieces of their heritage helped them to cope with the uncertainty of their day-to-day activities, and also gave them and I the resilience needed to keep up with life.

Growing up as an Indigenous Peruvian Women

Before I situate myself in this research, I would like to present my respect to the traditional land of the Lheidli T'enneh⁶ and to acknowledge the hospitality of the Dakelh⁷ Nation. My respect and reciprocity moves far beyond just acknowledging people. For the

⁵ Reflect: In social work to reflect "requires a willingness to examine oneself and a desire to learn about alternative views on client situation and worker interventions" (Heinenon & Spearman, 2006, p. 266).

⁶ The translation of the word Lheidli T'enneh means "where the two rivers flow together." And T'enneh means "the people" Lheidli T'enneh has a vast traditional territory stretching over an area of 4.3 million hectares from the impressive Rocky Mountains to the beautiful interior plateau. The Lheidli T'enneh community occupies four Indian Reserves totaling approximately 675 hectares within the adjacent to the City of Prince George. Retrieved from: <http://www.lheidlik.ca/aboutus.htm>

⁷ Dakelh people is the traditional name for the Carrier people in northern British Columbia.

purpose of this research, I am indebted to the land, the environment, and the ecosystems around me. Furthermore, I am especially thankful, and respectfully acknowledge the Casma Peruvian Indigenous/Mestizo people, who approved and agreed to collaborate with me in this research. I am aware that situating myself within their culture is not only necessary, but critical. It ensures the contextual validation of my research. Another key point to consider in situating the self is the sense of place (a place where the research takes place) can also be considered as part of the research methodology since it is conceptually ethical and follows locally based research protocol. Being situated firmly with a sense of place and ethical principles in mind when researching, also "brings ownership and responsibility to the forefront" (Absolon & Willett, 2005). This is also well highlighted by Fraser (2009) who emphasized that "norms and protocols are shifting; and thus the perceived reluctance to accept research from objective observers who do not reveal their human identities as part of their research activities" (p.10).

I recognize that I need to blend (and conceptually balance) Western Science (research) with Indigenous or traditional ways of knowing. As well, being an Indigenous Peruvian woman made me more aware of a gender-sensitive perspective and essentially an added layer of feminist intuition/insight into my research. The ethical procedures and guidelines that I must follow are set out by the UNBC and the cultural protocols required by the Casma Peruvian people.

I am proud of being part of the Indigenous Quechua Peruvian People and our heritage. As I grew up in the 70s, it seems that power and the possession of resources by dominant groups was an indicator of the manifestation of power-relations that was ingrained in people's views at the time. As I recall, when we were children (my siblings and brothers

and sisters in the community⁸) we did not have anything; the dominant groups took almost everything from us (including the dignity of our fathers, mothers and older siblings). We were disposed from our lands; we children witnessed the emotional, physical, sexual, and cultural abuse⁹ that the dominant groups imposed on our parents, and the constant humiliation of our elders, and of the rest of the community.

My mother had eight children (myself being the second oldest daughter) working on the land on our traditional crops of sweetpotatoes (*Ipomoea batatas* (L.) Lam.), potato (*Solanum spp.*), yuyo (brassica-weed), and corn (*Zea miz*). After the harvest season I saw my mother bowing-down presenting her thankfulness and respect to the land (Mother Earth) in Spanish called “*pago a la tierra*” and in Quechua (Indigenous language) Mother Earth is called *Pachamama*. I often observed my mother and remember her being so tired, and her commenting on feeling sad, because she could not let ‘Mother Earth’ rest, because people were hungry. She also mentioned, she couldn’t follow what her father taught her, of giving time to the land to re-energize and rest. I could see my mother’s tears, and as a little six year old, I remember following my mother’s cries, crying with her to support her. At that time, I didn’t know the significance of what she was doing or how powerful it was, but there was a connection that she had with the land, and the little we had.

In this context, my parents worked all day and very hard on the land, but it was no place to call home, because all the land belonged to the hacendados. No complaints or any type of subordination was allowed; otherwise, the man called mayordomo/caporal (manager) would throw the peasants out from the hacienda. In reality, all the peasants¹⁰ (also my

⁸ The brother and sister I am referring to are the children of the other members of the community.

⁹ Cultural abuse, in my personal opinion is when someone is not allowed to speak his/her language, to practice his/her cultural traditions and customs.

¹⁰ Peasant (s) is another term that refers to the farmer (s) or people who work in agriculture.

parents) had too many children, did not know how to read and write, and did not manage the Spanish language well. In those days, working in the hacienda was the only secure way to bring food home. One of the delightful memories I had, is when we children had a very special day in the chacra called rebusque (searching). It consists of finding whatever was left behind after the main harvest season of sweetpotatoes/potatoes. This was the day when we were allowed to go to the chacra, and feel free running behind the tractors' blades checking if there were remains of sweetpotatoes/potatoes that no one but us liked, because they were low quality and too small to be accepted in the market. At the end of that day, we (children) were so proud to show our parents the sacks of sweetpotatoes /potatoes we had collected.

On the negative side, I remember the names of the land would change as new people from the dominant group arrived to the hacienda. We were not allowed to be close to them, to their family, or to their children. We were the *others*. To put it in another way, we were different and not like them. The most difficult event that is still etched in my memory was when they screamed at my dad, and humiliated him in front of his wife and children. I remember I used to cry seeing my father's eyes all watered because he was also crying. I did not know what to do, I just wanted to escape, but instead I hid my face and cried on him while holding his legs.

What Is in Store for the Future?

As I am going through this new academic experience and I started my journey as a researcher, I was engendering my own identity and valuing what I could bring to the Indigenous and Mestizo Peruvian people and other Indigenous people in the world. Since my social, cultural, and spiritual identities are situated in both Peru and Canada I must recognize and be aware of the possibilities and limitations of my narratives and representation of my

Peruvian Indigenous culture. Thus, this is very important as it is needed to establish the criteria of fairness “a balance of stake holders’ views” (Creswell, 2007, p.213)

What is in store for the future? Now, in 2011, I am getting my education, and with it the knowledge to understand so many dynamics and hidden particularities especially with relation to power and oppression. As an illustration, I sought an academic vision about oppression in some of the lectures I did in the social work program. We studied the work of some authors such as Sullivan, Steinhouse, and Gelfand (2000) in their opinion “...oppression exists and limits the extent to which many people are able to achieve their goals.” (p. 23), as well as, Mullaly (2007) who explained that to understand oppression, we practically have to understand what oppression *is not*. Similarly, Freire (as cited in Mullaly, 2007) pointed out, to distinguish what is, or is not oppression, we need to look at the social context of a particular restriction, limit, or injury. Indeed, people maintain and nurture oppression through their daily lives and activities. In fact, this dialogic invocation from the previous authors is intended to address my awareness on power inequalities and oppression. Again, I am gaining new conceptions, perceptions and new knowledge of things that I was never aware of. Sometimes, I think I am missing so much as I try to capture all these new conceptions while using this language that is not mine. However, I am also feeling that I am starting to uncover knowledge, and revitalizing fundamental conceptions.

In summary, this new form of seeing, conceptualizing and sensing the world in regards to power and oppression, enables me to develop and elaborate a new understanding of thoughts and feelings of how the impacts and effects of inequalities, atrocities of poverty, social exclusions, discrimination, and exploitation affects the poor and the more vulnerable groups, to which I was exposed in my childhood. I am also aware that oppression and other

forms of discriminatory mechanics are probably internalized in me. To put it in another way, as a social worker I should be vigilant about *internalized oppression*, how it can affect clients, social workers and anybody in general. The problem is that the oppressor does not have to exert anymore damage or pressure; the oppressed do it to themselves and to others. Unfortunately, I have to recognize that *oppression is institutionalized in society*, and Sullivan et al., (2002) clearly confirms this view when he argues that internalized oppression comes through the media, schools, religious institutions, family members, friends, and other forms of socialization.

This brings me to say that whatever I have in store for the future, I must be aware of what oppression and power entails. I try daily to be aware of those confusing feelings and emotions, and to find new channels that are more constructive and positive. I also remind myself that I am a social worker; I am one of the representatives of the helping profession.

Situating the Researcher

Qualitative study and research is a form of inquiry in which researchers make an interpretation of what they see, hear, and understand. The researchers' interpretation cannot be separated from their own background, history, context, and prior understandings. After the research report is issued, the readers or whoever becomes interested in reading the report, make their own interpretations. As a result, we can expect that in many cases probably those interpretations can be different (agreeing or disagreeing), or offering yet other interpretations of the study. Being open and respectful in all these events is a must.

It is important to clarify that I have lived in Prince George for almost two years. Previously to that, I lived in Central America, Costa Rica in small Indigenous communities such as Shiroles. I also spent time sharing part of my life with the BriBris and Cabecares

(Indigenous groups from Central America) for over six years, which enriched me in all dimensions of my life. As such, my education and life experiences are deeply embedded in me and have influenced who I am now. I am also aware that my life stories of being marginalized and oppressed have created ambiguous and contradictory feelings that I have internalized. Viewing this then, I have to acknowledge that all those experiences can influence the narratives that I seek to recreate and interpret in relation to my research.



Figure 4. Sechin Temple. *Searching for the Historical Past of A/K/C*, By Sudario. 2011)

CHAPTER THREE

Literature Review and Historical Background

I was surprised to find tears welling up from my heart through my throat “Do I understand about cycles, death and rebirth? Of course. Transition is the nature of the work I do every day. Is the time for these traditions to return to the ether? ... These are people who touch the earth, live close to it, who understands the nature of connection of all things, energy, sharing in community, a global consciousness. They hold these threads sacred in their now fragile traditions These experiences are precious and will perhaps soon border on extinction.

(Woody, 2007, para. 12).

Opening

¡DESPERTAD!

¡Despertad! Hijos de los Inkas, ¡Gritad!

Voltead vuestras miradas con la frente bien en alto,

Que vuestros gritos se escuchen en todos los pueblos del mundo.

Va amaneciendo el nuevo día, Nuestro Padre sol os saluda al verlos aqui reunidos,

Luciendo cual radiantes rayos Luciendo cual radiantes rayos como en tiempos buenos,
del glorioso Tawantinsuyu; ¡SUFRIDOS TRABAJADORES!

... Despertad Trabajadores! Romped las Cadenas que os Oprime!

AWAKEN!

Wake up! Children of the Incas, Shout!

Turn your eyes this way with your head held high,

so we can be heard around the world.

*The new day is beginning. The sun greets you, as a father looking upon his children gathered
below him,*

*His sparkling light shines upon you as it had in the good times, of our glorious Kingdom of
Tawantinsuyu; Upon you workers who have suffered too long!*

... Wake up Hard Working Men! and Women! Break the Chains of Oppression!

By Antenor Peralta.
Translated by Ada Gibbons,
(Both were born and raised in the mountains of Perú)

Introduction

Indigenous people, who grew ancient storage roots such as A/K/C, still work the fields and practice traditional agriculture. They also found spiritual nourishment through practices of mediation and deep personal connection with a universal spirit and nature in their chacras. Traditional Knowledge for Peruvian Indigenous peoples (and many other Indigenous groups in the world) has over time been transmitted through oral histories, and through the expression of music, arts, as well as, spiritual rituals and ceremonies that enabled farmers and their families to maintain this holistic connectedness with Mother Earth (Pachamama), and Mother Sea (Cochamama) in strengthening healing processes.

In this chapter, I will begin to articulate a broad source of knowledge including culture, traditions, life experiences, cultural contexts in identifying (if this is the case) ancient adaptation strategies and the role and importance of the social, cultural, and spiritual connectedness in association with A/K/C. My main goal is to set out the key themes of the historical background of the Peruvian pre-Columbian civilization. In this context, the incorporation of historical factors will provide the readers with an overview of the effects of colonization in the life of Indigenous and Mestizo people. In a similar manner, this study builds on the daily survival strategies of Peruvian communities and strengthens their resiliency, rooted in the social, cultural and spiritual traditional planting practices (knowledge) of A/K/C. Indeed, it is my hope that this chapter will inform, enrich, and bring perspectives to enhance generalist social work practice. For this reason, Traditional Knowledge must be preserved and conserved (made available) for future generations.

Peru: The Geographical, Historical and Cultural Contexts of Indigeneity

Peru is the fourth largest country in Latin America and geographically is extremely diverse: the “coastal area (11% of the surface area), the Andean region (34%) and the Amazonian basin (55%),” (European Commission, 2007, p.13). Culturally, Peru is considered a multi-ethnic country, and has a number of complex bio-geographic and ecologically distinct regions. The three main broad regions are: Coastal (Costa), Mountain (Sierra), and Jungle (Selva). There is also a direct correspondence between the three natural regions and the eight ecological regions. The Coast contains the regions of Chala and Yunga Maritima. The Mountain includes the regions of Yunga, Quechua, Suni, Puna, Janca and Yunga Fluvial. The Jungle overlaps with the regions of Rupa – Rupa and omagua. (Bitran, Ma, & Ubilla, 2000). The Andean range, is where some of the highest peaks in the world are to be found, and a great many high plateaus. The regions of cultivable land are at an altitude of between 2,400 and 3, 400 meters and their names often recall important Peruvian cultures, Cuzco, for example, was the political and cultural centre of the Inca Empire, while in the Titicaca basin the Tiawanaku culture once flourished.

Historically, according to Samaniego Roman (2010), Peru is divided into two periods: The 'Autonomous' (12 000 BC to 1532 AD) and the 'Dependent' (1532 AD to present day). Archeological evidences confirmed that the Ancash Region is where the province of Casma was located, and human habitation started 10 000 BC. Archeological evidences about these occupancies (around 4000 BC to 6000 BC) were found in places such as Mongoncillo, Pampa Las Aldas, Cerro Prieto and Huampucoto (sites discovered by the arqueologist Samaniego Roman). All this different manifestation according to the chronological chapter of the *Museo Nacional de Arqueologia y Antropologia de la Historia del Peru* belongs to the

lithic period. Meanwhile, Uhle (well known as the patriarch of the Peruvian archaeology) found mounds of shells from primitives fishermen in different coastal areas. From the above evidence, Uhle suggested the first inhabitants were hunter-gatherers and diverse fishermen. In other words, they made a good use of the ocean and river basin of the Casma River. Moreover, other evidences in the Cueva Guitarrero (8000 BC), suggested the occupants initiated the domestication of plants, followed by the horticulture and agriculture practices. (Ugent & Petersen, 1988). In regards to potatoes and A/K/C, historically, the discovery of archaeological remains of the actual tubers and stored roots in Peru, contributed greatly to the lines of evidence that potato and sweetpotato were grown together. Under those circumstances the oldest known samples of potato and A/K/C, were found to date to the Neolithic Period and perhaps to the end of the last Ice Age, or 8000 BC (Engel, 1970). These tubers were discovered in caverns at Chilca Canyon, in the south-central area of coastal Peru. The same author commented that these highlands caves, known locally as “*Tres Ventanas*” are located 65 km southeast of Lima at an altitude of 2,800 meters. Archaeological remains of other Peruvian crop plants such as the common bean, lima bean, pepper, *oca*, and *olluco* were also known to be of great antiquity, discovered in the mid-Pleistocene Age (8000 BC) at the Guitarrero Cave in the highland areas of the Department of Ancash (Kaplan, 1980; Smith, 1980 as cited in Ugent & Peterson, 1988). My nominal assumption is that in view of the above studies, Indigenous people had already domesticated a number of plant species by the end of the last Ice Age, including tuber and roots crops such as potato and sweetpotato. Today, the preserved remains of these two food sources found in the Chilca caves furnish us with clues as to the importance of these crops in the Peruvian coastal area as early as 10,000 years ago, at a time when climatic and environmental condition worldwide were very

different from what they are today. Furthermore, Ugent and Peterson (1988) point out that Casma Valley contains “the principal sites (Pampa de las Llamas, Huaynuma, and Tortugas among others), where archaeological potatoes and sweet potatoes have been collected” (p.4). Not to mention Casma Valley which is located 360 km north of Lima and one of the more impressive ruins in this valley is situated at “*the Pampa de las Llama*” This Early Ceramic site, which dates from the Initial Period (1800 BC-1500 BC), is located inland on the Moxeke branch of the Rio Casma” (p.4). Thomas and Shelia Pozorski (as cited in Ugent & Petersen 1988), the two principal excavators of the Moxeke ruins (1800 BC to 1500 BC), explained that the two large mounds founded in this site were probably used for administrative or religious purposes, while the smaller and extensive area of small mounds and home sites probably functioned as a “storehouse for the potatoes, sweet potatoes, and other crops that were being grown in a nearby, irrigated oasis” (pp. 4-5). Even though archaeological, ethnological, and biological investigations were done, it is still not possible to know *where* and *how* the Peruvian agriculture actually started. In a broader context, early inhabitants started to establish the foundation of the Indigenous civilization, which included these processes of domestication of native crop species. As a result of these successes with their crops, dwellings were built and families started to settle to build ceremonial centers (e.g., Kotosh¹¹), and began the construction of their (knowledge) in relation to their traditional planting practices.

¹¹ Kotosh was unearthed by members of the Tokyo University (started in 1960) from the eastern slopes of the Andes. It is located close to the department of Huánuco. This ancient temple dates back 4000 years BC. It is considered contemporary ancient strata of Huaca Prieta (Horkheimer, 2004).

To summarize, Horkheimer (2004) recognizes that the former Peruvian farmers managed to take advantage of edible plants in sufficient quantities under extremely adverse conditions. He also pointed out that it was not the Incas who dominated agriculture or the great discoverers and creators of culture: The Incas knew how to take advantage of the elements developed by previous ethnic groups. However, the Incas also knew how to organize people and entire communities towards collective or collegial work to improve production, the use of the wasteland, and to instill nurturing relationships among inhabitants of the extensive and varied territory.

2012	Republic	Actual President		Ollanta -Humala
2011		Contemporary Peru		Garcia
1968		Democratic -Formality		Velasco
		Aristocratic Republic		Leguia
1930		Debacle & Reconstruction		Pierola
1895		Prosperid Falaz		Prado
1866		Foundation epoch		Castilla
				Bolivar
1842				
1824	Viceroyalty	Independence		S. Martin
1811		Abascal Casa Borbon, ilustración & the revolutions Tupac Amaru		
1707		Casa de Austria		
1569		Conquest	Toledo	
1532			Pizarro	
1533	Pre-Hispanic epoch	Inca EmpirePachacutec		
1470		Regional States		
1100		Huari		
700		Regional Development		
100AD		Formative	Superior	
400 BC			Middle	
1100			Inferior	
1500		Archaic	Superior	
2700			Middle	
5600			inferior	
7600				
9000	Lithic			

Figure 5. Timeline of Peru History, adapted by Orcherton, 2011. Information source: Historia del Peru Lexus. 1999).

Peru: Colonial Influences of Indigenous People

Historically, Peru History is divided into Colonial (Epoca Prehispanica), Viceroyalty (Virreinato) and Republic (Republica) periods (See Figure 5.). Mariategui (1928) in his book *7 ensayos de la realidad peruana* gave a brief summary of what occurred during the Spanish conquest of Peru (see figure 5: 1532-1569). They conquered by means of forced subjugation, humiliation, domination and in many cases, terrorized the Indians with their weapons, horses and physical appearance. The Indians believed that the Spaniards were supernatural beings, and were therefore, predisposed to being obedient, and subservient.

The political organization of the colony almost exterminated the Indigenous race. The Viceroyalty established a brutal regimen of exploitation since its main objective was the extraction of precious metals. During this time this became the Spaniards objective; the gainful acquisition of economic wealth and power, whatever the consequences. As well, the inhumane working condition of the Indians, and the mistreatment, as well as famine and disease resulted in their extermination, to the point of near extinction. The Inca's population before the arrival of the Spaniards was close to 15 million. After years of conquest this population was reduced to less than a million. During the Republic period, the situation worsened for the Indigenous populations in many of the provinces in Peru, even though the Republic created laws and decrees in favor of the Indians (for example the distribution of the Land, the abolition of slavery). These laws or decrees were almost impossible to put into practice as the colonial landowner (the aristocrats at that time), still controlled land ownership. In other words their feudal rights were intact, and the situation of the Indian did not change (Mariategui, 1928).

Reviewing history helps us to recall and be self-aware of the condition of Indigenous people and how colonial influences were embedded in the minds and attitudes of the actual government leaders at the time. Meyer and Maldonado (2010) remind us that “the formation process of the European nation-state was based on the expansion capacity of each one of its political entities, while during that time period our nation and our state formations were devastated and destroyed, precisely by that same European expansion.” (p. 284).

The colonial influence and legacy are the expressions of the feudal economic system and we can see it as manifested in the extensive land owned by few people in power. There is still a large landed state and poor pay (if not) of Indigenous/Mestizo people who worked/works in those lands. We must recognize that “colonialism disorganized and destroyed the Inca agricultural economy ... the ownership of the land determines the political and administrative system of the nation” (Mariategui, 1928, p. 47). For Rostworowski De Diez Canseco (1999),

the Andean world was too original and different from the 16th c. and not even thinkable for European men to understand this reality. Their main attention was enriching their countries' coffers, achieving social status and maritime honors, all in the name of Christianity that evangelized the Indians to their eventual demise. “There was an absolute abyss between Andean thought and the Spanish criterion, unfortunately, this abyss still continues separating members of the same nation.” (Rostworowski de Diez Canseco, 1999, p. 4)

The Indigenous peoples origin, precluded by Rostworowski (in my view), is still present in many of the ancestral teachings, especially related to the traditional planting practices, rituals and traditional activities; however, it is also important to recognize the constant threat of cultural degradation and erosion (acculturation). Simultaneously,

Indigenous communities in particular, generally reject assimilation into the Western Science culture (Aikenhead, 1996). They had a tendency to become alienated from Western Science, in spite of it being a major global influence on their lives. Compared to Western Science, for example, most Indigenous people have divergent worldviews, which are more integrated within a collective, community mindset and viewed in a holistic (all inclusive or qualitative) sense. This influence has caused a fundamental shift away from traditional approaches to community problem-solving, emphasizing the need to strengthen family and community-based resilience. Mom Hau (2009), states that accounts of “the colonial period reinforced Peru’s pre-Colonial origins” (p. 140). Spanish colonialism as a period of foreign (or invasive) domination emphasized that Spanish authorities faced considerable resistance from below.

The Mestizo People of Peru

Peru Country Review (2007), describes the ethnic composition of Peru (today) as “about 45% of Peru's population is Amerindian (Indigenous people), while 37% are Mestizo, 15% are white and 3% are black, Asian or other” (p.3). With this in mind, over the past 500 years, according to Smith and Phinick (n.d), there has been a long process of inter-cultural mixing, creating the Mestizo of part-American Indian, part-European heritage. Today the majority of Peruvians would fall into this category. Similarly, Mom Hau (2009) considers that the underpinning of a homogeneous national culture appeared to be *mestizaje*, the process of biological and cultural mixing initiated under Spanish rule. “The three centuries of Spanish domination were enough for a new race to emerge within the territory of New Spain, ... a result of the mixing between conquerors and the conquered” (p. 140). This new race that inherited the language, religions, and customs from the Spaniards and the sense of resistance and stoicism from Indigenous people, are the Mestizos. Above all, Paredes (2008) in the

CRISE's Perception Survey (2005), confirms that racial and cultural mixing has occurred and this is noticeable (mainly in the coast). Indeed, in Peru there is a "distinctive hierarchical organized cultural and racial traits" (Paredes, 2008, p. 19). The same author states that Mestizo is a "social constructed term by the neo-oligarchic movements" (p. 22). Her views are based on the end of 1960s, when Mestizo is referred to a "cultural and *class-based* process of acculturation" (p.22). In that case, mestizaje is a process of improvement in the social status "a scaling up" (p.22) and escaping from the Indian situation of exclusion, alienation, and exploitation. As a matter of fact, to be a Mestizo is to move out from a life of disenfranchisement to a life of citizenship and progress throughout the learning of Spanish, education and migration to urban centres. Lastly, for Meyer and Maldonado's (2010) view "Mestizaje is de-Indianizing" (p.196).

Pre-Incas and Incas Relation to the Land: Agriculture

Since the time of the conquest there was the concept that the Peruvian pre-Hispanics became "more gardeners and farmers" (Cabieses, 2004, p. 4). These pre-Hispanic farmers dealt with every plot of land with dedication and true love, "feeding their plants, as one feeds a child; who grows using their own hands or tools only manageable with the hand" (Cabieses, 2004, p. 41). Often, they had to sustain their entire family with less than a hectare of land, and this forced them to get the maximum utility from the soil. Compelling evidence of this is presented by Muñiz Ortega (2009), who informed us that the only tool the Indigenous agricultures used, at that time, was the chaquitacla.¹² Under those circumstances with the taclla (as commonly called), they have to produce enough to feed their family, to contribute to the state and the sacerdotal class. To achieve this it was necessary to work the

¹² *Chaquitacla* (or commonly named *taclla*) used in the Andean Highlands specifically for the cultivation of potatoes and other tubers.

land collectively and in cooperation. Meyer and Maldonado (2010) emphasized the Andean vision of working collectively; this is understood as Ayllu¹³. The view of Ayllu is well embraced by Valladolid Rivera (n.d) when he states that to understand this relation, we must understand the Andean conception, which is embedded by the way the “Andean ‘sees,’ ‘feels,’ and lives his or her reality” (p.57).

Furthermore, Bolin (1998) in his study describes that the Vilcanota valley (in Quechua Willkamay Valley_ Willca means “Sacred” mayu means “ river”), which lies far below Chillihuani at an altitude between 3,100 and 3,300 meters. At one point this valley was densely populated and of considerable importance already in pre-Inca times, as indicated by the ruins from the Wari civilization found there. The Vilcanota Valley played an outstanding role in the development and elaboration of Inca civilization. Archeological remains reveal the impressive achievements of the ancient inhabitants of these Andean regions. In addition, to the reports from early chroniclers as well as the oral histories of today’s inhabitants that verify the grandeur of these past times civilization. It is impressive (personal visit) to see enormous structures in stone and adobe, practically an earthquake-resistant architecture, outstanding irrigation works, and magnificent agricultural terraces. Ynca Garcilazo de la Vega Chimu Ocllo is considered the father of the Latin-American literature. In his publication of (1896/1916), he described how the Incas divided the land and built the Andes terraces:

... They [the Yncas] supplied the water with great ingenuity, and no maize crop was sown without being also supplied with water. They also constructed channels to irrigate

¹³ Ayllu: “From the Andean point of view, community is understood as ayllu, a collectivity made up of human beings but also of the world beyond humans” (Meyer & Maldonado, 2010, p. 24).

the pasture land, when the autumn withheld its rains, for they took care to fertilise the pastures as well as the arable land, as they possessed immense flocks. These channels for the pastures were destroyed as soon as the Spaniards came into the country. (If you go to Cuzco and others parts of Peru you can still see these remains).

Having made the irrigation channels, they leveled the fields and arranged them in squares, so that they might get the full benefit of the water. On the sides of the mountains, where there was good soil, they made terraces so as to get level ground, as may be seen this day round Cuzco and all over Peru. These terraces or *andenes* consisted of three walls of strong masonry, one in front and two at the sides, slightly inclining inwards, as are all their walls, so as to sustain the weight of the earth, which was filled in until it reached the top of the walls. Over the first *anden* they constructed another narrower one, and above that another still smaller. Thus they gradually covered the whole mountain, levelling the ground after the manner of a flight of stairs, and getting the use of all the land that was suitable for sowing, and that could be irrigated. Where there were masses of rock, the rocks were removed and earth was brought from elsewhere to make terraces, so that even such a site might be made useful and not lost. The first terraces were of a size conformable to the position of the site, capable of containing a hundred to two or three hundred fanegas (1.1 acre) more or less; and the second were smaller; and so they went on diminishing in size as they ascended, until the highest only gave room for two or three rows of maize. So industrious were the Indians in all work tending to enlarge the extent of the land capable of yielding maize. In many places they led an irrigation channel for fifteen or twenty leagues, to irrigate only a few fanegas of maize land, that it might not be lost.

Having thus increased the quantity of arable land, they measured all that was contained in each province, every village by itself, and then they divided it into three parts. The first part was for the Sun, the second for the King, and the third for the people. These divisions were always carefully made, in order that the people might have sufficient land for their crops; and it was a rule that they should rather have more than was requisite than too little. When the people of the village or province increased in number, a portion was taken from the lands of the Sun and of the Ynca for the vassals. Thus the King only took for himself and for the Sun such lands as would otherwise remain desert and without an owner. Most of the andenes belong to the Sun and to the Ynca, because the sovereign has ordered them to be made. Besides the maize lands which were irrigated, other unirrigated tracts were portioned out, in which they sowed pulses and other crops of much importance, such as those they call papas, ocas, and años. These also were divided into three parts: for the people, for the Sun, and for the Ynca. But as they were not fertile, from want of irrigation, they did not take crops off them more than once or twice, and then portioned out other lots, that the first might lie fallow. In this way they cultivated their poor lands, that there might always be abundance.

The Maize lands were sown every year, because, as they were irrigated and manured like a garden, they were always fertile. They sowed a seed like rice with the maize, called quinoa, which is also raised in the cold lands (p. 3-5)

It is fair to say that "a culture cannot exist without the evolution of the agriculture" (Cabieses, 2004, p. 37). When the Spaniards came to our shores, they saw with surprise that cultivated soils, especially those of the coast, were subjected to the intense use of fertilizers, mainly

guano and remains of marine animals. This complemented that the Andes has been home to Indigenous communities who had practiced farming in the valley since early pre- historic times.

The Quechua people are speakers of a “pre-conquest language who have shown surprising persistence through 500 years of subordination and cultural impact” (Rolph, 2006, p. 2). There is evidence that the Quechua and Aymara languages (suffer some modification/adaptation), continue to be the languages that the majority of Indigenous communities still use as a mean of communication. Indeed, every language reflects the mentality and cosmovision of its people. It accompanied the necessities, goals and problems of the community in a given time and geographical area. For instance, Quechua as Yábar-Dextre (1978) states “is a language that was spoken by the Incas and is still spoken by their descendants in the villages and towns of the Peruvian mountains.” (p. 406). Therefore, this goes parallel with the preservation of the traditional planting and farming practices. The notably-terraced hillsides (*Andenes*) are an example of adaptation to hillside farming and superlative soil and water conservation. Farming is life-giving and its practice has been passed on from generation to generation, just as language has. In fact, the traditional languages for transmission of successful farming strategies in the Andes are Quechua (Rolph, 2006), and Aymara.

To conclude briefly, I believe it is important to re-state what Cabieses bravely defended before he passed away in 2009 “... Peru was conquered when the Spanish arrived, but was not discovered ... just to the eighteenth and nineteenth centuries began to discover and explore the wonders of the Inca civilization” (Cabieses, 2004, p. 1)

Layers of Development: Pre-Inca and Inca Cultural Groups

I carefully planned and constructed the following diagram (see figure 7). My main objective is to search for (and find) cultural meanings of the Casma Peruvian ancestry and genealogical background. The historical information in this chronological cultural chart, specifies the cultural development (coastal culture periods) of the existence of millenary cultures before the Inca cultural period (1532 DC). According to the researchers' interpretations (using radiocarbon-

measurements), when describing stages and periods of Peruvian civilizations, over the past two decades, there has been a marked increase in culturally-based archaeological research in Peru, which has generated different chronological cultural charts.

Unfortunately, as I believe, there is no official declared chart emitted by the



Figure 6. Casma/ Sechin Temple. Conversation with archaeologist: Lorenzo A. Samaniego Roman. By Orcher-ton, 2011.

National Cultural Institute of Peru (INC). Needless to say, this situation had created misunderstanding, misleading information, and confusing denominations from diverse archaeological sources. However, it is also important to recognize authors such as John Howland Rowe, Thomas C. Patterson, Edward P. Lanning, and Junius B. Bird, Richard P. Schaedel, Gerdt Kutscher, Dorothy Mendel, Patricia Lyon, among others had made a great contribution in the development of invaluable chronological framework of the pre-Inca and Inca millenary history.

As mentioned in previous chapters of this thesis, one of my goals is to highlight diverse voices and motivations of the Casma Peruvian people. I was fortunate to personally meet the Casma archeologist; Lorenzo Alberto Samaniego Román, who has developed the *Ancash, Chronological Cultural Chart, 2010*. To recognize the valuable contribution to his community, I decided to use the information from the chronological chart he developed in the diagram: *Layers of Development* (see Figure. 7). In addition, a more detailed description has been created in relation to the cultural sequences of the Peruvian Cultural development in Figure 8 (Appendix F, p. 226).

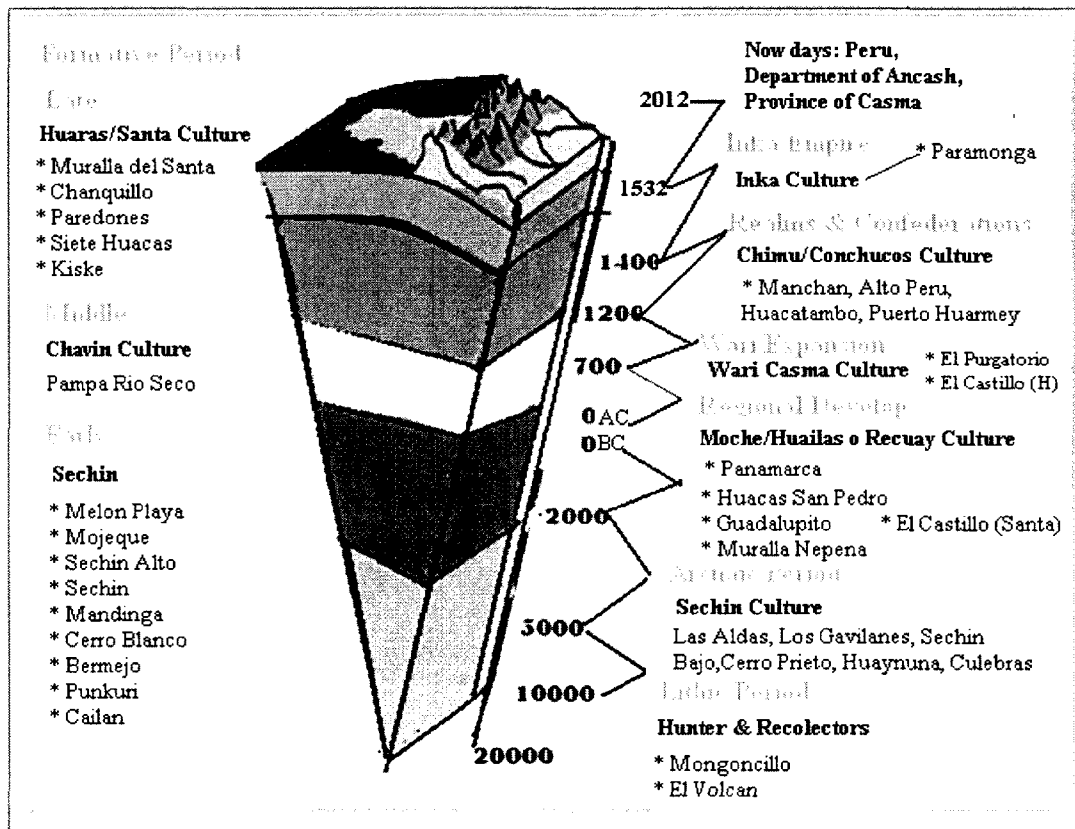


Figure 7. Layers of Development: Pre-Incas and Incas Cultural Groups. By Watson J.M. (design)¹⁴Casma, 2010). U.S. Geological Survey.[Photographer]. (1999). Inside the earth [photograph]. USA.

¹⁴ The design was retrieved from <http://pubs.usgs.gov/gip/dynamic/inside.html>. It has been modified by Maria Orcherton with the permission of the author. The design is complemented with the information from the *Cultural Chronological Chart, Ancash, 2010* from the Archaeologist Samaniego Roman.

Gods and Deities in Agriculture

The origin of the first Incas from where the other Incas King descended recognized Manco Ccapac and Ccoya Mama Occello Huaco as the legendary founder of the Incas dynasty. They were siblings' children of the Sun and of the Moon, as Garcilazo de la Vega (1869/1916, p. 70) said "our parents." Knowing from where our first father and mother came from and the teachings they displayed in their first contact with the land, is deeply related to the traditional ceremonies, rituals and traditional planting practices that are still practiced in some communities today. Agriculture fertility has an intrinsic relation with the existence and presence of Pachamama. Steele (2004) states that "Pachamama is the universal deities of the land and its fertility is considered the living earth ... and the matrix from which life arises" (p. 93). The attitude of reverence and respect in the way the Incas worshipped their Gods, is described precisely by padre Cobo (1580-1657) as he said:

while facing their Gods or their temples and guacas¹⁵ they lowered their heads and their bodies in a profound show of humility, and they would stretch their arms out in front of themselves, keeping it parallel to each other from the beginning to the end, with the hands open and the palms out, a little about the levels of their heads. Then they would make a living sound with their lips." (p. 118)

There is enough evidence that the Incas were not monotheist, however Wiracocha or Illa tecce, (eternal light) was the supreme entity an invisible God. Garcilaso de la Vega (1896/1916) mentioned the Incas worshipped the *things*¹⁶ that provided them with some benefits. For instance, the river was considered a "great fountain ... which supplied water

¹⁵ Guacas: also written as Huacas were considered deities in the Incas times. Today this belief is still present in some communities.

¹⁶ Things according to Ynca Garcilazo de la Vega, refers to elements the Incas have in their environment, which they interact with daily and help them to go ahead with their daily duties. (This is my personal interpretation after reading those passages of the Chronicles.)

for irrigating their crops” (p. 49), they worshipped the earth and called it Mother, because of its giving of life providing fruits; others adored the air, for its gift of breath to them; others liked the fire for its heat and because it cooked their food. Others adored the corn (maize), for its nutrition and usefulness. On the other hand, Ynca Garcilazo de la Vega, also mentioned that there were other people, such as the Chirihuanas, and the natives of the Cape de Pasau¹⁷ who do not worship anything high or low, “neither from interested motives nor from fear ... but who lived like beasts or worse” (p.50) because the doctrine and instruction of the Kings Incas never reached them. Furthermore, Bustos (1983) described with allegoric narration how “the earth was called Pachamama” or Mamapacha, both meaning, Mother Earth. The respect was done in their *heredades y chacaras* (chacras) where they locate a stone (piedra luenga), where they prayed, asking her to maintain and keep the fertility of the land and their cultivars. If the land provided them with such a quantity and quality of crops, worshipping them for these bounties, was even greater. Through the literature the earth was recognized as a deity of fertility with female virtues and defects. Chronicles also give a visual description of a thick woman naked with braids all over her breast, other times earth was represented as a very large potato with many eyes. Earth was offered many gifts. They showered her with chicha so she can taste the corn liquor (fermented maize-drink); in this sense the thankfulness came back to the ones who did it.

Rituals and the Agrícola Calendar in the Past

It has been said that there is not much known about the existence of Inca calendar. Instead there is a simple count of lunation, emphasizing the notion that this way of measurement was based on oral knowledge. The majority of the staple foods (potatoes, sweet potatoes and wild varieties) we have today were cultivated during the Incas’ time. In

¹⁷ Pasau: These two provinces were located at the northern and southern extremities of Peru.

addition, maize was considered a sacred cereal with magic attributes and an essential food to the Tawantinsuyo¹⁸ people. It is important to realize that with maize, they prepared a fermented beverage for special celebrations and a reliable source indicates that maize was important because it was offered to their God in their rituals (Meneses, 1992). This special appreciation for maize was for the effort and times its adaptation and acclimatization required in the different geographical zones of the Tawantinsuyu. In regards, to the potatoes, sweet potatoes, among other crops and medicinal plants are mentioned as nothing distinctive because of their abundance and variety.

Another key point is that because of their oral tradition, written documents on the Incas are not available as a textual testimony of what happened during the pre-Inca and Inca times. The majority of the existent literature was from the time the Spaniards arrived in America. Generally speaking, their documents chronicle their versions and interpretations of what they had observed and collected, and information that had been passed to them by other means. Furthermore, Meneses (1992) recognized that there are many assumptions related to how the Incas managed such extensive land-areas within variable or diverse climates to maintain yearly production. Indeed, to manage their agriculture successfully the Incas had developed a complex agrarian calendar. A Cuzquean Monarch Pachacutec (Yupanky Inca) was characterized by “his singular strategy to conquer new lands and his ability to redesign the Incahuasi or Inca house; an administrative, politic, religious, and military center” (Robles Vicente, n.d, p.2). Further, he erected stone pillars that served as a solar indicator of the

¹⁸ Tawantinsuyo (in Quechua “ Realm of the Four Parts”), also spelled Tawantinsuyu, territories spread over parts of Ecuador, Peru, Bolivia, Chile, and Argentina that, by the 1500s, were all part of a single Inca state. Retrieved from: *Encyclopædia Britannica* <http://www.britannica.com/EBchecked/topic/584502/Tawantinsuyu>

seasons. Garcilaso de la Vega (1869/1916) emphasized how the Incas understood the yearly movement of the sun, the summer and winter solstices. A calendar year in the Incas language was *huata*, and common people understood year according to how many times they harvests:

...they had eight towers on the east, and other eight on in the west side of the city of Cuzco, placed in double rows, four and four, two small ones of three estados, +¹⁹ a little more or less, in height, between two other high ones. The small towers were eighteen or twenty feet apart, and the larger ones were at an equal distance on the sides....The high towers were used as observatories, whence the smaller ones could be more conveniently watched; and the space between the small towers, by which the sun passed in rising and setting, was the point of the solstices. The towers in the east corresponded with those of the west, according as it was [*sic*] the summer or winter solstice. +²⁰

To ascertain the time of the solstice, an Ynca was stationed at a certain point, when the sun rose and set, who watched whether it threw its shadow between the two small towers, which were on the east and west sides of Cuzco. And in this way they were apprised of the astronomical time of the solstices....They assigned twelve moons to each year, yet,...they knew how to adjust one to the other, by observing the movement of the sun by the solstices, and not the moons. Thus they divided one year from another, regulating their season for sowing by the solar and not by the lunar year. (Garcilazo de la Vega, 1869/1916, pp. 177-178)

¹⁹ +Estados refers to the height of a man.

²⁰ Garcilazo de la Vega, used sign + (this sign is in the original writing I assume that) the towers served them for taking azimuths, and by measuring their shadows they ascertained the exact time of the solstices. (Garcilazo de la Vega, 1869/1916, p. 116).

This type of solar clock was constructed in different sites of the Inca Empire. The priests were the ones dedicated to the study of all changes, projections and shadows caused by the sun. They were also informed about an “adequate time” for sowing and harvesting. They used the Khipu (Quipu) to register the cyclical sequences of the rainy and the drought seasons. Moreover, the Agrícola calendar and the religious calendars seemed to coincide, which was probably the reason why the time of sowing and harvesting were accompanied by rituals and ceremonies. Of course, during these activities, prayers with high respect and devotion were presented. However, it did not mean that they were waiting for the divinity to solve their problems. The Inca were presented as an authority who knew how to deal with issues of land use and scarcity of water for the crops.

In extending our view Guaman [Huaman] Poma de Ayala (1613/2009) describes how the time was divided into years, months, and weeks. The week contains 10 days and the month thirty days, with occasional extra days. The duration of the year was based in accordance with the movement of the heavenly bodies. They had knowledge of the sun being distant from the moon; they have an understanding of the eclipse. The same author emphasized how the Incas knew how to calculate the exact hour. They knew which crops should be sown at certain times during the year. In this regard, most of the Incas’ knowledge was based on their observations of how “the direction and intensity of the sun rays provided a reliable clock to regulate the sowing and harvesting of crops” (Guaman Poma de Ayala, 1613/2009, p. 60).

Rituals and Agrícola Calendar in the Present

Farming in the Andes, and other ways of life, are not what they used to be. Daily life is rife with new conditions and the new generation of Indigenous people in the Andes are

aware of these changes. For instance, Clements et al., (2010) found that local knowledge base on folklore, myths and the history of Andean highland people is “extremely valuable to the process of observing, recording and predicting changes in the local climate” (p. 35).

However, traditional *know how*, which has been an adaptation instrument for centuries, has gone through a severe process of cultural erosion during recent decades, resulting in a gradual loss of traditions, a decrease in the use of native languages, social exclusion, alienation and discrimination. In this regard, Practical Action (2010) confirms that life for many families [especially] in the remote Andes region is hard. There is a need to improve farmers’ skills and knowledge and revise ancient ways of farming so they are more responsive to current day problems.

Farmers have substantial and complex knowledge of natural resources and production technology but, in many cases, this knowledge is outdated and/or is not uniform across the regions. This is partly due to the past unrest and violence in the region, which forced thousands of farming families to migrate to cities in search of employment, and led to the abandonment of farming plots, pastures and water resources. (Practical Action, 2010, para. 16)

Nevertheless, Rolph (2006) shared her experience of seeing how new roads have opened the interior countryside once accessible only on foot. Of course, it also increased availability to transport by roads facilitating travel to nearby markets, to work outside the farming sector, and for pursuit of resources outside the traditional community. Additionally, Quechua (the language they usually use) is not “as useful outside the community, nor is it as readily accepted. If people leave their community, in order to communicate, they need to speak Spanish. Spanish brings with it modern trends and thus, globalization has entered these

Andean highlands” (Rolph, 2006, p. 3). What Rolph (2006) experienced in relation to Quechua was the misleading perception that "Quechua was the mother tongue of the illiterate or poorly educated people." As a result, it is inadequate or does not blend with modern life. Thereupon, modernity produces changes and changes people; not just by introducing new thinking about the way they *do things* (e.g., farming), but also the way they communicate with one another while they *do those things*. A clear example is when they go out of town to sell goods at the local or regional markets. Petterson (2010) did her research in one isolated community in Peru, and she notices that,

My participants have seen their position at the heights of rural society erode and then collapse. They watched their land taken from them during the military regime of Juan Velasco Alvarado ... they have watched how life disappeared; a way of life that has sinister aspects, but once was satisfying and meaningful for them. (p. 6)

As she continued, “one of the participants approached me and sadly said, the way it was and the struggles that me and my family had waged against the tide of history: ‘All this dies with us’ ” (Petterson, 2010, p. 6).

Khipu (Quipus) and the Incas

It is still unknown how the Khipu worked in the Incas time. It was thought to be an accounting tool to keep record of the resources the Inca Empire possessed. Garcilaso de la Vega (1869/1916, p. 121) stated that “Khipus means to knot, or a knot, and it was also understood as an account, because the knots supplied an account of everything ... the Indians made strings of various colours” (p.123). Similarly, Urton and Brezine (2005) define khipu as “knotted-string devices that were used for bureaucratic recording and communication in the Inka Empire” (p. 1062). However, most of the existing literature stated

that khipu belongs to the Inka period. Important to realize that Urton and Brezine (2005) historical findings showed that “khipu approximately belongs to the 1400 – 1532 CE Khipu was used by the Incas and its use extended from Ecuador through central Chile, with its heart in Cuzco, a city in the high Andes of southern Peru” (p. 1).

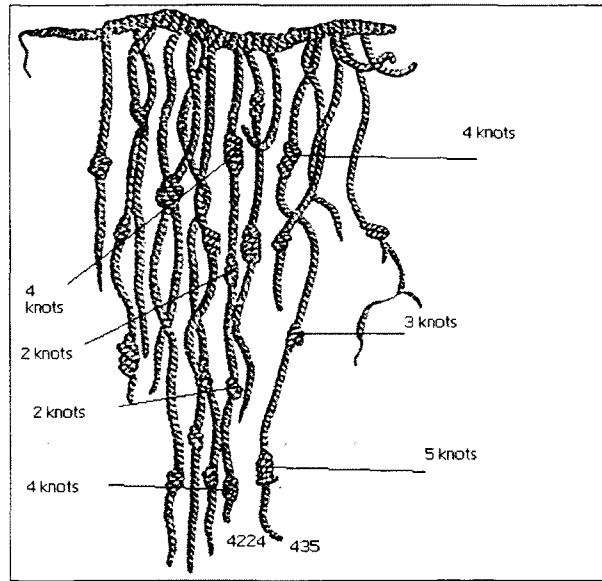


Figure 9. Peru. Quipus (Khipus): Inca Recording System. By Peru Travel Diary: Machupichu. com

In the same manner, literature of the colonial times indicated that khipus were used for record keeping and for sending messages by runners throughout the empire. According to the *Khipu Database Project*, last updated on June (2009), there are approximately 600 khipus in museums and private collections around the world. On the positive side, the *Khipu Database Project* (2010) confirmed that “khipu comes from the Quechua word for knot (singular/or plural), and they are textile artifacts composed of cords or cotton or occasionally camelid fiber” (p.1). Allen (2005) states that:

By late sixteenth century, however, Spanish inquisitors had caught on to another aspect of these string devices: A very un-Christian type of sacredness inhered in them; khipus recorded a complex system of shrines housing ancestral mummies, and some were even interred with them. Thus, khipus were outlawed as idolatrous; and khipu-users, if they did so at great risk. Standard histories assume that khipu-use died out at this point, and that by early seventeenth century khipus were a thing of the past. (p. 983)

Urton's book, *The Social Life of Numbers* (1997), a study of Quechua mathematical categories, laid important groundwork for khipu studies. Contemporary Andeans, Urton tried to understand how the Incas' predecessors find numbers deeply significant. "Numbers, and operations performed with numbers, carry moral and spiritual meaning" (p. 983). The cultural importance of number is part and parcel of the pervasiveness of fibre technology in Andean cultures; weaving, for example, entails highly focused counting, particularly in terms of binary operations. Thus, Urton's study emphasizes the importance of rectifying the overarching value of the Andean arithmetic processes, a value grounded in the notion that all things ought to be in equilibrium.

The Inca's Cosmovision

Malinowski (as cited in Meyer & Maldonado, 2010) considers cosmovision as one of those untranslatable words, because "cosmovision fits into its culture and into that only" (p. 30). For Malinowski, cosmovision "implies a philosophical or spiritual perspective that attempts to account for, or include a way of understanding the entire cosmos and humanity's place in it." (p. 32). The Andean cosmovision is related to how people perceive their fellows, their ancestors, nature, and their divine world. The Incas were considered one of the greatest

civilizations of the world. Their narratives accounted for much of the oral knowledge of many of the nations already living our world. For instance, cosmovision is also related to how and for what reasons a group of farmers decided to grow a given food crop, was it famine or drought, or did subjective forces influence farmers' decisions? For instance, recent studies of robbed burial sites near the coast of Peru made significant ecological and cultural contributions to our knowledge about the

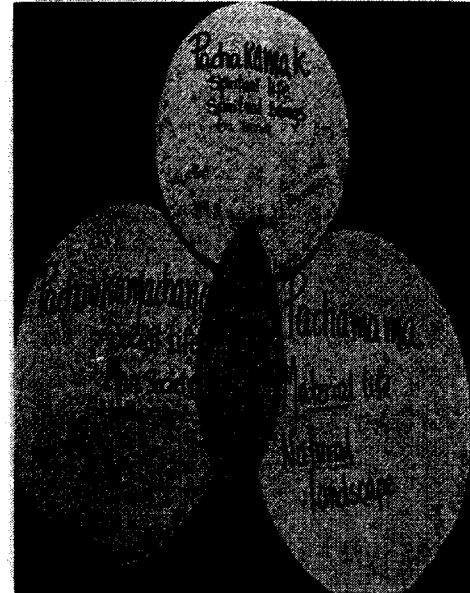


Figure 10. Peru. Indigenous Cosmovision. Cosmos Culture information from Delgado Gomez, 1999. Drawing by Orcherton, 2010.

Incas cosmovision. As an illustration, the mummy's remains, buried alongside their traditional foods, and with textiles and other grave goods, tell us that many of the staple foods grown by the Incas were also ceremonial, spiritual, and were used as gifts in the afterlife.

Delgado and Gomez (1999) advise us of the importance of understanding the Indigenous cosmovision if we are planning to work in Indigenous communities. "Experience and sensitivity are required when entering Indigenous communities for the first time, respecting, sharing and becoming part of the rituals, in a deeply spiritual way are, in our view, important " (p. 30). To understand this process they developed a diagram on *Cosmos Culture* in which is how the researcher (as a guest) wanted to be part of the community. If (for example) the researcher accepts Pachankiri (the indigenous concept for "Real Life") he or she can sustain "the self-management and sustainability of the community" (Delgado &

Ponce, 1999, p. 30). Being consciously involved in the holistic cosmos nature (material, social and spiritual world) enables researchers to understand various elements in the Andean Indigenous concepts of life. Delgado and Ponce (1999) delightfully illustrated these concepts in the following examples “the concept of living geographically, the complementary duality and the division of the universe into four parts:

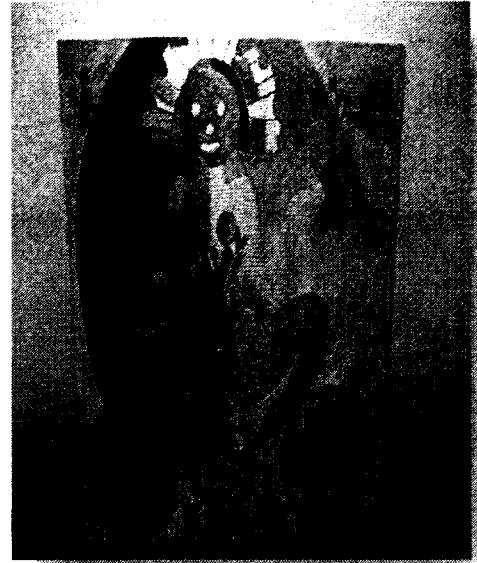


Figure 11. Peru. Pachamama: Mother Earth. from Wikipedia. Adapted & sketched by Orcherton, 2011.

Pacha (time space), Nairapacha-quipapacha (the before and the after), Ira Kamachita (to be permanent and have); Utchatha (to be temporary)” (p. 30).

Another feature noted by Miranda Zambrano (1999) a Peruvian researcher is that for Indigenous people in the Andes, cosmovision involves a harmonious form of being, thinking and feeling, in which everything is interrelated. For instance, during the harvesting and storage season of potatoes, rituals are performed as a way of presenting ‘respect’ to Pachamama; in the same way Indigenous farmers expect this respect when an outsider walks into their lands. Then, ‘silently’ an offering is displayed in the corner of the field before harvesting starts; this is the time for listening and learning, coca, cigars, liquor and chicha²¹ are offered to say thank you for what has been granted; this is the time for sharing and feeling welcome, the doors are open, be generous. To request a good harvest two large potatoes selected as father and mother are blessed. All the children from these two potatoes

²¹ Chicha: A fermented liquor made from maize and other plants by the indigenous peoples of South America (Oxford Dictionary)

have to be protected during storage so caution is required. Nobody is allowed to eat these sacred potatoes and children are not allowed to play with them.

Peru: Socio Political Condition

The social and political situation in Peru is complex. The European Commission's (2007) strategic analysis found that exclusion, poverty, and inequality affect a large number of Peruvians. They have identified the structural roots of many of the social, economic, political, geographic, ethnic, and cultural conflicts. This becomes an issue when coupled with the social sector which includes education, health, nutrition, access to natural resources in a context of sustainable development, and social and community assistance programs. In fact the main priority in the social sector is the reduction of poverty and the improvement of the quality of life. According to the European Commission (2007) it can be achieved by "job creation and universal access to basic, good-quality services in health, nutrition and education" (p. 15). In like manner, on July, 2009 the Guadalajara Summit on Social Cohesion pointed out the "social development approach", which is essential to deal with the challenges presented by poverty and inequality. The main focus was to guarantee a healthy democracy and secure the formation of an efficient economy that supports job creation for all Peruvians.

Members of the Peruvian States must cooperate to achieve improvements in the social and political Peruvian situation. With this in mind, Berrios (n.d) critically argues that Peru's history of economic development has frequently been blamed on political leaders. In recent years, governments, especially during presidential elections, created high expectations and in the majority of cases failed to deliver on their promises. Along the way, the country witnessed socio-political disturbance and confusion. As a matter of fact, people's hope

collapses and periods of economic instability and recession compound the alarming situation. Also there are acts of sabotage, corruption and rebellion.

With this in mind, on July 2011, Mr. Ollanta Humala Tasso the new elected president of Peru, in his first speech to address to the nation, indicated that his new government will pursue: “Reform, democracy, freedom, inclusion, redistribution, growth, peace with justice, security, decentralization, transparency, sovereignty and consultation” (para. 23). Simultaneously the new president assured the nation that they will work in the promotion of an open market economy to the world that fulfills their commitment to growth with social inclusion and democracy. This implies that the state not only will promote the growth of the economy and the social sector, but also the betterment of social conditions in the area of education, health, and nutrition. This is a priority for this new government and this will require “the investment in infrastructure for schools, medical posts, daycares and an increase of minimum salary” (para. 28).

Comparatively, *Country Report-Peru* (2011) informs us that the newly elected president Mr. Humala’s main purpose is to increase and improve dialogue between investors (foreign and domestic) and poor, Indigenous communities. He plans to review Peru’s actual concessions framework and to strengthen the State’s mediation capacity in order to introduce new mechanics of consultation. On the other hand, during this process it is expected radical local leaders’²² reactions will create social unrest, which is often manifested by damaging important sites, roadblocks, and strikes. Unfortunately, these events hamper the economic stability of the country.

²² The Country Report- Peru, Sept 6, 2011 PNA Article A270387444 associate local leaders with contraband trade, illegal mining activities and coca leaf farming.

The report also announces the possible challenges the new president will face during the period of 2011-15:

Violence could rise sharply if, as pledged, the government steps up its presence in the Ene and Apurimac river valleys and the Huallaga valley, where the illicit drug economy –increasingly controlled by Mexican cartels – operates with relative impunity. Second, security will continue to deteriorate in the capital Lima and major coastal cities in the north, as organized crime strengthens on the back of Peru’s growing cocaine output (the country is now the world’s leading cocaine exporter and the second-largest cocaine producer). Third, the remnants of the armed group Sendero Luminoso (the Shining Path), which terrorized Peru in 1980-2000, and thought to number around 400 at present, will continue to pose a localized threat in areas where the presence of the state remains scarce. (*Country Report-Peru*, 2011, p. 1-2)

Peru: Situation of Indigenous and Mestizo People

Indigenous people continue to be the “others” who are ignored, disenfranchised, and practically alienated from political power. Integration and recognition are considered a political game because, at the end, as Paredes (2008) describes, to integrate means to assimilate, to acculturate, to cover the Indian into a peasant “who will wander through the streets of the capital cities” (Meyer & Maldonado, 2010, p. 286). It seems that the recognition of human rights for Indigenous people (at least in Latin America) is only on paper such as the U.N (b) Declaration of Human Rights of Indigenous People.

In the case of the situation of Indigenous farmers it is impossible to negate that in Peru agricultural feudalism still exists. The land has been overused and to make it produce

requires high amounts of fertilizers (usually chemicals), and farmers are treated unfairly. In the majority of cases there are a minimum of, or no, benefits to farmers and their families in relation to social insurance, health insurance, and employment insurance. The excuse for this situation is attributed to the lack of communication and transport from these isolated areas.

On the other hand, Chomsky's comment is that the structures of Indigenous communities represent "the importation of the so-called New World during colonial times ... the Spanish peasant organizational model" (Meyer & Maldonado, 2010, p. 284). Chomsky added that genocide and extermination were the foundation of the modern state. It was the colonizers who constitute their republics and constructed their structures of power. Ironically, celebrating independence days can be considered as a cover up which denies the existence of Indian nations (Meyer & Maldonado, 2010). Meanwhile, the appropriation of land and resources has not ended. It is well known that Indigenous people have survived for more than five hundred years. For instance, in countries like Mexico, Guatemala, and the Andean region, Indigenous people are the majority and they have protected the most important and exquisite values which sustain humanity, such as respect for life, communal knowledge, language, traditions and more.

After centuries of colonization and resistance, the concept of Mother Earth, Pachamana, has been valued and recognized and now is written into the text of the Constitution of Ecuador. President Evo Morales has managed:

To get the U.N. Assembly to declare April 22 to be the Day of Mother Earth, efforts are being made by Indigenous people, civil society, and governments to reestablish the rights of Mother Earth. There is a growing acknowledgment of the moral authority of Indigenous people for preserving human values, biodiversity, and the

defense of Mother Earth from voracity and devastation. (Chomsky as cited in Meyer & Maldonado, 2010, p. 288)

Without doubt this offers to all Indigenous people and communities a new vision of survival and hope. Finally, the massacre of June 19, 2009 in Bagua (Amazonas Region in Peru) can better illustrate the situation of some Indigenous communities in Peru. The transnational corporations imposed on the Peruvian state a predatory colonial vision. The land was sold to mining oil companies without consulting the native people of that region, so Indigenous people reacted in defense of their territory. Further, “more than 70% of the Peruvian Amazon has now been allocated to oil companies, and a series of hydroelectric dams threaten to displace tens of thousands of Indigenous people from their homes” (Survival International, 2011, para. 6).

Peru: Indigenous People Human Rights

According to the European Commission (2007) Peru is an active participant and has ratified most international treaties on human rights. A clear example of this participation is the incorporation of Human Rights into the National Peruvian Legislation. Furthermore, it is important to recognize the contribution of the Truth and Reconciliation Commission (TRC) since they have been working on human rights recommendations to respect the civil and human rights of all Peruvian citizens. The 14 September 2006 is a memorial day since Peru ratified the optional protocol of the Convention against *Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*. The commission will pay special attention to the issue of human trafficking and in any future agreements this will [and must] be the focal point in all cooperative projects. With this in mind, the participation of citizens in the decision-making processes, the normalization and decentralization of democratic processes at the national,

regional and local levels, the promulgation of the official Political Party Law, the establishment of institutions such as the ombudsman, and the freedom of expression for the press are positive signs of movements towards a healthy democratic system. At the present time, it is equally important to guarantee the protection of children's rights, as "child labor is a fact, especially in rural areas and among the Indigenous communities" (European Commission, 2007, p. 17). A point often overlooked and requiring further in-depth analysis is the perception of child labor in the Western world and how this is perceived in Indigenous communities. Child collaborative approach in Indigenous communities is part of the "helping hand" that the family needs for the working activities in the chacras. Although this may be true, this is one of the reasons why Indigenous families decide to have more children.

Nevertheless, *Peru Country Review* (2011) gives a statistical overview of important variables that negatively impact the ability to vastly improve Peru's human rights. For instance "the Human Poverty Index Rank: 26th out of 103, Gini Index²³: 49.8, Life Expectancy at Birth (years): 69.9, Unemployment Rate: 7.6%²⁴, Population Living beneath the Poverty Line (%): 54%" (p.52).

Compelling evidence on the need those Human Rights in Peru requires priority attention is given in the following example:

The general judicial system is flawed: witnesses are not protected and there have been cases of harassment or threats of violence after they have testified ... the

²³ The Gini Index measures inequality based on the distribution of family income or consumption. A value of 0 represents perfect equality (income being distributed equally, and a value of 100 perfect inequalities (income all going to one individual). (*Peru Country Review*, 2011, p. 53)

²⁴ There is widespread underemployment in Peru, especially in rural areas, the following is information from *Peru Country Review* (2011) accessed at UNBC. Population living on \$1 a day (18.1%), Population living on \$2 a day (37.7%), Population living beneath the Poverty Line: (54%), and internally displaced people: 60, 000, Total Crime Rate (N/A), Health expenditure (%of GDP): Public (2.2%), GDP on Education (3%). Source: Retrieved from: <http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=fca5723c-5091-4f48-9719-6ddf11096ce9%40sessionmgr113&vid=4&hid=119>

police and security forces act with impunity; arbitrary arrests and the detention of suspects are committed by the police and security forces. Harassment, beating, abuse, and torture, of detainees and inmates are also normal occurrences. Violence and discrimination are a day-to-day experience for children, minorities and Indigenous people. Those with mental and /or physical disabilities also suffer from discrimination and lack of opportunities in society. Child labor is also a concern in the region. (*Peru Country Review*, 2011, p. 51)

In 2006, Wilfredo Ardito the head of the National Human Rights Coordinating Committee's working group on Indigenous people stated that "in Peru, the poorest of the poor, the people who do not even have identity documents, the most neglected and abandoned, are Indigenous people" (Salazar, 2006, p. 1). It is estimated that "there are 1.552 million over 18 and 10.445 million children and adolescent who do not have identity cards (43% of the population)" (European Commission, 2007, p. 29).

Peru: Period of Political Violence Guerrillas

It has been suggested that to understand the decade of political violence in Peru requires a "detailed historical and regional analysis of local and State power, class structures and the construction of ethnic and cultural difference" (Poole & Renique, 1991, p. 135). Any approach to understanding the origins, importance and future of Shining Path (SP) and the Tupac Amaru Revolutionary Movement (MRTA), necessarily will require in depth analysis of the "broad-based grass-roots social movements, popular political organizations and Leftist Parties not affiliated with or supportive of this violent group's actions" (p. 135). Moreover, for the European Commission (2007) the SP and MRTA had created serious civil hardship during the 1980s and 1990s; countless deaths, infrastructure destruction, the onset and

exacerbation of poverty, and social exclusion that affected Indigenous peoples, women, and children. Furthermore, the Truth and Reconciliation Commission (TRC) in its final report of August 2003 indicated that 70 000 (Statistical projection of TRC), of the dead and disappeared correspond for the most part to the Quechua Indigenous people population.

Alberto Fujimori, who governed the country during the 1990s defeated terrorism and managed to reinsert the country into the international economy. Nevertheless, the fight had a highly negative cost and impact for Peruvians. On one hand, the social indicators, during that time showed the increases of underemployment and inequalities. On the other hand, the institutional stability of the country showed the breakdown of institutionalization, increased corruption in the government and authoritarianism among other societal conflicts. (European Commission, 2007)

Once again, on July 2011, Mr. Humala indicated that insecurity has been identified as one of the serious problems that affect people. The increase of violence and organized crime, drug trafficking and gangs, are a consequence of the lack of effective state policy. As he pointed out, “we must end the aftermath of the terrorist violence.” (para.70). The survivors (victims and relatives of the terrorist massacres in the past) must rebuild their lives and have hope for a better future. Nevertheless, according to *Peru Country Review* (2010) the SP as an armed opposition group, are active again, and are responsible for ambushes, deaths, and other types of abuses in the nation. A recent attack occurred in December, 2005 when 8 policemen were killed in the Ayacucho and this attack was attributed to the SP. As a result, the government declared a state of emergency in several towns near the city.

An Alternative: Popular Education and Non-Formal Education

Historically, during the 1960s and 1970s, two major social movements began in Latin America, Popular Education and Liberation Theology. Popular Education stems from the work of Paolo Freire (1970) who became interested in the education of the poor people of Brazil. Popular Education emulates to some degree, Liberation Theology which is disseminated from the Jesuits centers. The Jesuits actively worked in social programs that served as an inspiration (theoretically and practically) to Popular Education (Gottlieb & La Belle, 1990). In this regard, “popular education aims to alter the balance of power in capitalist societies through economic and political action that typically fall to violent armed struggle” (Marques as cited in Gottlieb & La Belle, 1990, p. 14). Some writers consider popular education to be separate from Freire’s discourse on consciousness-raising practices in non-formal education; in reality Freire’s pedagogy seems to be embedded in their philosophical assumptions and practices. By all means, consciousness raising (and its practices) are considered as a “specialized element in non-formal education intended to combine critical awareness, acquisition of literacy and of other basic skills” (Gottlieb & La Belle, 1990, p.10). Indeed, popular education programs build on the premise of non-formal education with a further need to target marginalized populations.

Despite these developments outlined by these authors, non-formal education also arose in response to the failures of the formal school system and to make education available to poor, alienated and marginalized populations (Fink, 1992). The same author defines non-formal education programs as “any organized, systematic educational activity carried on outside the framework of the formal system to provide ... learning to particular subgroups in the population” (p. 172). Likewise, non-formal education programs place emphasis on the

mode of learning and focus on each individual's specific and technical needs. Muyeed (1982) goes deeper when he added that non-formal education is flexible and its flexibility enhances the learning needs of any group within the community "men, women, out-of school youth, children farmers, artisans, landless labourers, etc." (p.237). Although this may be true, popular education programs, in contrast to non-formal education, look at community and organizational training needs that benefit the community for improvements in their social and economic well-being (Rogers 1992).

Experiences on the impacts of consciousness-raising in Bolivia, Chile, and other Latin American countries, achieved a positive impact on the ability of farmers (or other marginalized groups) to articulate opinions on repression, corruption, dependency (this was reflected on the stories that the informants shared during field work in their chacras). Indeed, Gomez (as cited in Gottlieb & La Belle, 1990) states that the impacts of consciousness-raising are positive in the formation of the individuals, but does not result in improving farmers or marginalized groups' living condition. Although this may be true, Gottlieb & La Belle (1990) in Latin America and the Caribbean corroborate that consciousness-raising should be viewed as a means for understanding the mechanisms of oppression and for exploring alternatives to achieve social equity, fairness and justice. Bonifacion Copara from the community of Huito, Pitumarca, Cuzco as cited in Rengifo (2005) states:

I want to talk, now, what children are we raising! When they go to school they come back different; they do not want to eat our food, they do not want to dress in the clothes we made for them. They feel ashamed of our way of life. I need to talk, I must say we need to talk in the school about our costumes, the way we live in the community. (Rengifo, 2005, p. 13)

The social and cultural dimensions of development and its implications on rural education in poor communities are salient points, often overlooked by government or non-governmental agencies often entrusted with empowering local communities to improve education systems. Development of any kind cannot be achieved without people's active participation in the decision making process. Muyeed (1982) points out that education for rural communities should take into consideration farmer's local knowledge and their traditions must be accepted and respected. Mamany as cited in Rengifo (2005) illustrated this need:

Children have to learn things in school and to learn what is in the chacra. They have to know both. This year our school is teaching potatoe varieties and now the children are choosing potatoes at home by their names. The teachers now are telling us not to cook rice and noodles. They are teaching our children the numeration (mark) of the sheep as our grandparents did in the past. They are learning to present their respect to our deities as our grandparents did. (Rengifo, 2005, p. 23)

According to Muyeed (1982) education in rural communities must be built on creating awareness and/or reviving knowledge of local situations and experiences, in addition to the availability of local resources, and on the needs of the people and their potential development. "The physical and social environment of the rural areas should become the most important learning material for people's education and development" (Muyeed, 1982, p.233)

Historically and in actuality, Indigenous people in Latin America hold onto their past and are in the midst of many challenges concerning their future. Their goals and dreams are often interrupted or placed on hold, particularly related to their prosperity and education. Van Cott (2003) recognized that Indigenous people can have a choice on modes of economic

production and to improve what are often “miserable and unhealthy living standards; for the right to participate in public decision-making as individual citizens and as collectively recognized ‘peoples’ or ‘nations’; and for the right to be Indigenous *and* a full and equal citizens.” (Van Cott, 2003, p. 221)

In this context, Mom Hau, (2009) found that some textbooks used by the educational authorities in Peru (especially during the 1960’s) emphasized history, language, religion, as basic identity markers. Some examples, presented by Mom Hau are illustrated in *Venciendo* “all Peruvians from the coast, the highlands, and the jungle are part of the Peruvian nation; we all speak Spanish, profess to Catholicism and celebrate the same heroes” (p. 139). Other textbooks such as *Pons, Muzzo, 1961* are more persuasive in “alarming cultural diversity caused by the unfinished trans-culturation” *Peruanito 1964* highlights presumptuously that “let’s assume that we could unite [all Peruvians] on a large square. There would be ten million noisy people of different races, speaking different languages, belonging to different religious beliefs” (p. 139). Then again, the thought at the time as the author remarks was the lack of cohesion among Peruvians. *Pons Muzzo 1961* remarked that “Indigenous people, whose insistency on maintaining their own autochthonous culture” (p.16) impeded their assimilation into a homogeneous national identity. This viewpoint essentially reiterates the fact that, Western (or outside) education has worsened the identity of Indigenous Peruvian people, and their struggle to maintain their cultures, societies and identities has been seriously impeded by gradual acculturation processes over the past millennium. A clear example of these struggles can be seen in their constant fight to avoid the destruction of their cultural and historical foundation, to gain control over their land, the right to define

themselves individually and collectively, and to improve what are often miserable living standards.

In July 2011, the new elected president of Peru Mr. Humala in his first official speech emphasized that:

Peru is a multilingual and multicultural country. This collective diversity is undoubtedly our greatest asset. However, it has long been a discourse and practice of exclusion, rejection of difference, a "you're not like me," which covered discrimination and intolerance. This is at least strange because the exclusionary conduct often comes from those who praise our cultural diversity. (Ollanta Humala's First Speech as a President of the Republic of Peru, 2011, para. 12)

In relation to the farmers (or other marginalized groups) and in general the rural poor in the chacras, the new President affirms that they will be the priority in his government. Further, *AGROBANCO* will have enough financial resources and funding to provide credit for poor or marginalized farming families. The promise is to establish agricultural development modules which will be available to the different agricultural associations and producers.

In relation to the land tenure (observation of researcher during visit in 2010) there is still a high percentage of land being exploited by landlords; the notion of large single tracks of land (or *latifundia*) still exists and farmers who work for owners of these extensive land areas often receive unfair considerations (e. g., unethical treatment, low-wages, no health benefits, physical and psychological exploitation, humiliation and discrimination); as it was 40-50 years ago. Comparatively, the agriculture of the coastal areas are still handled by foreign interests. This situation does not allow people to organize or develop in benefit (or in favor) of the Peruvian national interest, especially for the benefit of the rural poor. Despite

the alleged prosperity (commonly announced by the Agriculture Ministry) still a great number of farming communities are living in poverty and extreme poverty. *Peru Country Review* (2010) informed us that the Peruvian economy is currently unstable, and has created a larger (more visible) social gap between the rich and the poor. This gap could have been one of the causes of the growth of violent insurgency in the 1980s. As a matter of fact, in the background of the Shining Path philosophical conception they “claimed to represent the Peruvian peasant and working classes” (Poole & Renique, 199, p.133). In this regard, Andreas (1995) found that the Shining Path had supported in rural areas where women outnumber the men and in urban shantytowns where at least half the families are headed by women. She also found that in the prisons, women accused of subversive activities were more highly educated than men facing similar charges. Further analysis is needed to discuss Andreas’s findings. In relation to the land, in some Indigenous communities the land was threatened “by corporate interest, whose communal values were undermined by the imperative of competitive economy” (Andreas, 1995, p. 14).

Mr. Humala, (as the new President of Peru), announced that the State will serve as a promoter of growth and social progress. Education, health, and child nutrition should be a priority. Moreover, the government will invest in infrastructure, schools, medical posts, and improving the basic wage. In regard to education his brief comment was in the educational system, which should be of 8 hours of study and promote the culture of sport and recreation, promoting inter-school competences in the field of culture and sports as a response to the alarming fact that more than one third of students in the major cities of the Peru are at risk of obesity. There is no mention of any intercultural education in a communal context. On the other hand, there is a program the 'Scholarship 18', which will enable young people with

limited financial resources and with adequate high school performance to continue their studies at top-level public and/or private institutions. What about the ones with low school performance (who are primarily Indigenous children)? What options of formal or non-formal education they will have?

On the other hand, the European Commission (2007) took a closer look at Peru's social situation and indicated that there are regions with high rates of poverty and extreme poverty.²⁵ In regards to the situation of agriculture, the agricultural reform of the 1970s (under the military government of Juan Velasco Alvarado) has had a positive impact in the mountain areas. However, since the 1970's, the legal precedents are still pending for some expropriated land, and complicated overlapping tenure relationships also exists. To put it differently, the agriculture reform resulted in excessive parceling of the land with "85% of the population owning less than one hectare of land" (European Commission, 2007, p. 15). This was confirmed based on the sizes of the chacras the participants (in this research) own.

In order to achieve the Millennium Development Goals of 2015, it is recommended that Peru needs to integrate their "economic growth policies, income distribution policies, and social policies" (European Commission, 2007, p. 16). Peru should achieve the aims of primary education (in the country), "the promotion of gender equality and a reduction in maternal and infant mortality" (European Commission, 2007, p.16). Even with these ambitious goals in mind, popular education and non-formal training are still on the priority "to improve" list in Peru, along with poverty alleviation; both of these seem somewhat

²⁵ They identify regions with highest rates of poverty and extreme poverty: the Central mountain rain (Huancavelica, Huánuco, Apurímac and Ayacucho). The rates are also high in Cajamarca, Cusco and Puno and in the forest regions (Amazonas, Loreto and Ucayali). (European Commission, 2007, p. 15).

unattainable, given the current policy and institutional setbacks undermining the entire process.

Ignoring Traditional Planting Practices of A/K/C

Most of the literature related to A/K/C focuses on its taxonomy, production, utilization, consumption, feed-use, cash-crop and processed products and part of a market economy. Traditional farming practices in relation to the social, cultural, and spiritual local community costumes are ignored. In this context, research on Andes potatoes, according to Rolph (2006) focused on how people may refer to, distinguish, and categorize their staple foods. It seems that where people *do* what they *do*, is just as critical to the success of agricultural practices as *what* and *how* these practices are implemented. The influences of the social, cultural and spiritual traditional planting practices in peoples' daily interactions are based on a consensus "that are not only human," Rengifo as cited in Meyer & Maldonado, 2010, p. 24) but based on a consensus achieved with the world "that is beyond humans" (p.24). This way of understanding life is one of the reasons why ceremonies, rituals and traditional planting practices are alienated from Western science. Moreover, another reason why rituals and ceremonies tend to be dismissed from agricultural science practices and other fields are because of content, which are embedded with songs and the constant use of prayers and "plegarias"²⁶ in the form of metaphors (Olivier & Marti as cited in Contreras, 2004). In Mexico for example, it is common among scholars (in the agricultural field) to ignore the traditional and religious practices of the peasants while planting or harvesting their traditional crops. These future agricultural engineers (who are going to work with communities, in the majority of cases) consider it unimportant, or useless for agricultural

²⁶ Plegarias are song prayers composed by metaphors difficult to understand.

progress and agricultural research (Contreras, 2004). A more in depth study of this phenomenon indicates that rituals have an important empirical value in the traditional planting practices especially in the maintenance and care of crops. In the same manner, Woody (2007) believes that “if we honor Indigenous traditions, if we are willing to sit in circle, to take part in these deeply spiritual rituals, then we touch what is timeless” (para. 15). Indeed, for this reason, culture and conservation help to alleviate the loss of traditions, values, and beliefs. At the end, the main goal is to recognize the need for integration without losing respect for Peru’s multi-cultural and multi ethnic reality.

Women: Traditional Food Preparation and Preservation

Educating the community regarding the nutritional values and in some cases the traditional cultivation of A/K/C is an asset. Indigenous women are the primary health and nutrition decision-makers for their families. In essence, Indigenous women have an intrinsic relation with the land and are considered the guardians of ancient traditional crops. Up to the present time, in harvest season women of small remote Indigenous communities (observations in rural community in 2010) accompany their husbands to the chacra, to pick up potatoes, A/K/Cs, and to select the best qualities and varieties of these crops. By doing that they secure food and reduce poverty. Furthermore, Salazar (2010) emphasizes that Indigenous women are responsible for the continued preparation of traditional dishes and helping their husbands in the chacra. For example, Regina Illamarca said, “we help with the planting by selecting the seed potatoes, bringing the fertilizer, sowing the seeds and covering them with soil” (Para. 11). Regina was working with her young son slung over her back in a colorful poncho in the Andes (Salazar, 2010). A point often overlooked is that in the chacras usually the entire family is involved in growing crops.

Bitran, Ma, and Ubilla (2000) reiterate that a mother's education has been shown in Peru and elsewhere to be a significant determinant of children and family's health. Sadly many Indigenous women suffer from gender inequality and poverty. Although, women are engaged in productive activities they have significantly less access than men to health, education, assets and services, and less voice in public decision making. According to the Report: Country Gender Profile, 2007 (data obtained from the UNDP²⁷) the life expectancy of the Peruvian woman at birth was placed "in 2004 at 73 years against 68 in the case of men; 82.1% female literacy rate against 93.5% in the case of men; 88% of combined gross enrolment ration (for primary, secondary and tertiary schools) in the case of women versus 85% men." Sooner or later, guaranteeing the economic, social and political rights of women and the promoting of gender equality and the empowerment of women should be one of the main goals in order to re-establish the strong role of women in communities. As such, indicators related to education, illiteracy, malnutrition, wage employment and political representation are used now to monitor progress in women's condition, especially in rural areas (Sanchez Gamarra, 2004).

In Peru, in some Indigenous communities, mothers and educators are receiving training in participatory projects on the orange-fleshed A/K/C as an important source of beta-carotene and Vitamin A, so with just 125g of A/K/C there is enough beta-carotene to provide the daily pro-vitamin to their children/preschoolers (IPC, 2010). Under those circumstances, the acceptance of A/K/C daily food intake by the family is a priority, albeit the hope is that a child may be more flexible to modifications in food choices than an adult. In addition, Gibson et al., (as cited in Tobin, 2005) confirm that the mother's socioeconomic and

²⁷ United Nations Development Report (2007).

educational status strongly influences the ability to promote healthy dietary choices in her children that will follow through to adulthood.

In relation to food security, the Andean people in the past gradually transformed their living conditions, not only to achieve more and better food, but also to secure it from frequent natural disasters. The most compelling evidence regarding past practices in the preservation and conservation of food, are in products such as dried potatoes (chuño), jerked beef (charqui), flours, and dry food among others. Furthermore to conserve food from the impact of natural disasters they built warehouses and deposits called collcahuasis²⁸ or collcas. (Horkheimer, 2004). The following, is an example how the pre-Inca and Inca people conserved and preserved potatoes. The techniques employed in those ancient times are still present and are practiced by Andean Indigenous peoples. Generally speaking, the preservation of food was one of the main preoccupations of societies in the past. The Europeans had only a few techniques, such as sun drying and salting used to preserve meat. These methods were also used in the Americas, but in the Andes, pre-Columbian societies were using the chuño's method of preservation practiced in areas of high altitudes.

The potatoes are exposed to variations in temperature thanks to the extreme differences between highs and lows during the afternoon and night. Children and skinny people then softly and extremely carefully crush the potatoes into a powder with their feet. The result is the elimination of all moisture, and therefore a dried product, which will not spoil for many months, and can last even years. While in the rest of the world, all vegetable products have to be consumed immediately, in the Andes, people had discovered a unique method, which allowed tubers to be kept indefinitely. (Zapata, 2008, p. 8)

²⁸ Collcahuasi Inka warehouses used to thresh cereals and store the agricultural production. (Robles, n.d).

Traditional Food and Benefits of Healthy Eating: A/K/C

The benefits of traditional food and healthy eating mean more than the physical activity of harvesting or gathering. Doran (2004) states that central to their culture and way of life, traditional foods were highly nutritious and sustained Indigenous people successfully for generations. There is a special connection to family, their land, their traditional values, beliefs, and worldviews. Irving (2009) pointed out the importance of creating and maintaining supportive services, resources and preventative programming capable of genuinely responding to the needs of Indigenous people. Furthermore, Doran (2004) also analyzed how traditional food use diminished as a result of relocation into settlements, decreased access to the land, concerns for environmental contaminants, less time and energy, and fewer skills for harvesting. The reality is that the change from traditional foods to store-bought foods high in fat, sugar, and starch has compromised the health and well-being of many Indigenous people.

According to IPC (2010) nutritionists in the USA are exploring the potential cancer preventing properties of purple fleshed A/K/C due to the purple pigmentation (anthocyanins) found also in blueberries and red cabbage, a powerful antioxidant easily absorbed from the digestive tract into the bloodstream. This is part of the reason why A/K/C production is expanding faster than any other major food crops in the world. In Canada, unfortunately, the weather condition of BC cannot support local production because A/K/C requires altitudes ranging from sea level to 2,500 meters above sea level.

Climate Change and Local Experiences

The absence of adequate precipitation in Coastal communities was not only a concern for the Incas in ancient times, but also a concern for modern agriculturalists. The Incas

developed alternatives to take advantage of whatever they disposed; of one of the alternatives was the construction of terraces (Andenes in Spanish). Horkheimer (2004) obtained data from the *Direction de Meteorologia del Ministerio de Aviacion* on the annual pluvial precipitations (coastal area), to give readers the notion on the shortage of rain in the major part of the Peruvian Coastal sites. Horkheimer presents the exact measurement from “1960 to 1961: Station *El Alto* (Cabo Blanco) 13.9 y 48.5 mm; La Molina (Lima) 0.14 & 6.2 mm; Vitor (Arequipa) 2.0 & 22.0 mm. Compare it with the pluvial precipitation of Cerro de Pasco 808.3 & 968.9 mm” (p. 49).

Nature in the Andes “is the soils, the climate, the waters, the plants, the animals, the heavenly bodies. The mountains the rocks; it includes humans and all that is present here and now in the area that the diverse Andean ethnic groups share” (Apffel-Marglin, 1998, p. 52). How can native tubers and especially A/K/C confront the many uncertainties of Climate Change? In the case of Peru, native potatoes have been one of the most important crops and are practically the staple diet of Indigenous families and their main source of income (Clements et al., 2010). IPC (2007) annual report sustains that roots and tubers have already made a “substantial contribution to providing food and alleviating poverty in developing countries” (p.7). At the same time, Dr. Anderson, the Director of IPC since 2005, recognized that the long term advantages of both potato and A/K/C have the potential to lessen the concern of high priced cereals for the poorest people and contribute significantly to world food security. However, besides all the great news of potato and A/K/C, vulnerability to roots and tubers is a continuous potential threat and it can be created by many factors such as CC. For better illustration an overview of the problem is presented in figure 120 (p.191).

The need to plan (and adapt) for short-term and long-term responses is critical especially to building a resilient food system. One of the main concerns of CC is its precise implication remains uncertain and as Ensor and Berger (as cited in Clements et al., 2010) wrote this uncertainty is of central importance to adaptation. However, adaptation planning cannot go ahead without understanding what CC means in a particular location. So *uncertainty* is understood that “local people have developed ways of adapting to the changing weather condition inherent to the multiple climate systems that exist” (Clements, et al., 2010, p.45).

All groups and cultures continuously evolve and adapt to changing times and conditions. It is hoped that the historical patterns of traditional agriculture practices and perceptions will be understood and uncovered. Without delay this will help to illustrate the importance of traditional Indigenous farming practices in Peru. In brief, highlighting the importance of resilience to shocks, and demonstrating how openness to new ideas, crop species, and technologies has in numerous ways enriched Indigenous agriculture fuelling both land use modifications and the persistence of many of the Indigenous Peruvian traditional planting practices and beliefs related to A/K/C.



Figure 12. Way to Calpot, Yautan. Gathering firewood for cooking. By Orcherton, 2011

CHAPTER FOUR

Methodology and Methods Used: A Qualitative Approach

... one day Don Pedrito told me, "We occupied this land for only a short time. When you walk in the land you will find food that is provided to you When I came here the first time, I was able to survive because somebody planted some seeds and crops; I was able to eat and save my life. Now, I am almost 90 years old and I do the same; I keep planting seeds for others that are coming behind me and for the generation yet unborn.

Don Pedrito, personal communication, July, 1985.

Opening

La Música Andina

...La música andina

es la voz del viento
que aulla entre las peñas altas:
nacida solo del aire, pero muy fuerte.

La música andina

es el vuelo del cóndor
que hace un dibujo en el cielo:
parece arte, pero da el sustento.

The Andean Music

Andean music

*is the voice of the wind
that howls among the high rocks:
nothing but air, but nevertheless very strong.*

Andean music

*is the flight of the condor
making a design against the sky:
it appears to be art, but gives sustenance.*

By June Ireland (poems)

Introduction

At the start of my field research work, my heartfelt intent was to reflect on and attempt to conserve (maintain) Peruvian Indigenous and Mestizo farmers'²⁹ cosmovision, worldviews, philosophies, and ways of knowing and being. In order to do this, I needed to understand my current surroundings and to obtain a more in depth understanding of farmers' realities in a contemporary context. To accomplish this effectively a suitable methodology and field research methods needed to be chosen to answer the overall research objectives and provide some insight (plausible explanations) for the problem at hand.

My main research goal was to find out why it is important to revitalize rituals and ceremonies related to Mother Earth (Pachamama) and the traditional planting practices of A/K/C in the chacras. This demands the revaluation of the local knowledge and culture of the common people in the Province of Casma and some of its inner communities. Furthermore, I was able to stay with community families at some length, and participate and observe the things they did. I learned to work in parallel with them in finding knowledge (*ways they know*), and understanding how they acquired that knowledge. In this way I shared with them the things they profoundly believed in. I realized that all those activities are embedded with the notion of resilience, which works as ancestral principles and teaching tools that helped them (the participants) to become less vulnerable and more resilient to their rural realities.

To restate my research question presented in chapter 1 (p. 4)

1. What are the social, cultural, and spiritual planting practices (ways of knowing) of the Casma people in the north of Peru regarding their native cultivar A/K/C and how can this help them:

²⁹ The term farmers may be used interchangeable with peasants (translated in Spanish: Campesinos), participants, clients, and key informants.

- a. To adapt and build resilience to new innovation/strategies and adaptive capacities (responses produced by their local knowledge) to the challenges of climate change,
- b. To increase their sense of food security
- c. To alleviate poverty.

As I reflect in the previous lines, as a social worker all these learned experiences allowed me to value and engage myself in my own personal critical negotiation and to recognize the courage of those Indigenous and Mestizo farmers and their families; who decided to stay and continue with the practice and preservation of their knowledge. Through the course of the research, I equipped myself to be a receptor (research instrument of the Peruvian Casma culture) and understand the issues they faced. Through this ethnography and adopting an *emic* (or insider) perspective, I was able to immerse myself in the culture and share with them their challenges in a constructive, proactive and participatory manner. For example, analyzing some of *the social aspects* in relation to the research question, I found that getting together and sharing predictions seem to be an efficient way to reaffirm what farmers know and helps them to take measures to resolve the problem or issue at hand. Within the *cultural context*, sharing time with their children and telling stories from ancestors helps them to value and reconstruct their historical past, and preserve cultural values, traditions, and beliefs. All are valuable sources of farmer's identity, a fundamental component of building community resilience. *In the spiritual aspect*, understanding the reciprocity that exists among cultivars, animals, and people in the chacra reinforce a good relationship with family and neighbors in the community.

Selecting the Appropriate Methodology

Methodology, according to Smith (1999) “frames the questions being asked, determines the set of instruments to be employed and shapes the analyses... it is at this level that the researcher needs to clarify and justify their intentions” (p. 143). Framing this concept in relation to my research, I would visualize methodology as the chacra and the methods as the diverse types of crops that are cultivated. An understanding of the intrinsic historical knowledge and culture is needed, to move toward a deeper understanding of why people (Indigenous and Mestizo Peruvian farmers), “*do what they do*” in their chacras.

Morse and Richards (2002) stated that “like any craft, qualitative research is best learned by doing it and talking about the experience” (p. 8). According to Creswell (2003) qualitative research “ begins with assumptions, worldviews and the possible use of theoretical lens, and the study of research use an emerging qualitative approach to inquiry into the meaning individuals or groups ascribe to a social or human problem” (p. 37).

It is important to mention that some of the characteristics of qualitative research are related to my role as a researcher. My intent was to collect multiple sources of data, examine documents, visit historical places and museums, observe behaviours and interview some of the Casma people who wanted to participate. In addition, I applied inductive analysis through an inductive process to establish the comprehensive set of themes that could answer the objectives of this research project. This was possible because of the interactive collaboration that I was able to establish with the participants and non- participants of the Casma communities. I accompanied the participants every day to the chacra to observe daily interactions. One of the many observations during my visits was the simplicity of the daily chores activities in participants’ chacras, that provided them meaning and knowledge as well

as insightful ways of seeing and explaining the "*whys*" and the "*hows*" of their activities and interactions. My original proposal design was in line with my initial intent; as a Peruvian ethnographer, I did rely on some intrinsic knowledge of the culture and people of whom I was studying.

Case Study Community and Ethnography Strategy

Berg (2007) considers that case studies are approaches capable of examining simple or complex phenomenon, with units of analysis varying from single to large cases. Moreover, Creswell (2007) informs us that in qualitative research case study is the study of a "bounded system," (p. 284) and is based on a diverse array of data collection materials. Many qualitative researchers use the case study approaches as a guide to their research with the goal of uncovering the manifest interaction of significant factors and characteristics of the community involved. Mainly it helps the researcher to capture the nuances, patterns, and other latent elements that other research approaches may overlook. It is in "the holistic description and explanation; and, as a general statement, any phenomenon can be studied by case study method" (Creswell, 2007, p. 284).

Case Study versus Case Study Community

For this research, a Case Study Community (CSC) approach (within an ethnographic analysis) was undertaken. The nature of case study is also well documented by Bogdan and Biklen (as cited in Berg, 2007) when they define it as "a detailed examination of one setting, or a single subject, a single depository of documents, or one particular event" (p. 283). Fraser (2009) further explains that "the term 'case' should be clearly identified and it is important to explore in the positioning of the community to focus on what the community knows and what the participants think" (p. 84). Essentially, the 6 participants are considered a 'single

case' or "key informants" because of their intrinsic relation with the cultural, social and spiritual traditional planting practices of A/K/C in their chacras and their similar life experiences in their communities.

While searching for more insights on a case study at the beginning of my research proposal, I came across the CSC defined by Berg (2007) as a systematic gathering of information about a particular community or focus in some particular aspect of the community or phenomenon that occurs within that community. So, these experiences in the community provide an understanding and awareness of what and how things *are* in the community. Ethnographic data collection for CSC, are the same for case studies; however, the main concern is the interrelationships among people in their spatial setting and physical environment and how these elements shape the lives of these people in their communities or the life of the community itself. The development of participatory maps (handmade) and the GPS maps can productively enhance the CSC approach (See Appendix F: pp. 228-246).

We can summarize then for this research, the term *case* is applied to some of the communities (involved in the research) of the Province of Casma, and although there were six participants, they are viewed as a single case. The reason I view these participants, and indeed myself, as a single case supports my view that community members dedicated to the *chacra* can only be seen as a whole (in a singular sense) when we acknowledge the validity and value that are embedded in their oral narratives.

Field Methods

Part of my research involved ethnographic fieldwork in the province of Casma, Department of Ancash, Peru from the end of May to the end of July 2011, and previous to that from June to July 2010 in the province of Huaral, Department of Lima. I took on the dual roles of a participant and as an observer in the selected communities of the province of Casma. Aside from participant observation, I also carried out semi-structured interviews with some Peruvians Indigenous and Mestizo men and women, dedicated to the cultivation of A/K/C in their chacras. Then, I reviewed historical documents, visited archaeological and ceremonial sites and museums. It is through the dynamic interaction of the participant narratives that I was able to ground my research methods which I will explain throughout the development of my thesis.

Selecting the Setting

The Province of Casma was chosen for various reasons. First, historically, the communities in this area of Peru have been doing agriculture for millenniums and farmers have an in-depth understanding of their traditional agriculture systems, including A/K/C, sweet potato (*Ipomea batatas* (L.) Lam.); second, the Casma communities have historically cultivated and contained the most ancient remains of sweet potatoes (see page 26 of this thesis); and third, the author's key informant was also an important influence and lead contact in the region. Case studies (sample sites) were chosen based on these criteria as well the fact that Casma also had a complex community composition, cultural diversity and archaeological evidences to support an in-depth ethnographic analysis

Selecting Communities

After knowing that Mr. Molina (key informant of INIA-DONOSO) decided not to be part of this project, and knowing the background of the Province of Casma, I started to look for a key informant of that province by asking and talking to people that I knew were from Casma. I found that there was a nurse (native of Casma), who works in Lima, but goes regularly to Casma to do community work, helping Indigenous/Mestizo people with their health issues. I was fortunate to meet and have several conversations with her. I explained my interest and motives to do my research in that province. She was delightful and encouraged me continue with my research and provided me a list of key people who can help or be part of this research.

The following are the relation of the selected communities with their respective participants: Casma Port (Cesar & Felicita), Centro Poblado Cachipampas: el Agar (Genaro & Martina) and Centro Poblado Cachipampas: Alcantarillas (Maurino & Herminia), Distrito de Yautan (Maria Consolation), community of Calpot (Alejandro & Marta), and the Community of Huambacho (Rosa & Ruth).

To Undertake an Ethnography

This project involved doing ethnographic fieldwork. Ethnographies “are always conducted in the natural setting, or the field, so that the researcher studies the lives of members of the cultural group directly” (Morse & Richards, 2002, p.50). Morse and Richards (2002) state that ethnography takes several forms and this will depend on the type of research questions, its objectives, scope, and the researcher perspective. Goodall (2000) explains that an ethnography is “the result of a lot of reading, a disciplined imagination, hard work in the

field and in front of a computer, and solid research skills, all of which are crafted into compelling stories, narratives or accounts” (p.10).

I experienced this ethnography as a process wherein the researcher immerses herself/himself within the field of everyday “natural setting” of the participants. Within this setting, the researcher employs various approaches such as “participant observation, field-note writing, interviews, document analysis, and photography to collect data” (Brewer 2000, p. 26). In this regard and throughout the course of my fieldwork, I encountered a variety of perceptions expressed by participants of different experiences and backgrounds. The research took these differences into consideration in the analysis and writing stages. In so doing, I was able to highlight the divergence between the voices of men and women who participated directly in the research and the voices of those who remain without the opportunity to participate in this research but who wanted to share what they know.

During my fieldwork, I was able to find a place available in Casma port. And this allowed me to interact and update myself with all the whereabouts around families and activities in the port. This experience made me realize that my status as Peruvian woman, overseas Peruvian, female student researcher can pose challenges not only to gaining access to certain places in the field at times, but also to gain enough trust that people can feel free in their own interactions. On several occasions, I noticed that the women observed me as someone different. I cannot tell why but it must be related to my time out of my own country and *way of being* or some other factors. In this regard ethnography is considered as the “art and science of describing a group or culture” and ethnographers are noted for the ability to enter into research with an open mind (Fetterman 1998, p. 1). Wax (as cited in Morse and Richards, 2002) gives us a word of caution that “one should not become an ethnographer

unless one can tolerate feeling ‘out of place’ and making a fool of one’s self’ (p.370). I was delighted that this short outsider experience lasted for the period it did, since I felt I was accepted and received cooperation of the people. It is fair to say that, I was aware that my feeling of being accepted can create potential issues of losing my objectivity; however, in qualitative methodology as Dr. O’Neill states that “we embrace subjectivity” (L. O’Neill, personal communication, March 30, 2012). It is in this regard that I used my own creativity to remain aware of my own cultural values, beliefs, and biases.

Participant Observation

As a research method of data collection, participant observation requires the researcher to be directly involved in and record daily activities of the participants in the field (leCompte and Schensul, 1999, p. 91). During my fieldwork over the course of four months (two months in 2010 and an additional two months in 2011), I attended several activities organized by different organizations that worked in direct relation with the participants and their families. During June, 2011 the Municipality of Yautan and other governmental organizations in Casma organized activities such as: workshops in the area of education; best management of plantation fruit (mango); and participatory budgeting in the municipality of Yautan. I also attended a conference on Archaeological Investigation in the Ancash Coast, organized by the Casma National Institute of Culture. I attended a panel on growth with inclusion and the outstanding social agenda: the challenges for social work committed to equity, justice and solidarity in Lima, Peru.

Furthermore, I went to the campesinos *extraordinary* meeting on water issues (for those with late payments), organized by the Comité de Regadores de Yautan (The Yautan Water Committee). I participated in the celebration of *El día del campesino, also called día*

del indio, o día del trabajador (the day of the farmer/ the day of the Indian or day of the worker). I was an observer in these events, or whenever I was needed, I participated in supporting the *campesinos* who had problems or concerns. I tried to assist with literacy/numeracy or in understanding some of the information that the organizer of the events were trying to explain.

Food gathering is common during these events; this also gave me the opportunity to offer my help to the women, who usually collaborated together and shared conversations. Aside from these activities, I also had the opportunity to help out with some chores in the *chacra* such as picking and peeling corn, milking cows, feeding the animals, harvesting some products that they use in their daily food preparation. I willingly took on these tasks, recognizing the importance of these interactions not only to build my participants' trust but my own trust, assertiveness, and confidence. An ethnographic research requires accessing the familiarity and openness of those who have consented to participate.

Throughout my fieldwork, I had the opportunity to observe the different patterns of participants' daily social interactions from early dawn to evening. From these observations, I came to realize that there is no single definition of 'participants roles' as each individual frequently negotiated their roles and positions within their own families, neighbours and communities to suit their specific needs and in some cases the demands from outsiders.

This realization further committed me to one of my goals of demonstrating the range of voices of those participants who chose to participate in this research. To record the social events and the conversations I had with participants in the field I chose the ethnographic method of recording (a small, non-obtrusive digital recording device), because I noticed that most of my participants seemed to feel more comfortable and prompted to talk freely while

walking in their *chacras*. I also observed that taking notes or writing in front of them made some participants feel timid or intimidated and less cooperative (as I notice that their eyes followed my writings every time I took notes). My assumption is that, in some cases especially for Indigenous people this has to do with literacy, to this assumption I would attach what a historical barrier it has been to learn how to read and write Spanish especially for many Indigenous men and women, and some Mestizos. Even though they can speak Spanish well, writing is difficult and at times frustrating. For some of my participants and non participants Spanish is their second language and Quechua³⁰ first language. Anecdotal to this, is the fact that since ancestral times, Quechua is (and has been) a language of orality. Its written form was used by the Spaniards as a way to understand the Inca people and eventually conquer them.

As an indirect consequence perhaps of this sad, repressive history, some resentment still remains in the people. I have witnessed the disappointments of some participants when they shared with me their stories. Some of them, when they were young did not have the opportunity to go to school to learn how to read and write Spanish, and now as adults they are trying hard to do it.

I am going to school three times a week, we are 12, the adult teacher comes and she gives us the lessons, we repeat what she said and we have to write those written words in the board several times and then read. After few minutes, she wants us to read all over, I have read few lines, I cannot remember some of those words... I am

³⁰According to Chalco Arangoitia (2000) "Quechua is a language spoken in the Andean zones of Peru and part of the Ecuador, Bolivia and Argentina. Approximately 60% of Peruvian speak Quechua."

trying hard but I cannot remember those letters well...I have headaches.... (E. Gomez Anyosa, personal communication, July 2, 2011)

In this regard, Vigil (n.d) informed us that the written part is not a social practice for Indigenous people. Text is a product from those who are dedicated to the school or religious practices. She states that:

the transition from orality (Quechua) to writing prints not only a mode of representation of the phonic, but a change in the structure of thought that goes from the concrete to the abstract, from the global to the particular, of the temporary to the permanent. (Vigil, n.d, p.3)

The other situation is that the written word has been considered a privilege from the dominant class, for people who exert power over the dominated class. (This has a historical connotation, which I will explain in the analysis section). In some of my interviews, I was prompted with comments such as *I don't know how to read and write. I am an ignorant. I don't have anything good to tell you.* I recognize that the pen and paper, at times, seems intimidating to the participants.

In participant observation, field-note writing can be awkward at times, particularly during conversations with participants. Yet in some moments, I found that this method was beneficial, and enabled me to record detailed observations of interactions made in various social settings. These notes aided me tremendously in reflecting upon these experiences. This also helped me, at the end of each day, provide a more comprehensive ethnographic analysis from my observations in the field. My goal was to make them feel as comfortable as possible in the interview process; some days for example on our return to their homes, I would often ask them "what parts of the interview would you like to start or continue from." I was glad in

many instances that the whole family wanted to participate. They often sat with us and engaged in conversation, and many informal family discussions about specific themes or activities that took place during the day. I consider this a form of participant validation that encompasses detailed family knowledge. So, within this informal structure in a family and *chakra* setting, I was able to take some field-notes (freely) and to digitally record conversations at the same time. The keen interest and fervour of our interactions and conversations, diminished (to some extent) the attention of the participants on my note taking, which I did to emphasize only key points of our conversations and nuances of my observations that the recording cannot capture.

Sample Size and Method of Sampling Selection

My initial plan was to use a purposive sampling method with 6 to 7 participants as stated in my initial proposal (April, 2011), but this original plan changed as my main key informant decided not to be part of this project. I am assuming that the reason for this situation is that 2011 marked an important political (Democratic) process in the life of the Republic of Peru. During these political events, political parties started negotiating their participation, and making arrangements with one another. This political effervescence (if you will) created a lot of uncertainty and tense feelings amongst rural Peruvians. As I was in the field I noticed that these events affected my participants and on several occasions, our conversations were interrupted by their comments related to the struggles they have had with the current government, wanting to know which “candidate to believe in” and who are the more trustworthy or noteworthy ones from a political standpoint. Maria Consolacion, a mother of four said that:

Alan Garcia (presidential period (1985-1990) when he was president he changed our money from Inti³¹ to Soles, I did not know they did that, because we lived far away. I saved my intis; I worked very hard with my children to save money. We did not have other income; we only sold products from our chacra. I am a single mother... I've cried I have spent all my strength. We didn't know what had happened. When I went to the bank, they told us our money is worthless. I cried with my children...Now, they are here again! with their political campaign they told me that Alan Garcia at the time was young, and now he is more mature, I said to them that "The Fox changes colour when it gets old, but he never changes his trickiness " I foolishly worked, I have spent all my strength, carrying 40kg to 50kg potatoes and sweet potatoes sacks on my back with my children...and for what. (M.C. Carguayanon, personal communication, July 9, 2011)

Beside this unfortunate experience of Maria Consolacion, I could still perceive that there is hope that whoever becomes President (2011), will help them to overcome their difficulties. Prior to these official presidential election events many of the political and key positions within the government and political party already in power started. In many cases, projects and programs will essentially stop until the new elected government takes charge (July, 28, 2011) and brings about the new political agenda for the next 5 years. I assume that this was one of the reason why Ing. Molina (key informant) informed me that he cannot help me in this research. At that point, I felt a little confused. I reflected on and realized that this is "my country- my people" and I manage the language very well. This thought uplifted me to continue with confidence. I encouraged myself to go ahead with the project; however, I cannot deny that I have experienced the feeling of powerlessness.

³¹ Peruvian Inti a currency of Peru during the period of 1985- 1991.

Regarding further assistance from participants, I was able to contact 6 adults, men and women, and made more concerted efforts to locate diverse participants (elders, young adults, parents). It was important to include both genders; some of them live in Casma Port and others in Cachipampa, Yautan, Calpot, and Huambacho Arenal, all of them dedicated to agriculture and have A/K/C in their chacras (See pp. 78-79 of this thesis). The agricultural activity also was identified as their main source of income.

Museums and Archaeological Sites Visits

During my fieldwork, and as part of my secondary data gathering process, I made several trips to the National Museum of Archaeological and Anthropological Museum of Peru History, The Archeological Temple of Sechin, Ceremonial Centre of Chanquillo, The Archeological Temple of Incahuai, and The Inca Garcilazo de la Vega House.

In all of these historical sites, I selected and recorded a series of photographs of the Pre-Inca and Inca histories, particularly with respect to ceremonies and rituals that Indigenous Peruvians practiced in relation to the traditional agriculture practices at that time. With permission from the curators, I took digital photos and gathered cultural materials and historical documents displayed at the museums. Historical journals from these visits, as well as other documents and photographs proved to be beneficial in the data analysis stage of the research process. Berg (2007) noted that:

knowledge of the past provides necessary information to be used in the present in order to determine how things may be in the future... to uncover the unknown; to answer questions; to seek implications or relationships of events from the past and their connections with the present; to assess past activities and accomplishments of

individuals, agencies, or institutions; and to aid generally in our understanding of human culture. (pp. 266-267)

The gathering of these historical journals, photographs and the retrieval of diverse cultural materials from museums and archaeological sites, definitely influenced my overall perception and interpretation of this data.

Project Initiation

To gain informed consent from the interviewees each participant was given a Letter of Introduction (Appendix B), a Research Informed Consent Form (Appendix D). The interview protocols outline the purpose of the study and interview questions. Although these forms were written in English I translated into Spanish. I also asked them if they wanted to read it themselves or wanted me to read it to them. By doing this I feel that I gave them the option of making their own choice. I also knew and I was aware that some of them could not read and write, but it was up to them to decide. At all times I assure them that they have the right to be informed of the purpose of the research project, and the right to refuse to answer any questions. In each interview, I assured the participants that they could withdraw at any time during our conversation³² and that their personal identity would be protected as they have the right to confidentiality and anonymity. My six participants reassured me that they did not want to remain anonymous they wanted their real names to be revealed and to appear in this research project.

I also assured the interviewees that their personal information would not be released to anyone else outside the University of Northern British Columbia (UNBC). Furthermore, I assured the participants that I would be the only one to transcribe and translate the interview transcripts and that the interviews would always remain completely confidential. I also

³²Notice that the term conversation and interview are using interchangeable.

guaranteed participants that the interview data will be kept in a locked drawer at the UNBC and that the data will be destroyed after two years. In light of these considerations, each participant agreed to sign the consent form.

In summary, part of the interviews took place in their chacras and other parts in their homes. I noticed that while walking with them in their *chacras* our conversations and interactions became more vivid and full of stories and anecdotes, this enriched the content of our conversations and added more thought and meaning to their answers.

Nurturing Respect and Building Trust

I became very aware that building trust is a process that requires constant sharing, reciprocal learning and strengthening relations among people. Nurturing respect and trust also creates an equal position among the interviewees and interviewer. I gained insight into the range of personal motivations of men and women who chose to remain in their *chacras*. Thus, I mentioned my willingness to be there and help them in their daily *chacras*' chores activities. Some of them allowed me to share those activities, which I did joyfully. This helped me to gain respect and trust from the participants and their families and other members of the community and also be able to sense and understand the special relationship they have with A/K/C and other crops. I also noticed that while walking in their *chacra* participants may walk by a certain crop and have memories come back to them; memories which may even bring tears to their eyes.

Many would also argue that by privileging research subjects' voices in the project, I recognized that these men and women are actively constructing meanings of their lives through their practice of sharing their oral narratives. Labow (1972) states that oral narratives told as folktales and "learning by doing, are ways of recapitulating past experience by

matching a verbal sequence of clauses to a sequence of event which (it is inferred) actually occurred” (p. 359).

I tried at all times to respectfully listen and record the oral narratives to develop knowledge profiles ³³ about the ways and means that the Indigenous and Mestizo participants understand, develop, manage, and value their local knowledge in relation to A/K/C. I am also glad that a by-product of this research is something the participants wish to have: a *memoir- album*. Having their stories printed would also allow preserving *what they know* for their children and grandchildren. In this respect, one of the participants mentioned that even though she does not know how to read, her children and grandchildren can do it and read to her. Overall, revitalizing their traditional planting practices of A/K/C in relation with their chacra is something that is intrinsic to them. As I perceive it is in their daily interactions and the demands of working activities in their chacras that the holistic relation is established and renewed day to day.

Field Data Collection Equipment

My field equipment was integrated by a digital voice recorder WS-311M, a Digital camera power Shot A700, and a Garmin GPS map76 CSx, field note-book and Dell laptop (which I used only in my room while transcribing). The Research Informed Consent (Appendix D) informed the participants the use of field data collection equipment. For example, some questions (yes, no) in the informed consent such as: Do you understand these interviews will be recorded using a digital recorder? Do you understand these interviews will use a small digital video recorder? And photos will be taken during the transit walking with the GPS unit? (Appendix D). After that they agreed and signed the forms.

³³ Knowledge profiles should be understood as the knowledge that the participant has in relation with the objectives of the research project.

I then tried to find convenient dates and times to start the interviews. After I received permission from the participants, the interviews were tape-recorded. This method of data collection enabled me to re-hear (re-interpret) what the participants were saying and reflect more deeply on their stories. By doing that, I was able to capture feelings of their struggles, and an understanding how their culture and spiritual beliefs were interconnected with their *chacras*. This helped them not only to validate and/or reinforce their beliefs and values, but helped explain (manifested) part of their life-experiences on a daily basis and the importance of subsistence agriculture practices that puts food on their table.

Some of the participants also wanted to know how the equipment worked. I explain to them how the small devices captured voices, and images. As a result, they became familiar with these research tools and more relaxed. I found that when participants touched the equipments (e.g., pressing buttons, listening, rotating or fondling the recorders, cameras, and GPS unit) this helped to ease their curiosity and involved them in the initial stages of interviews. Some of the participants even tried the equipment on their own. This helped the participants to appreciate it and feel more confident on how this technology works. More significantly for me, it gave me great comfort in establishing rapport and trust, resulting in less anxiety for both participants and ethnographer.

Interviews and Field Data Collection

The interview questions were designed to be gentle and simple enough to avoid ambiguities and to provide the interviewees with the opportunity to answer the questions in a relaxed, safe, and secure form. I also assured them that they will decide to share and take their stories within specific times in their lives and meaningful events pertaining to the questions. At the same time, I was aware that most of the participants are common people

that are willing to share and narrate their own history; I know this was possible, as long as, I was sincere, respectful, and honest listener. I also knew that sometimes our conversations would occasionally be painful as they recall times in their lives and bring to light some emotions of suffering they went through. Expecting that, I was emotionally, spiritually, intellectually, and physically prepared to offer support if needed. At this point I remember what Yhua (2009) explained about oral history:

The oral history for ordinary people who have neither the means to write their own history nor even to raise their voices... rather it is an attempt to open up a space of 'narration' in which ordinary participants can narrate their own experiences, understandings, and historical evaluations. (p.399)

Reading that, I came to the conclusion that my presence in this part of the world (Peru) is also an attempt to open up the space of narration, which is claimed silently. I also believe that the task of any qualitative researcher, (aside from the actual thesis itself) should highlight "the voices" of farmers (or ordinary participants, usually *campesinos*). These members of society need to be heard and are often not "seen" (or invisible) as active participants in qualitative research. In this respect, Creswell (2003) states that qualitative researchers use an emerging qualitative approach to inquiry, "...the collection of data in a natural setting sensitive to establish patterns or themes....The final written report should include the voice of the participants, the reflexivity of the researcher and a complex description and interpretation of the problem..." (p. 37).

Following the UNBC academic protocols, I explained to the participants that they had the opportunity to request copies of the transcripts and a copy of the thesis. I informed them on the ways to get in touch with me in Canada. However, I found them not interested in

getting a copy of the thesis itself but more interested in having a copy of their narratives and the photos that them and I have been taken during the process of the interviews (in their *chacras* and homes). They explained to me that they want a kind of *memoir-album*. Some of them explained that this will be part of their legacy and something they can bring, leave, and share with their families and neighbours.

I also chose semi-structured interviews and adopted the *emic* (or insider) perspective for this research project. In one hand, “the advantage of using semi-structured interviews in oral narratives is that it allows flexibility of unstructured responses” (leCompte and Schensul, 1999 p. 85). Initially, I came to each interview with a set of questions (Appendix E) and I was determined not to lead the interviews in any specific direction. I perceived that having a conversation on their experiences was more meaningful. I soon discovered that the answers to my questions were answered and appeared (emerged from the data) spontaneously. On the other hand and according to Heinonen and Spearman (2006), adopting an *emic* approach to qualitative research attempts to describe a particular culture by investigating culture specific aspects of concepts or behaviours. A *particular group* also can be considered as a *cultural group*. It may refer to a particular nationality, cultures may cross political boundaries and a nation may contain many cultural groups (Morse & Richards, 2002, p. 48). These authors added that culture is dynamic, adapting, and changing. However, culture for many authors is still considered an abstract concept and theories of cultures in general agree that cultural beliefs, values, and behaviours are learned, transmitted, and ultimately shared among individuals within a group. Subsequently, culture can be still considered abstract but in constant flux of influence of historical and social developments. In social work, our main

concern is the participant (client),³⁴ so we want to know about his or her perception of what has occurred, how he or she understands the situation (Heinonen & Spearman, 2006). So, recognizing the uniqueness of the clients and their particular social circumstances is critical. Green (as cited in Heinonen & Spearman, 2006) agrees and expressed that “we are mainly concerned with the *emic* perspective because generalization is not helpful when we are trying to communicate with sensitivity and understanding in diverse situations of the people we try to help” (p. 135). At the same time, this approach allows the interviewees the opportunity to direct the flow of the conversation. By applying an empathetic and caring attitude, I came to realize and appreciate the art of sharing our stories, because I also realize that the interaction is not only asking questions to the interviewees but to share it with both sides. However, as a researcher my stance is to maintain a reflection of the participant’s point of view, which entails self awareness.

In addition Berg (2007) talks about reflexivity in research, which recognizes that no one can engage in sharing meaning with another person without the listener contributing something to the meaning and thus changing the meaning to some extent. It demands “a constant internal dialogue that repeatedly examines what the researcher knows and how the researcher came to know this” (p. 179). When sharing the stories in some cases some clarifications were needed (for instance with the language, cosmovision, metaphors, idiomatic expressions) we, together, through conversation and discussion did the adjustment in order to help our understandings. At the same time, I noticed how respectful listening enhances the participants’ personal strengths and encourages dialogue.

³⁴ According to the Canadian Code of Ethics (2005) “Client is a person, family, group of persons, incorporated body, association or community on whose behalf a social worker provides or agrees to provide a service or to whom social worker is legally obligated to provide a service” (p. 13).

The Casma People and the Use of Geographic Information System (GIS)

GPS (Global Positioning System) is a hand held recording device that uses satellites to triangulate a fixed (or mobile) position by spatially representing longitudinal and latitudinal coordinates of a known geographic area. These points (called waypoints) can be used in a GIS (Geographic Information System) (e.g., ArcView or ArcMap) to construct digital images (based on satellite images)

representing a certain area. I used a GPS to collect waypoints during my field work, and organized them through making use of spatial data management processes and procedures. This facilitated the geographical location of the participants' *chacras*. The result is a mapping interface that includes: transect (routes) walks collected with a GPS, multimedia presentations such as pictures, video and sound clips. The visual images will provide the sense of place and build a multidimensional understanding of Indigenous and Mestizo Peruvian participants' daily lives.

During my interviews, I observed how the *chacra* came to life in people's everyday activities. As a social worker, I believe it is important to bring to light how people in developing countries live their daily lives and it is also an opportunity to analyze the deep roots of what is causing suffering from the perspective of the social structures and power relations.

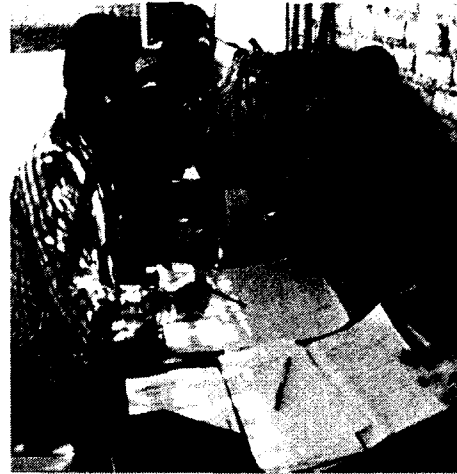


Figure 13. Cachipampa Community the Sanchez's family drawing map of their chacra. By Orcherton, 2011.

Fullilove (as cited in Kemp, in Press) states that “social workers need to access the situated, place-based, and culturally specific knowledge that people acquire in the course of their daily lives” (p.126). At the same time it allows for the understanding of the intrinsic relationships between person and place (e.g., the trips to the chacra). Making this spatial reality visible is essential in this type of social work research.

During the interviews, some participants and family members were able to draw their own maps (See Appendix F: pp. 230, 233, 245). It was interesting to observe how the whole family participated and re-valuated what they knew by asking among themselves: Where the tubers and basic grains in the chacra are located in the farm and how they are growing? Where do the cow, donkeys, sheep, goats, chicken, dogs, turkey stay most often? Where are the main connections for the main water channels to irrigate the crops? How can one get from the main roads to their farm? Where does their chacra begin and end? Where is their chacra located in relation to the whole community? This collective knowledge and collaboration built pride in each family member.

Mapping Indigenous/Mestizo Identity of the Casma People

As previously reviewed, the GPS unit itself is a tool to help locate specific waypoints in a known geographical area, with a certain degree of accuracy (depending on the location the triangulated satellites). Upon further reflection, particularly with respect to human interrelations, the use of GPS can disrupt the traditional way of how families can effectively “map their own chacras (orally).” Families generally discuss the location of spatial attributes (e. g., houses, pig pens, roads, water-ways...) on their farms contributing in the enhancement of their shared knowledge. In addition, GPS/GIS systems can also provide a visual summary

of socio-spatial relations and a partial explanation of how to bridge the gap between traditional knowledge and Western science.

From a socio-political standpoint, Madden (as cited in Harmsworth, 1998) provided examples of the potential power of GIS and remote sensing for the appropriation and coerced involvement of Indigenous people, particularly from non-Indigenous groups. In some cases, locating points on a map about ancestral lands can be contentious, if land ownership is in question. On the other hand, when Indigenous people became more acquainted and knowledgeable with the GPS/GIS they can add “their own cultural imprint to existing applications” (Madden as cited in Harmsworth, 1998 p.1). Furthermore, this technology can motivate and change many of the traditional lifestyles in small communities in Peru. This is already happening. In social work, we validate human relationships, which should develop at their own pace along with the thinking, feeling and ways of knowing and being of the cultural group under scope. As a social worker I consider human relations the cornerstone of enhancing human development. In summary therefore, GPS/GIS along with many other tools or techniques used by ethnographers can help in the design of eliciting sometimes abstract features implicit in a given culture.

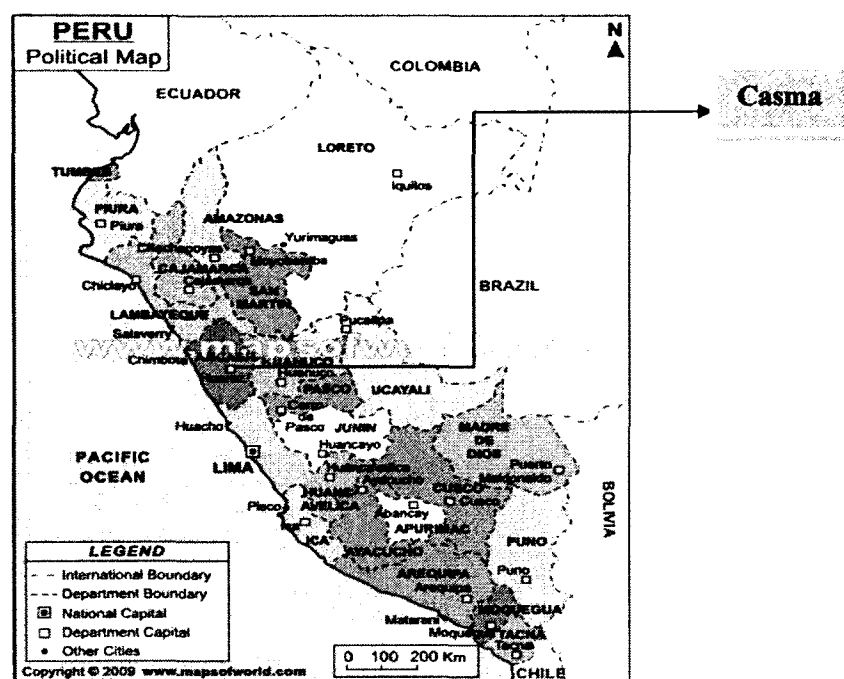
Interviewing Participants and Collecting Maps of their Chacras

My interest in GIS for this research was threefold; 1) to create GIS maps of their farm locations, 2) enhance spatial representation of the thesis project area, and, 3) allow participants to contribute to the construction of oral maps. My initial idea was to map the daily routine of my participants in their trip to their chacras. However, this was difficult to do as I came to realize that I would need more time with them to negotiate this activity.

Most of the time I carried the GPS unit and the participants were able to hold the instrument and walk the border (*linderos*) of their chacras with me. So we were able to create GIS maps of their *chacras*' location. This technique will enhance the visual presentation of the thesis project, in which the participant and a brief part of their narratives will be preserved and presented. A video clip will be attached to the Google Earth system, so everyone can have a sense of where Peru and the Province of Casma are located. In addition, a handmade map (done by some of the participants and their families), a genealogical charts, and GPS maps of their chacras are attached to this thesis (See Appendix F, pp. 228-246).

Site Location: Community Profile

According to the Municipality Provincial Casma (2011), the city of Casma is located a 378 km north of Lima, on the coast of Ancash, among the 9 ° 28' 25 " South latitude and 78 ° 18' 15" longitude West of Greenwich. On the North it is bordered by the Province of Santa, on the East by the provinces of Yungay and Huaraz, on the South by the province of Huarmey, and on the West by the sea of Grau. The Casma climate is warm and dry. With average temperatures of 15 ° C between the months of June to August, and 24 ° C between the months of September to May. The chain of hills between port Casma and the "*gramita*" (transitional grassland area) diverted and attenuates high winds coming from the sea (Municipality Provincial Casma, 2011, p. 11).



Map 1. Mapa of Peru. MapXL, 1999.

Table 1

Casma Province General Data

Province	Casma
Department	Ancash
Capital	Casma
Census 2007	42,368
area (Km²)	2,262.86
Population density (Hab/Km²)	18.7
Name of the Mayor	Jose A. Montalvan Macedo
Districts:	Buena Vista Alta, Casma, Commandante Noel, Yautan

Note. Source: Municipalidad Provincial de Casma, 2010, p. 14.

Demographics Province of Casma

In the last census (2007), the Department of Ancash total population was 1'063,459 (see Table 2. Appendix F, p. 220). With the population of 42, 368 the Province of Casma has the 7th largest population of all provinces representing approximately 4.0% of the total

population of the Department of Ancash (see Table 3). The average annual rate of population growth in the region, in the interim-census period 1993-2007 was 0.8%, which is lower than the national growth rate (1.6%), while Casma reached the rate of 1.3 per cent per annum. (Municipalidad Provincial Casma, 2010, p. 14).

Table 3

Casma Province. Population by Districts and Areas

Districts	Population 2007			Percentages		
	Urban	Rural	Total	Urban	Rural	Total
Casma	24,842	3,989	28,831	86%	14%	68%
Buena Vista Alta	1,021	2,916	3,937	26%	74%	9%
Comandante Noel	979	1,050	2,029	48%	52%	5%
Yautan	2,616	4,955	7,571	35%	65%	18%
Province	29,458	12,910	42,368	70%	30%	100%

Note. This table provides information on demographics by districts. INEP Censo 2007. Source: Municipalidad Provincial de Casma, 2010, p. 14.

Table 4

Casma Districts Population Groups by Age.

Name of Districts	Infants	young	Adult young	Adult	Adult Mayor	Total
Casma	29%	27%	22%	13%	9%	100%
Buena Vista Alta	31%	26%	19%	13%	11%	100%
Comandante Noel	29%	28%	21%	12%	10%	100%
Yaután	33%	25%	18%	13%	11%	100%
Province	30%	27%	21%	13%	10%	100%

Note. Information base on INEP census 2007. Source: Municipalidad Provincial de Casma, 2010, p. 14.

Table 4 shows population by group in all districts and the characteristics of these groups marks Yautan with the highest infant proportion (33%), Commandant Noel with the highest juvenile (28%), Casma with the highest young adult (28%), and Buena Vista Alta and

Yautan with the highest elderly group (11%). Table 5 shows that the main occupation of the Casma province is agriculture (37%). The District of Casma is 23%, Buena Vista Alta is 80% agriculture, Yaután is 73% agriculture and Comandante Noel is 52% agriculture.

Table 5

Casma Principal Occupations by Districts.

OCUPATION	Casma	Buena Vista Alta	Comandante Noel	Yaután	Province
Agriculture, livestock, hunting and forestry	23%	80%	52%	73%	37%
Commerce (minor)	15%	3%	4%	6%	12%
Transport, storage and communication	13%	2%	5%	5%	10%
Manufacture Industries	8%	2%	4%	1%	6%
Fishing	6%	0%	16%	0%	5%
Education	6%	1%	2%	4%	5%
Hotels & Restaurants	6%	1%	4%	2%	5%
Others	23%	10%	14%	9%	19%

Note: INEP census 2007. Source: Municipalidad Provincial de Casma, 2010, p. 14.

Municipality of Casma: Future Plans

The Municipal Council (el Consejo Municipal, CM) and the Council of Local and Provincial Coordination (el Consejo de Coordinación Local Provincial, CCLP) are at the political disposition of the Casma people and actors in the development of the Casma province, the *Plan of Developing Provincial Agreement to 2021 (PDCP)*. According to Ochoa Pajuelo, Mayor of Casma (2010), the PDCP was based on participatory workshops held between the months of March to May 2010, and with the views and opinions of the main actors in the process of validation (May and June 2010) and with the presentation of the document on June 12, 2010. This work is based on the analysis of scenarios, the great capacity of the territory, and in the capacity of its people (actors) in the province. This

methodology named Provincial Characterization, Tendencies, Diagnostic and potentialities had identified what is called “wishes, dreams and aspirations of the Casma people.” A great number of the Casma people participated in this communal dialogue including the specialist team, members of the CCLP and guests. The results were grouped in five categories, which are briefly explained in Table 6 (found in Appendix F, p. 226). The PDCP has become the guiding plan of provincial progress, and their vision 2021 should be disseminated and shared with the entire population (local, regional, national and international) of the province. As Ochoa Pajuelo the Mayor of Casma (2010) states:

It is everyone's task to contribute to the vision of development and this vision unites us as collective people seeking their development with concerted, dialogued and negotiated proposals between representatives of the public, grassroots organizations and business sectors. Let us not miss this new opportunity. Let us work for the future generation, who will inherit a province recognized by their actions of territorial management, value-added agricultural and fishing and diverse tourism. Everyone should recognize us because of our practice of values, the fulfilment of our commitments, the concerted planning and respectful negotiation actions with sustainable results. (Municipalidad Provincial Casma, 2010, p. 3)

University of Northern British Columbia (UNBC) Research Ethics

I was aware that as a graduate student, and Masters Candidate in Social Work, my research should follow the ethics guidelines set by UNBC. My proposal had to be reviewed and approved by the UNBC Ethics Review Board before I embarked on my fieldwork. Likewise, I recognize my own ethics and personal values, and most important I worked to adhere to the cultural processes and expectations required by the Casma people that I have

chosen for this research project. This may very well require the whole hearted support and spiritual guidance of my ancestors, family, friends and people around me.

After having the approval (Appendix A), I knew that my research at all times must respect the privacy and dignity of the participants sharing their knowledge and experience. During my encounters with each of my participants (short meetings), I re-addressed the goals of my research project and provided them with an information sheet (Appendix C) that I have translated in Spanish to facilitate this process. As mentioned previously, the sheet contained details of the purpose and goals of my research project and a clear explanation of the purpose of requesting the informants' participation. It also outlined conditions of the interview, such as the length of time, informants' right to withdraw from the interviews at any time, their anonymity, and emphasized that only I and the representatives of the UNBC would have access to the information the interviewees shared with me.

In conversation with the participants, I provided for them a thorough explanation of the data gatherings techniques that I will be using and information about some of the devices (digital recorder, digital photo camera, and GPS unit) they would be exposed to. My wish was to maintain a constant interaction and communication with the community and the UNBC social work program committee, as throughout the various stages of this project and future dissertation, my work will be influenced by them. I have contacted members of the committee asking for guidance and I am glad that I have received their insightful suggestions and encouragements.

Values and Ethical Guidelines

I have to recognize that the work done by Linda Tuhiwai Smith (1999) has been very helpful in recognizing the principles, values and beliefs of Indigenous people in the world.

This ethical framework can be adapted to any culture as it encompasses the foundation of cultural protocols that must prevail among people and culture.

1. **Respect for people**, participants made the decision to participate and they decide where, when, what time, and how.
2. **Present yourself to people face to face**, present your respect to the ancestor of the land and to the community. Introduce yourself, walk and share with the people around, be honest and sincere.
3. **Look, listen...then speak**, be attentive to each detail and listen carefully while having a conversation, then let your heart and mind speak, be aware of your role.
4. **Share and host people, be generous**, value what you are experiencing, people who do not know you well open their space and take the time to share with you what they know and sharing their wisdom with you. Appreciate it and recognize that we all need the love support from one another.
5. **Be cautious**, awareness is recommended at all times, everything is dynamic and it is in constant change, it requires flexibility and adaptation. Be open and learn.
6. **Do not trample over the *mana*³⁵ of the people**, true cooperation and reciprocity grows from within the person and it empowers the community. Allow authenticity and humility.
7. **Do not flaunt your knowledge**, community needs should be the main concern for a researcher to listen to. The cultural protocols, values and beliefs must be respected and recognized. Value what you are hearing and listen carefully with humbleness.

³⁵ Mana in the Maori language signify prestige.

My Personal Responsibility

During this initial stage of my research, I realized that I am responsible to each of my participants for the information that each of them have shared with me. Words are not enough to express my gratitude to the people who entrusted me with their vision, stories, memories, and made me experience and feel what it means to be part of their holistic connection with their *chacras*, and ultimately, for allowing me to be part of their lives.

In our conversations, some of the participants shared with me more than what I asked, hoping that my understanding is not only the words they were saying but the spiritual connotation in which those words were embedded. Now here at home, while writing these lines, tears come to me as an expression of my humbleness and thankfulness for how they nurtured me as they did with their soil, plants, crops, trees, animals, water and the rain, and the different microclimates in their *chacras*. Now, I know that I must protect the safety and well-being of the participants and the community involved in this research project.

Cultural Safety

In order to achieve this path to the social, cultural, and spiritual revitalization of traditional planting practices, I used the vital cycle of A/K/C to accompany and guide me through the cultural safety approach in this research. After observing and listening to what the participants feel and believe and reflecting on my own experience, I found that using the growing cycle of A/K/C as a symbolic guidance carries the sentiment that the participants expressed during our conversations.

According to Molina (2010), the growth of A/K/C encompasses different stages and phases. This growth comprises four phases which are determined by the change of the different structures of the plant. This can resemble the time (stages and phases) that an

ethnographic research will take and will demand the researcher have cultural awareness in understanding the dynamics and changes of the research process.

Phase of Crop's Establishment (Fig.14 & 15) This stage ranges from planting the cuttings, until the rapid growth of adventitious roots stage, which corresponds to the first thirty days of sowing. It is characterized by slow growth of stems and the appearance of

the first lateral stems. This can resemble the beginning of my relationship with the Casma people, such as a “getting in” (Morse & Richards, 2002, p. 52). It requires patience and flexibility because is “the negotiation stage” (p.52). Awareness is required to apply

reciprocity in recognizing my own values, the values of the Casma participants and the value of the community. It is the time for me to find my role and fit in.

Phase of Formation of Tuberous Roots (Fig.16) This stage starts from the growth of adventitious roots until the formation of the tuberous roots. It starts from 30 days after sowing and lasts up to 45 days of sweet potato planting; it is characterized by the rapid growth of adventitious roots that can reach up to 150 cm of depth, and development of the main and secondary stems. This resembles the time I have with the participants and their families making the initial handmade maps of their settings. It helped me to know the



Figure 14. Initial Stage: Sowing 1-2 days, Molina,2010

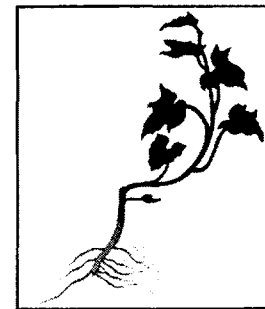


Figure 15. Second Stage: Growing roots 15-20 days. Molina, 2010



Figure 16. A/K/C Third Stage: Formation of tuberous roots 30-45 days, by Molina, 2010.

place, the chacra, and helped them to share their family knowledge. It was a meaningful stage for the formation and building of trust and confidence.

Phase of Filling the Tuberous Roots (Fig. 17) This phase is characterized by the filling of the tuberous roots and is presented in 70 to 90 days; however, this may be delayed by several factors such as high humidity, and excessive nitrogen fertilization. The delay affects the harvest of the crop period. This can resemble the



Figure 17. A/K/C Four Stage: Filling the tuberous roots 70-90 days, by Molina, 2010

good feeling I had of being accepted into the setting. And the awareness that I need to accept the delays or changes of my original plans. Deep reflection is needed to maintain focus on the objectives of the research project, since I was trying to understand the changes the cultural group has been through. Flexibility is needed to accommodate and understand different worldviews as I developed the trust I needed from the participants.

Stage of Maturity and Harvest (Fig. 18) This occurs when 80% of the tuberous roots of sweet potato, have completed their desired size that qualify them as "first quality" with weight of approximately 250 grams. This can resemble my transcript results from the interviews. I gave myself time to listen carefully and apply the necessary analysis to what I



Figure 18. A/K/C Last Stage: Maturity and harvest 120-150 days. Molina, 2010

heard and understood. Also, it is the time that I have been preparing myself for the withdrawal and leaving of the community. Different feelings appear. It is time to sit quietly and ask for peace and inner guidance.

Limitations

Apart from the time and lack of monetary resources, and not being able to have certain amenities (running water, lights in some communities), the *Presidential election, 2011*³⁶ has created uncertainty and feelings of discomfort in the participants. One of the major setbacks was losing a main key informant. The changes also involved changing the setting from Jecuan (Huaral-Lima) to Casma (Casma-Ancash).

Furthermore, during the process of collecting data a fieldworker cannot record every word and nuance in a social situation. I have to recognize that sometimes I had trouble maintaining eye contact with participants while talking and writing. Aside from these limitations, a great deal of effort was required on my part to record data that I thought at the beginning was legible and organized.

I also experienced challenges related to what part of the transcripts narratives could and could not go into this thesis. However, I also found a peace of mind when I thought about the *Memour-Albun* that I prepared for the participants, in which the full transcript of the interview and photos will be given to them. Viewed thus and given the nature of the research, I also realized that the revitalization of the planting practices in relation to A/K/C ultimately; parallel create my own sense of revitalizing my own identity.

Other limitations I encountered were my health. I got sick and stayed in bed (I had a touch of pneumonia, and I was bedridden for a week).

³⁶ The presidential election in Peru took place in 2011. First round the following political parties presented their candidates: Gana Peru, with Ollanta Humala Tasso; Fuerza 2011, with Keiko Fujimory Higuchi; Peru Possible, with Alejandro Toledo; Todos por el Peru, with Pedro Pablo Kuczynsky; Solidaridad Nacional, with Luis Castaneda Lossio. Second round was disputed between: Gana Peru, with Ollanta Humala Tasso; and Fuerza 2011, with Keiko Fujimory Higuchi.

Furthermore, being an overseas Indigenous Peruvian woman and western student researcher raises the question of how I should negotiate these dual roles. My ethnic and cultural affiliation with the interviewees provides me with the opportunity to access invaluable insider knowledge and to understand various cultural cues, such as body language and the use of local terms that are not necessarily available to outsider researchers. At the same time, my position and role as a western student researcher made me aware of my privileges and the unequal power relations between myself and the interviewees. I can conclude that limitations influence the outcome of the roles that I took on in this project and thus help to shape the stories.

Validity and Reliability

Polkinghorne (2007) recognized that “the researcher’s main aim is not to prove whether a narrator’s accounts are accurate reflections of actual events; but to understand the meaning people attached to those events” (p.479). In addition, validating knowledge is an argumentative practice and narrative research claims to be more focused on deciphering the meaning life events hold for people. It makes claims about how people understand situations, others, and themselves. It is my understanding that narrative researchers should provide enough and sufficient justification to the readers, or to whoever accesses the research, with enough evidence and argument to make their own judgment. Thus, my primary intent is to transcribe and translate the narratives from Spanish into English. Berger (as cited in Fraser, 2004) states that in narratives, “people organize their experiences into meaningful episodes that call upon cultural modes of reasoning and presentation” (p.180).

I also believe that employing various approaches to data collection is part of the justification and evidence to claim validity by itself; it is about respecting the participant’s

own words. Denzin (1989a) states that “the meanings of experiences are best given by the person who experiences them” (p. 214). The preoccupation with method, validation, reliability, generalizability must be set aside in favour of a concern for meaning and interpretation (Creswell, 2007).

In ethnographic research, Spindler and Spindler (as cited in Crewswell, 2007) highlighted that the most important element in ethnographic approach “is to explain behavior from the native point of view” (p. 20). My main intension is to analyze (using thematic analysis) the responses of the participants, so my own interpretation of the translated transcript will be added to this study. The interpretation of transcripts may be different then my own view; which is based on my personal perception of the reality of the Casma people. This is one of the main reasons that I have decided to put the main part of the transcript in my thesis.



Figure 18. Elders from Ayacucho and Huaraz. They said, now is time to talk. By Orcherton, 2011

CHAPTER FIVE

Collection of Narratives: Case Studies

With generosity and compassion we have attempted to share our ceremonies and our songs with the newcomers to our homelands, because these rituals convey our successful relation with the lands and seas around us, and our necessary knowledge for those who would share our lands with us. Brother and Sisters Our Mother the Earth is growing old now...

Ruby Dunstan, 1990

Opening

Adios Pueblo de Ayacucho

Adiós pueblo de Ayacucho, Perlaschallay.

Tierra donde he nacido perlaschallay.

Ciertas malas voluntades perlaschallay.

Hacen que yo me retire perlaschallay.

Adiós pueblo de Ayacucho perlaschallay.

Tierra donde he nacido perlaschallay.

Por más lejos que me vaya perlaschallay.

Nunca podré olvidarte perlaschallay.

Good bye Land of Ayacucho

Good bye land of Ayacucho, precious dear pearl.

My home land, place where I was born, precious dear pearl.

Some painfull circumstances, precious dear pearl.

Made me go from my native land, precious dear pearl.

Good bye land of Ayacucho, my precious pearl.

My home land, place where I was born, my precious pearl.

No matter how far I will travel, my precious pearl.

I will not ever forget you, my precious pearl.

Anonymous

Introduction

Throughout the previous chapters, I have presented the background to the framework of the study. Chapter 1 outlines the organization of the study; Chapter 2 introduces the researcher's life stories and experiences; Chapter 3 places the study in context by providing the geographical, historical, and cultural background of Peru; and, Chapter 4 presents the research designed and methodological framework for the study, including ethical considerations.

In this Chapter, I will explore the oral narratives of each of the six (families) participants. As a guiding principle, oral conversations involve sharing meaning. Inviting participants to tell their stories was not imposed or assumed on the participants and it was important to respect each participant's perspective, voice, and way of knowing. It was also recommended, that meaning must be a reciprocal process, perhaps negotiated, explained and clarified. This interactive process allowed meaning to be constructed. Malinowsky (as cited in Meyer and Maldonado, 2010) cautioned ethnographers about the translation of untranslatable words "every language has words which are not translatable, because they fit into its culture and into that only; into the physical setting, the institution, the material apparatus and the manners and values of a people" (p.30). To ensure accuracy, I kept the narratives as close as possible to the literal translation of the actual narrations and life stories as told by participants. Nevertheless, in the interest of space, I will present the excerpts from the interviews that are more closely related to answer the stated specific research objectives.

In concluding this introduction to chapter five, I acknowledge that versions of historical references vary and the experiences that the participants lived also were varied. Each participant represents their own truth. In this regard, Polkinghorne (2007) recognized

the difference in how people experienced meaning, and the stories they tell about these meanings and the connection between storied texts and the interpretation of those texts. These stories are part of the shared conversations and daily interaction amongst people. Like the previous chapter, this chapter was not intended to be an in-depth report of the Casma Peruvian people; it simply takes us (figuratively) " through the mist" and offers us but a small glimpse into the world (a snap-shot if you will) of its people as seen through the eyes of the participants of this research. Grenier's (1998) summarizes his views in the following lines:

Indigenous knowledge (IK) is stored in peoples' memories and activities and is expressed in stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species, and animal breeds. (p.2)

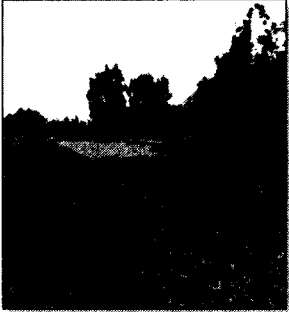


Finally, this chapter includes a series of photographs of the farmers and their families placed alongside their narratives. In this context all the photos presented in this chapter were taken by the researcher and participants.



Figura 19. The Chacra of Cesar & Felicita. Now is time to talk By Orcherton, 2011.

The Interconnectedness of the ecological world and human beings lead us whenever possible to trust our cultural and personal wisdom... I know what I know because I saw my grandfather doing it. The elders living today are some of the last people who have lived most of the elements of their original cultures for some or all their lifetime. They may have also retained most of the traditional knowledge passed on to them by their parents and community

(Nelson Ellhoj & Redmond, 2001, p.iv)

<p>Community Settlement, Group, Education</p>  <p><i>Figure 20. Land Surroundings. By Orchardton, 2011</i></p>	<p>How many in the family go to school? All my children have completed their education, the youngest lives with us and he studied mechanics in the SENATI³⁷ He is planning to start his own mechanic business. Did you receive any type of training in agriculture? No, as a child, I always liked to observe what my grandparents did in the <i>chacra</i>, I also like to read and to be informed. At what age the children start helping in the <i>chacra</i>? Does the whole family participate? My children preferred to go to school and after school they came to help. It was a form of entertainment or relaxation to them. My son, Dante, is the one who likes the <i>chacra</i>. My other children do not have the same inclination as Dante, they complain of mosquitos around; however, Dante helps in milking the cow, cutting branches and cleaning up the <i>chacra</i>.</p>
<p>Community Land Use</p>  <p><i>Figure 21. Cesar presenting morning respect to the chacra and cultivars. By Orchardton, 2011</i></p>	<p>Does the <i>chacra</i> belong to you? Yes, it does. What type of land use do you have? I have a diversity of crops, including A/K/C, maize, cassava, avocados, fruit trees...Do you know the history of the land you are in? In the past the whole valley belonged to the Sechin culture and extended through the Casma Port. I heard that they also found remains from the Wari culture. I remember my father said that behind those mountains are houses of the Incas time. They have found huacos (ceramics), weavings and chaquiras (like necklaces). Before arriving at the Casma Port there is a huaca³⁸, here is well known as <i>port Huaquita</i> this has connection with the Sechin Temple. But as far as I know archaeologists never visit it. Our farm belongs to the Casma port, which is also named High Tabon.</p>
<p>Folk Ecology</p>  <p><i>Figure 22. Cesar harvesting some AKC. By family</i></p>	<p>When someone in your family is sick, what is the first thing you do? Every time we had a problem with our health or the health of our children we go to the hospital. But there is also the curious³⁹. Don Cesar: I do not believe in that. Dona Felicita: well, if necessary I will supplement the medical aid with the help of the curious. When my children were small I did that. I know many people follow the tradition of their parents, and it is an ancient belief that curios cures when one is sick. Don Cesar: I know that people who do not have much resources use the</p>

³⁷ SENATI: Servicio Nacional de Adiestramiento en Trabajo Industrial.

³⁸ Huacas used to be considered a sacred place in the Incas times. Even now it has its mysticism of being sacred.

³⁹ Curious is a person who practices a natural medicine in the community.

member (FM), 2011



Figure 23. Felicita close to the orange tree remembering medicinal properties. By Orcherton, 2011

Folk Ecology & Beliefs



Figure 24. Stop close to the death tree sharing spiritual experiences. By FM, 2011

curious. **Dona Felicita:** No, not only the poor do that; I have seen people of all status, they came from different places seeking the help of the curious. For example next to our chacra, there is a lady that cure by passing eggs to the body, rubs, and even she cures fractures; she knows what to do. It seems impossible to believe, but it has good results. For example, when a child cries too much, they said it is because of the eyes (ojo)⁴⁰ if you bring the child in that condition to the curios he/she will pass the egg, pray and the child will sleep well and feel better. **Do you know if A/K/C has some medicinal virtue or is used as a traditional medicine by whether alone or in combination with other plants?** I know the A/K/C has carotene and carotene is good for improving blood, we give priority to the A/K/C, because it has the most complete nutrients. In the *chacra* we use it for our own consumption and to feed the animals. Perhaps there is much ignorance of its nutritional values. Many only eat A/K/C because of custom without knowing its magnificent protein content. **Do you have any spiritual belief related to the cultivation of A/K/C?** The tradition is that one must see the stars; the elders advise us that when sowing A/K/C do it in a full moon in the *chacra*. If we harvest, we must follow the moon phases. For example, if you sow in a new moon, the plant only grows, but does not produce. The same applies when we have to cut a tree, we must do it in a full moon. For example, in my case I try to follow the lunar stages with A/K/C and cassava; it must be done in full moon. I remember, with the maize, in one occasion I forgot to follow the lunar cycle, so the maize had many leaves and very little corn. **You know something about the climate change?** We are now in the winter, and when we noticed rapid changes we commonly say that the weather is crazy. Those changes affect our crops. There are days (during the day) that the heat is unbearable and there are nights that are very cold. This is bad for fruit, maize, and beans. So, climate change affects some crops and helps others. Another indicator of the sudden changes in climate is what we have seen with regard to plants. The negative effects can be seen in the plants' leaves. In other cases it is the type of pests that are present in the *chacra*. For example, black melia

⁴⁰ Mal de ojo (The evil eyes) It is the belief that when a child is born; the child should be left alone (only with his/her parents), because if many people watch the new born, he/she would get sick.



Figure 25 Cesar Showing damage in cultivars. By FM, 2011

appears when is too cold, and white melia when is too hot. Plants and insects also behave different, there are certain types of insects that appears in great quantity and that tell us what kind of plague will affect the crops. Sra. Felicita: By being in the farm daily, we know how our plants and animals behave, so we can see the changes. Besides, often I share with my husband these little observations. The familiarization with our crops and animals helps us to recognize the changes.

Sometimes, when my neighbors come for one or another reason or just to check on us if we are doing well (this is because my husband and I have medical problems with our hearts). We talk and share all the things that are affecting us, especially with things around our crops and cultivars.

As you can see all our chacras are surrounded by trees (different kinds). The purpose of having them is that it shows our chacra's limits/borders (life fences). We have caña Guayaquil in some parts of the borders. That caña is especial and important for us. We can build our houses with it. And in the case of climate change, caña Guayaquil likes to catch the humidity of the surroundings, so when is a lack of water, all its leaves fall down and give us signs that alert us to do something or be prepared for a dry season. Here in the community some of us have caña Guayaquil in our chacras...

Traditional Oral History, Learning & Culture



Figure 26. Cesar & Felicita another way to preserve the Huambacho variety By Orcherton, 2011

What kind of stories, legends can you tell about A/K/C? I remember when I was young it was the best quality of A/K/C. At the time, one plant of A/K/C produces from 4 to 5 kg or even more. I know at the time the soil was natural rich and it produced very well. I remember we had so many varieties of A/K/C. But now, many things have changed. 30 years ago we had delicious, sandy and sweet A/K/C. I remember a year when our A/K/C plant has only leaves no seeds. Also, one of our friends lost 6 acres of A/K/C it was attacked by tiny worms. They were trying to save some for the animals but the taste was bitter and hard to eat. Not even the pigs wanted. **How do you think the changes in the environment will create changes in maintaining your tradition and culture alive?** Climate change is going to create difficulties in agriculture, because some products are not going to survive. And we have to find



Figure 27. Cesar Milking Blanquita (the cow) before bringing it to the chacra. By Orcherton, 2011

new alternatives. We would require the aid of some agro-engineers. We in our own can do some research, but I'm not sure if that will work. The Incas grew the maize that grows in the coast in the sierra and the corn of the mountains on the coast. They managed to adapt the corn, how they did it? We do not know. Unfortunately those skills were not transmitted or it was lost. We, with so much advancement now days, could not find the way to acclimatize some products from the mountains to the coast or forest, or vice versa.

I always enjoy working in the chacra. When my children come and visit I always encourage them to take fresh veggies, tubers and sometimes some chickens/ducks with them, so they can bring that to their families. We also have the time to eat, all together, and share many stories and memories from the past. Sometimes my grandchildren are around and they listen to, we have a great time when they are around... it is one good way to preserve and conserve what we know...

Climate Change



Figure 28. Plagues all over cultivars' leaves. By Orcherton, 2011

Do you know how to tell when it is going to rain, or to be dry and hot? Casma is a sunny city that many people called Casma "the city of the eternal sun" when is a little bit dark and foggy means that the weather will be less warmer. For example, in the case of the sierra when we see that is very dark and medium blue in the sky; we know it is raining in the mountains (also the arc iris gives us the announcement of the rain in the mountains). At this time, we are in times of drought... **Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?** The behaviour of the weather is not uniform. When the days are dark the animals are sad. Our cow gets hedgehog hairs chickens and chicks die and the other animals do not want to be out in the chacra... **Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions?** Yes, when we get together we always talk that helps us to share what we know and to be prepared...

Traditional Agriculture Practices

Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? Formerly we use



Figure 29. Cesar & Felicita the creek close to their chacra is contaminated. By Orcherton, 2011



Figure 30. Cesar & Felicita showing the diversification of their chacra. By Orcherton, 2011

to do that; however, here in the coast not many people practice rituals as before. **How do you care for A/K/C while growing in the field and did you practice any ritual at the final phase of the harvest of A/K/C?** My wife and I try to give better and constant care to our farm. Animals also help us. However, when bad times come everyone's advice is to spray (e.g., with pesticides), but I don't like to do that, especially for my animals. They eat and live on the farm. When chickens came out from their sleeping area, they run in the field and eat the worms and other stuff. Our chickens help us controlling rodents' infestation. This is one of the main reasons that we want to keep everything in a natural way. **What do you do with the foliage of the plants especially A/K/C?** We save part for planting and the rest we give to the animals. **Do you have domesticated animals in the farm?** Yes, we have cows, hens, geese, turkeys, pigs, and goats. **What types of tools do you use in the farm?** I use shovel, rake, axe, hooks, the Pike, scissors, dibble (for sowing onion and potato), in the case of the A/K/C we use the shovel for *aporque* (to cover it) **What plants do you usually cultivate together with A/K/C? Why?** Over time I've seen that cassava, chinese onion, cilantro, celery, turnip, huacatay (a type of Peruvian herb people use as aromatic ingredients in their cook), and squash. They all grow well together.

In this part of the interview, Cesar made a point in this area, last year I used to have AKC, but this year I am planning to sow maize and after that probably I will sow cassava. Sometimes we need to sow more maize to feed the livestock and animals. We also use the foliage of AKC and other crops to feed them.

Culture & Traditional Role

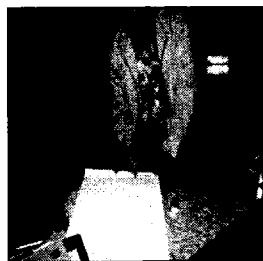





Figure 31. Cesar drawing the map of his chacra to identify the location of crops. By

How can you preserve what you know about A/K/C? I like to try different ways for instance for many years we had the *huambachero* A/K/C type. This kind of A/K/C is well appreciated. Long time ago it produces well now days is hard to produce same quality and quantity as before. As far as I know A/K/C only demands two watering besides the rain and humidity of the soil. If those conditions are present it will produce well. Also if you want your A/K/C to be sweet only put less water while growing in the chacra, or let it to be exposure under the sun. Another way to preserve is having AKC in different locations of the chacra, in some areas grows well

<p>Orcherton, 2011</p>	<p>(robust and large quantity) and in others do not. Only its leaves growth, but also we use it to feed the animals....</p>
<p>Nutritional Knowledge</p>  <p><i>Figure 32. Felicita showing her traditional way of cooking AKC. By Orcherton, 2011</i></p>	<p>What type of dishes do you prepare with A/K/C? The food I prepare comes from my parents. We used to have A/K/C with fried fish and pig-rinds (chicharón), homemade tortillas with it leaves, and roasted. Do you know the traditional value of A/K/C? I know it contains carotene and it is good for the brain. Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C? Yes, sometimes that happens on a voluntary basis. In any social event is our custom to prepare traditional dishes and it is during these times that we talk about how to prepare or how we did this or that. In general A/K/C is always present in our traditional dishes. How do you think changes in the environment are affecting the way you prepare your meals? Any change affect. For example, when there is an excessive heat the food does not last unless is stored in the refrigerator and the products of the chacra can get rotten easily.</p>
<p>Farm Economy</p>  <p><i>Figure 33. Cesar holding daikon. By Orcherton, 2011</i></p>	<p>Do you sell A/K/C or other crops? Yes, we sell. If yes, how does it help you in your home income? It helps, with the extra money we can get things we need at home o in the chacra. Now days, we have other products in the chacra such as plantations of avocado, mango. We also have corn (to feed the animals and to sell), oranges and sometimes they have great demand and we sell them. Do you have other source of income? We are retired and have a monthly pension.</p>
<p>Local Perception & Evaluation of the Farm</p>  <p><i>Figure 34. Felicita and the reel-off-corn tool.</i></p>	<p>Do you combine crops in your chacra? Do you think that the fact of combining trees, crops, improve or affect your crops? I think rotating crops are important, especially for the good maintenance of the soil. Each product we sow weakens the soil and at the same time strengthens with nutrients that the own cultivation process generates. Also, rotation and the combination of different crops help to combat pests.</p> <p>This technique, as I called, has been done for many years, I remember, and most of us do that. So we can secure food in our tables.</p>


<p>Community Relation & Travel</p>  <p><i>Figure 35. Public community event in Sechin-Casma. By Orcherton, 2011</i></p>	<p>Hope you have for your community, especially in rituals and ceremonies and respect to the Earth? It would be important to revitalize and revive traditions. I know there must be people who still practice rituals and ceremonies. It is important to continue with ceremonies to the Earth, according to the customs of our ancestors. Also, it should be included in the curriculums of schools and colleges. Also the minister of health should be more proactive and promote and educate people and especially the youth about the nutritional values of A/K/C. What hopes do you have for your children and family with regard to the historical past and respect by crops and land? It would be important to develop synoptic tables of traditional products where the nutritional values of A/K/C and other traditional products can be disseminated.</p>
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Figure 36. The chacra of Genaro & Martina. Now is time to talk. By Orcherton, 2011

A/K/C, this ancient cultivar, is also a guardian of our attitude and behaviours. A/K/C "knows" what you do, when you do it, and why. Families give this ancient cultivar a judging role. A/K/C is also an announcer of death and this happens when there is an extreme production of it. Changes in traditional crops have also change the ways the farmers have connected with the *chacra*. Now days, the new generation has forgotten... My dad used to say, *comansilli micunapa* (we eat what we sow)...

Genaro Sanchez, 2011.

**Community Settlement,
Group, Education**



Figure 37. Genaro close to Mango tree showing the worms in the mango. By FM, 2011

How many in the family go to school? All my children go to school I have one in primary school and two in secondary school. **Did you receive any type of training in agriculture or in A/K/C?** Yes, most of the training has been about our plantations; mango, avocados, grapes... **At what age do the children begin to help on the chacra?** My kids started small, between 8 to 10 years. At that time my mother was still alive and my children enjoy her company in the chacra. And she liked to be in the *chacra* with the kids. **Your whole family participates in the chacras' work? How they get organized?** The entire family participates in the farm. The children have to go to school in the morning, after school they help. Also they help on weekends and holidays. They help in maintaining the crops and feeding the animals; give food and water to the animals, clean up, reel off corn, picking up trash and help in any activities is needed in the *chacra*. Martina: My husband is the one who knows what is needed to be done in the chacra.

Community Land Use



Figure 38. Genaro sharing the history of the land. By FM, 2011

Does the chacra belong to you? Yes, it was given to me as part of a payment for the time I worked for the cooperative, here in Cachipampa. **What type of land use do you have?** I have A/K/C (almost 5 types), beans, maize, cassava, plantation of avocado, mango, grapes, nonies... **What do you know about the history of the land you are in now?** Here lived the Incas. You can see Incas' roads. For example, in Rubina there is the castle which is located in Palca, it belongs to the Yautan district. There is a tunnel called Poctao, because it is located in poctao. The tunnel is almost two meters tall. I walked into the Tunel, but only short distance. I couldn't go further it was too dark. People said in Quiquis is located the other end of the tunnel. We believe that the tunnel has another outlet elsewhere. Some Elders said, the tunnel arrives at the castle of Palca, communicates with Chavín Temple, the other with Sechin, and also some believe that there is connection with Cuzco. Beside that very close to the Ullampas Hill is the shape of a sleeping Inca prince. When rain the Ullampas Hill becomes green. They said that the Ullampas is the Machu Pichu of Yautan.

Folk Ecology & Beliefs



Figure 39. Martina & Genaro holding the AKC variety they preserve in the chacra. By FM, 2011



Figure 40. Genaro holding an old sample of AKC while sharing his stories. By FM, 2011

Traditional Oral History, Learning & Culture



Figure 41. Genaro's tears of emotions. By FM, 2011

When someone in your family gets sick, what do you do first? Now days, we go to the medical post, but before that we used to see Guillermo Portilla. He cured us. He died almost 10 years ago. He knew so much about herbs, used eggs, guinea pigs to cure and heal our bodies. He used to touch our pulse and knew what was affecting us. The medical post probably has almost 15 years in our community. Even though the medical post was there, people still visited don Guillermo (when he was alive). **Do you use AKC alone or in combination with other crops or use as a traditional medicine for you and your family?** Genaro: I do not know. Martina: Mothers, who are breast-feeding babies, boil the leaves and drink it. It helps to increase their milk. Some herbs acquire their name according to its serving; for instance the herb that cures *susto* is called the *susto* herb... **Do You know something about climate change?** In the summer is very hot (December to March). From April to September is winter, after September comes spring, and then the fall. In winter appear diseases for example, for the children appear the flu. The climate has changed, because all the sudden things change from heat to cold... This damages the crops and the flowering of the fruit trees. Every time this happen, we have to use sulphur to save the plants...

What kind of stories, legends can you tell about A/K/C? My parents told me that A/K/C has an Inca origin. And they survive on A/K/C, potatoes, and all the things that the sierra produces. Another is that if one of us go to the *chacra* and try to find A/K/C sometimes that person can find more than the other, it seems that A/K/C hide, here we believe that it has to do with how you are; a good or bad person. **How do you think the changes in the environment will create changes in maintaining your tradition and culture alive?** Sometimes, hot times require more water. For example, in summer we have to irrigate twice because in some cases more heat can make things to produce more. In winter we only watered the crops once and produce less and the plant only gives leaves. We grow more in summer. You need to know to grow A/K/C and other crops. For instance, tender moon only made A/K/C'



Figure 42. Genaro sharing with great emotions his experience when he did not followed the moon cycle.
By FM, 2011

leaves grow on the contrary in full moon it produces more. For example, with other crops such as maize, you have to cut it in full moon; otherwise it gets worms and mothed (apolillado). All the knowledge of the Moon comes from the time of our grandparents. We guide ourselves in the *chacra* with the moon...**Sra Martina:** The tender moon is like sickle and the full moon is well rounded. It sometimes appears half rounded and we should wait. We have to take advantage when the full moon is here. In tender Moon we only clean the *chacra*.

Climate Change

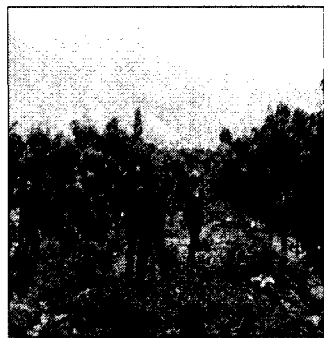


Figure 43. Genaro & Martina talking about the problems they have with their crops. By FM, 2011

Do you know how to tell when it is going to rain? Or when is it going to be to dry and hot? We have a signal if it going to rain or not. I have faith in God and in the beliefs that our Elders have passed on. For example, there is a mountain called Ullampas, when the cloud on top of Ullampas has the shape of a hat it means it will rain. My dad use to say that the Ullampas now is with the hat. Observing all this details allowed us to prepare ourselves with different type of activities and prevent any critical event. Moreover, the mango tree when is not flowering in its time, means that dryness and not rain. Also, there are birds that get altogether and made sounds of crying (el Guardacaballo). **Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?** I have seen many swallows, appear all the sudden, making so much noise, they fly up over us. What is curious is that this swallows are not seen often. Only they come when is going to rain. Each month they appear, huddling and making a circle, this only happens in times of rain. **Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions?** Yes, this is a small community we all share when we get together. For Example, we all know that this year it going to rain hard because the mango tree is giving too much flowers (flourish).

Traditional Agriculture Practices



Figure 44. Martina holding (proudly) a Nispero⁴¹ fruit that she planted. By Orcherton, 2011

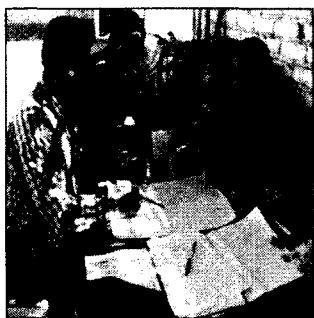





Figure 45. The family skeching (map) the location of crops in the chacra. By Orcherton, 2011

Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? My parents did some sort of ritual... my father use to say: "in the name of God we are sowing, and God will make it produce." I know in Cuzco (Andes) they do rituals, they make their prayers. Here in the Coast, many things have change. We have seen on TV that people, especially, from the Andes still practice their rituals. They dance and do many other things. I remember long time ago, when sowing season started they prepared food for everyone, they prepared special beverage called *chicha*⁴² and they bless the land for providing us, in all! Now days I grab the shovel and make a cross on the soil before sowing and ask God for his blessing



Continue... Dona Martina: In my case my dad when planted A/K/C and other crops, asked my mother to cook guinea pigs and buy beer to eat and drink. This ritual helped us to have a good harvest. My parents did rituals because they respect the *chacra* and care about. They were in the *chacra*, they worked very hard all day, everyday. After my mother died (she died first) things change, my father became so sad that he stopped doing many of the things he did with my mother. Now, we do not follow the traditions, because we do not plant A/K/C, cassava, maize, as my father did. The majority of the crops in our *chacras* are fruit plantations. **How do you care for AKC while growing in the field and did you practice any ritual at the final phase?** It is good to feel happy when you put the plant into the soil, from it we eat. Also when we sell our products, with that money we pay the education of our children. If we work unhappy, the seedling does not grow well and things go wrong. We must go joyful to our family farm and the soil produces more. When one goes to the farm one goes with affection to work with our *Pachamama*. Same with the seedlings we must guard it with care and it will produce. I am amazed how a little seed give us so much. **What do you do with the foliage of the plants especially A/K/C?** We give it to the rabbits, because the rabbit has several foals, with the foliage they can maintain

⁴¹ Nispero (loquat) scientific name: *Eriobotrya Japonica* (Retrieved from <http://en.wikipedia.org/wiki/Loquat>)

⁴² Chicha is a traditional beverage made of corn.

 <p><i>Figure 46.</i> Genaro showing (proudly) his Yellow avocado tree, which is unique in his community. By FM, 2011</p>	<p>good milk to feed their babies. We do the same with the pigs. Do you have animals in the farm? I have turkeys, ducks, guinea pigs, sheep, I cannot raise more animals because I have the plantations, and there is no place for the animals to run. Before, we also have corn, we fed them. What types of tools do you use in the farm? I use the shovel, peak, the pump for spraying, my father used the same. What plants do you usually cultivate together with A/K/C? Why? In the case of my farm, I now have the passion fruit planted jointly with my sweet potato. The passion fruit grows as vines so above as A/K/C walks to the side.</p>
<p>Culture & Traditional Role</p>  <p><i>Figure 47.</i> Genaro showing companion crops. By Orcherton, 2011</p>	<p>How can preserve what you know about A/K/C? What I remember from the past is that the workers, when we sowed corn I cooked good food and buy beer so that all workers can eat and drink well. That was part of saying thankful for the good harvest we had. We used to sit in the middle of the <i>chacra</i> and there we celebrated the good sow and harvest. Every time we did that we have the best harvest time. All of this makes our neighbours and other people who use to come to the <i>chacra</i> happy... Unfortunately, now days, we have plantations and we don't need workers or people from the community to help us. (In the case of fruit plantations, the person who buy the crops, come with their people (they cut and go).</p>
<p>Nutritional Knowledge</p>  <p><i>Figure 48.</i> Martina talking on the nutrition of AKC close to the cooking área-chacra. By FM, 2011</p>	<p>What kind of dishes do you prepare with A/K/C is this the way in which you taught your parents or grandparents? My mom taught me that we can eat A/K/C with ceviche, boiled with lentils, stew, and for breakfast we like fried. Do you know the nutritional values of A/K/C? Is good for the hair and nails and it have enough vitamins and now days they have <i>chuño</i>⁴³ made of it. Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C? Sometimes I do, but I stay home most of the time. How do you think changes in the</p>

⁴³ Sun-dried Hauro potato varieties, where all of the starch is removed, generally used in soups and main traditional dishes. Now days is also possible to make chuño with AKC.

	<p>environment are affecting the way you prepare your meals? Changes affect our crops with new diseases that we do not how to combat. We have to buy pesticides to save our crops. We eat everything our chacra produces. For instance, A/K/C grow well but it is still too small and do not taste good as before.</p>
<p>Farm Economy</p>  <p><i>Figure 49. Martina feeding the chickens, ducks,... selling them help to have an extra income. By Orcherton, 2011</i></p>	<p>Do you sell A/K/C or other crops? I sell everything I produce in the <i>chacra</i>. If yes, how does it help you in your home income? My income depends on what I produce in the <i>chacra</i> and how much of it I can sell. Do you have other sources of income? No, only what my chacra produces. My husband, Genaro, bought a mototaxy; a kind of moto attached to sits on the back, to transport people or anything, it is three-wheeler transportation. We use it to take our produce to the local market. Sometimes our neighbors need to transports their produce as well and my husband drives them and they pay for that service. It sometimes generates an extra income...</p>
<p>Local Perception & Evaluation of the Farm</p>	<p>Do you think mixing trees; crops and animals (agroforestry system) affect (good or bad) crops? Why and How? It is good to combine crops. For example, When the harvest of passion fruit ends, I have mango to sell, when mango ends I have carambola⁴⁴</p>
<p>Community Relation & Travel</p>  <p><i>Figure 50. Family holding AKC and presenting their respect (ending interview). By Orcherton, 2011</i></p>	<p>What are your hopes for the community? If we can learn and practice our ceremonies. It is necessary that one older person to instruct and re-teach us. If one older person comes and teach us, we can learn and do it. I have seen how people practice their rituals on TV, they sing for all, all work together. What hopes do you have for your children and family? It is important; the children understand that the <i>chacra</i> gives us what we eat. We must present our respect by doing the rituals. God puts the blessings. We are parents; our mother (pachamama) gives us to eat. New generations are now forgotten. My dad used to said, comansilli micunapa (they would eat what they planted).</p>

⁴⁴ Star-fruit (*Averrhoa carambola*).



Figure51 . The Chacra of Maria Consolacion Guarmayuco. Now is time to talk. By Orcherton, 2011

When one of my children gets sick, I cure him with the herbs that I get from my *chacra*. I do boil herbs and give it to him. But if my son does not improve I have to take him to the doctor. It costs too much to see the doctor. I have to pay the doctor; I have to sell my animals...

Maria C. Guarmayuco, 2011

**Community Settlement,
Group, Education**



Figure 52. Finding my way to Maria C.'s chacra. By FM, 2011

How many in the family go to school? All my children finished primary school and only one secondary. I do not know to read and write, I wanted my children to go to school. **Did you receive any type of training in agriculture or A/K/C?** No, I learned watching and doing how others work in the chacra. **At what age the children start helping in the chacra?** **Does the whole family participate?** My children started when they were very young. My husband left me when my children were very little. I work hard with my children and this was good because they learnt to work and appreciate the chacra.

We also built our own place to be (rooms). We built that one (Maria pointed proudly a big room with door and windows). There, used to be a huge rocks almost impossible to brake, but me and my children and with some extra help, did. We broke those rocks with my children, little by little. Now we have a place.

Community Land Use



Figure 53. View of maize and mango. By Orcherton, 2011

Does the chacra belong to you? Yes, my son and I live here. **What type of land use do you have?** I have A/K/C, green onions, lettuce, maize, and plantation of mango. **Do you know the history of the land you are in?** No, I don't know. I came here when I was 7 years old; this place was full of rocks and still is. We worked hard to build our home and *chacra* in top of this hill. We broke some of those rocks and have this room. Little by little we will be building other rooms.



Sometimes, we get together to celebrate events in the community, my neighbors have stories about this land...

Folk Ecology & Beliefs



Figure 54. Maria C. Living area. By FM, 2011

When someone in your family was sick, which is the first thing you do? if one of my children (all boys) get sick, I would cure him with herbs. I have those herbs in the *chacra*. I boil them and give it to him. If that does not help I have to take him to the medical post. It costs too much, and I have to sell my animals to buy medicine. For example, my son, has headaches, we call it *chocaques*. I use a herb called Saint herb (*yerba santa*). Normally, I have to rub it on him. I have to pull his hair to take the air out from his head. It releases his pain. **Do you know if the A/K/C (SP) has some medicinal virtue or is used as a traditional medicine by whether alone or in combination with other plants?** No I only know that if you eat

	<p>you keep yourself healthy. Do you have any spiritual belief related to the cultivation of A/K/C? No, I do not know. You know something about the climate change? What I know is that in the month of November until April there is rain in the Puna. From June to July gets cooler. In August is no longer cold. September to December is hot</p>
<p>Traditional Oral History, Learning and Culture</p>  <p><i>Figure 55. Sharing stories on diseases that damage her crops. By FM, 2011</i></p>	<p>What kind of stories, legends can you tell about A/K/C? I do not know, I didn't have parents to teach me...I only obeyed my several aunts. They used to send me to collect potatoes, and I was good at that, I use my little basket to collect little by little and I used to get almost a sack full of potatoes. One of my aunts used to come with the donkey to help carrying the sack. I can only tell you this, I have teach my children to work hard I passed on them what I know. How do you think the changes in the environment will create changes in maintaining your tradition and culture alive? We have not water and almost all my plants of A/K/C have something white, like a powder, all over. My son said that is a disease, and we have to fumigate the chacra with pesticide, because my other crops are also affected.</p>
<p>Climate Change</p>  <p><i>Figure 56. View of diversified chacra. By Orchardton, 2011</i></p>	<p>Do you know how to tell when it is going to rain, or to be dry and hot? I know when the clouds gets dark the rain will be here. It starts with a normal cloud (color white) and then little by little gets dark. Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather? Animals help us to know when the rain will come. For example; the <i>guardacaballo</i>⁴⁵ (local name of a bird) sing several times, and the ducks move their wings very often. Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions? (No verbal answer)⁴⁶.</p>
<p>Traditional Agriculture Practices</p>	<p>Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? No, I do that after the harvest. How do you care for A/K/C while growing in the field and did you practice any ritual at the final phase</p>

⁴⁵ The species name for this bird is *Crotophaga sulcirostris*.

⁴⁶ At this point someone was calling her. After I asked the question, she moved her head (without words) in affirmation of yes, and went out. I believe that some members of the community were planning the celebration of the farmer's day (día del campesino)



Figure 57. AKC and green onions (sell in the market) By



FM, 2011

Figure 58. With the foliage of crops: feed the animals. By Orcherton, 2011

of the harvest? After harvesting, I say the following: " Father (to our Lord) thank you Lord for blessing us on this earth for giving us food" **What do you do with the foliage of the plants especially A/K/C?** I keep something for the seeds and give to the animals. **Do you have domesticated animals in the farm?** Yes, I have I have guinea pigs, docks, sheep, cat and a dog. **What types of tools do you use in the farm?** I use the shovel, peak metal, chuzo and axe to cut the firewood. **How do you care for AKC while growing in the field and did you practice any ritual at the final phase of the harvest?** I have not learnt anything from my parents as I was an orphan. I have aunts who did not know much about the farm. However, I always ask God to help me and my children in our *chacra*.

What plants do you usually cultivate together with A/K/C? **Why?** After I harvest my A/K/C I sow maize, and them A/K/C again and cassava. A/K/C is good when you put fertilizers (chicken, ducks, and guinea pigs excrement) into the soil and them hilling-up (aporque), and watering. Now days, we don't have enough water and the soil has been overused. I can see that in the quality and quantity of the cultivars we produce. Many things are changing and I feel that our local authorities do not care. They do not come to our *chacras* to see how things are going...

Culture & Traditional Role

How can preserve what you know about A/K/C? I've been an orphan and nobody has taught me, I have learned watching what other people do in their *chacras*; how they work the family farm, how they sell.

Nutritional Knowledge



Figure 59. AKC and beans for supper. By FM, 2011

What type of dishes do you prepare with A/K/C? We boil and roast A/K/C and we usually accompany any dish with it. **Do you know the traditional value of A/K/C?** No I do not know. We eat because taste good and I use its leaves to can feed my animals. **Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C?** Yes, at times when there are activities in Yautan; we get together and we talked about many things. **How do you think changes in the environment are affecting the way you prepare your meals?** We do not have water, and this is what is affecting us.

<p>Farm Economy</p>  <p><i>Figure 60. Guinea pigs are part of Maria C. Main income.</i></p>	<p>Do you sell A/K/C or other crops? If yes, how does it help you in your home income? I sell, everything my chacra produces. I also sell my animals and livestock. Before, I used to sell more A/K/C now I have only a little bit in some areas of the chacra, to keep the seeds and varieties alive and to always have it available to eat. People come to the chacra to buy different things. As you can see (Maria pointed out her mango plantation) the mango I had is the kent type and others types too, but people ask for this variety they like it.</p> <p>Now, I am worried, because in some areas the mango did not grow well; they are too small and have worms...</p>
<p>Local Perception & Evaluation of the Chacra</p>  <p><i>Figure 61. Sharing way of knowing & doing to secure food every day. By Orchernton, 2011</i></p>	<p>Do you combine crops in your chacra? Do you think that the fact of combining trees, crops, animals (this is known as agroforestry) improve or affect your crops? I sow a little bit here and there, they grow well. Combining crops help us to have food all year round.</p> <p>As you can see, my chacra is not only in one place, over there (she pointed to her right side) green onions, AKC, lettuce grow well and I try this year other cultivars.</p> <p>In the other side, I have maize, AKC, and other varieties of mangos and avocados trees. I have learnt that in some locations some crops do well by themselves, but also if I plant them at the same time with others it works well...time tells...</p>
<p>Community Relation & Travel</p>  <p><i>Figure 62. Maria C. hopes Future will be better. By FM, 2011</i></p>	<p>Hope you have for your community, especially in rituals and ceremonies and respect to the Earth? I hope that my current condition will improve. What hopes do you have for your children and family with regard to the historical past and respect by crops and land? I do not know, I just want the new elected mayor help us. And has more interest in helping us. At this point he is not doing anything. In this community all of us worked very hard all our lives. I only hope that my children will do well and have better opportunities then I.</p> <p>We are always open to learn... I am glad that my children, at least, know how to read and write and they can look for better jobs. I have one of my sons living with me. He likes the chacra, he helps me and helps other neighbors (it provides and extra income for us). He couldn't finish high school...</p>



Figure 63. The Chakra of Alejandro & Marta. Now is time to talk. By Orcherton, 2011

All children and young people should participate. We have to get together and unite with our authorities, perhaps a meeting or an Assembly; I have spoken to the authorities in the municipality, we must recover what our elderly person wants to share. I remember one day I talked to the Mayor about this need... We must find a way to encourage and motivate our children.

Alejandro Llantos, 2011.

<p>Community Settlement, Group, Education</p>  <p>Figure 64. Alejandro & Marta Researcher reading the <i>Research Informed Consent</i> content, By FM, 2011</p>  <p>Figure 65. Alejandro & Marta sharing their stories on the area of the medicinal herbs By FM, 2011</p>	<p>How many in the family go to school? Alejandro: four of my children completed high school and only 1 receive higher education. Marta: my son is 10 years old and he is going to primary school. After school he helps me in the <i>chacra</i>. Did you receive any type of training in agriculture or A/K/C? Alejandro: I have not received training in A/K/C, but I did in fruit plantations. I also went to Lima to the Agrarian University of La Molina for training. It was organized by SENASA⁴⁷. It was mainly in agriculture and livestock. I learned a lot because those new skills have helped me to manage my plantations and animals. However, in the case of A/K/C, cassava, maize I use the same system that my father taught me. Marta: I received training in plantations of avocado and fruit trees. At what age the children start helping in the <i>chacra</i>? Does the whole family participate? We all work in the <i>chacra</i>. The children started between 6 to 7 years old. Boys go to the <i>chacra</i> and girls help their mothers in the kitchen. We all try to cooperate, my sons helped in feeding the animals, watering the crops, cut the pastures for the guinea pigs. We did this early in the mornings then they went to school.</p>
<p>Community Land Use</p>  <p>Figure 66. View of the <i>chacra</i>. By Orcherton, 2011</p>	<p>Does the <i>chacra</i> belong to you? Yes, the farm belongs to both of us. The community awarded a piece of land to us. What type of land use do you have? Our <i>chacra</i> is very diversified, we have what we eat daily: Maize, A/K/C, Chivatito beans, lentils, cassava, oranges, strawberries, star fruit, Avocados, Do you know the history of the land you are in? No, we don't know. We did not found anything in this part when we built our house or working in the <i>chacra</i>, but my brother said that he found pieces of Incas artefacts in his <i>chacra</i>.</p>
<p>Folk Ecology & Beliefs</p>	<p>When someone in your family gets sick, which is the first thing you do? We use herbs to release the pain in stomach and for the cramps in diarrhoeas, for example, when we have problems with the flu or cold; we use eucalyptus, molle⁴⁸ and</p>

⁴⁷ Servicio Nacional de Sanidad Agraria del Peru (SENASA) - Peru National Agrarian Sanitation Service.

⁴⁸ *Schinus molle*, also known as the Peruvian pepper tree.

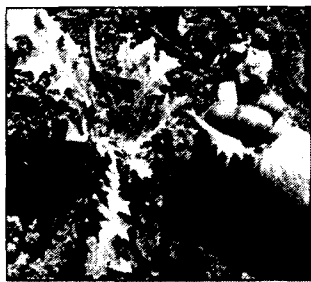


Figure 67. Marta with care and respect holds the leaves of one of the medicinal herbs/plants she has in the chacra. By Orcherton, 2011

we use A/K/C when the mother does not have milk for her baby. I do the same when my pigs and rabbits have babies. **Do you know if the A/K/C has some medicinal virtue or is used as a traditional medicine by whether alone or in combination with other plants?** It helps to increase the milk of the mother who is nursing. **Do you have any spiritual belief related to the cultivation of A/K/C?** I do not have specifically on A/K/C. But, for us there is a spiritual belief in the moon. **Do You know something about climate change?** In July and August used to be cold in the lower part. Climate change affects our crops. For example; our cassava falls very young and this happen also with the other crops. For our plantation when is too cold fruits and other product delay their growing and this delays the harvest season.

Traditional Oral History, Learning & Culture



Figure 68. Alejandro touches the land and emotions come to him while recalling memories. By FM, 2011

What kind of stories, legends can you tell about A/K/C? I remember we have our animals that we took to the mountain to feed them. My father told me that beside your lunch "if you go to the mountain you should bring coca leaf" We must always remember to salute the mountain. There are times that the mountains do not allow you walk. This is the time when you have to sit and eat and offer the coca leaf to the mountain. You have to do this ritual and you will be safe. We know that the mountain has owner, and everything in the mountain has owner. The Elders always told us that the mountains have owners. These mountains do not let you walk so the mountains can trick (you can get any diseases, headache...). There are also animals in the mountain that have been raised alone. For example, the mountain is the owner of the deer. We must not spoil or hunt these animals; you have to ask the owner of the animals that you need the animal (for food), and as permission if they can give it to you. Never, hunt too much; we must no kill in excess. The elders have always emphasized that not to take too much of anything. Only get what your family needs otherwise you will be punished. That's the law!

How do you think changes in the environment will create



Figure 69. Alejandro & Marta sharing stories in the area of AKC. By FM, 2011

changes in maintaining your tradition and culture alive?

Changes affect because there is changes in the behavior of the crops and animals in the *chacra*. I believe that culture is a demonstration of respect. It has been left from our Elders (ancestors), and it is important to preserve it.

I only hope that we can put it into practice. I also hope that the teachers in the rural school, in our community, can help in teaching our children more of the history of the Incas and our ancestors. Here in the *chacra*, we all work together and I believe that is how we keep what we know on agriculture alive...

Climate Change

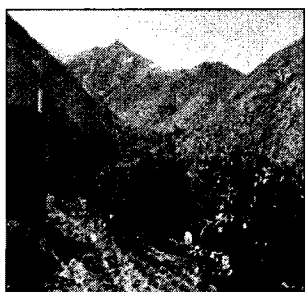


Figure 70. View of the mountains (sacred). By Orcherton, 2011



Figure 71. Alejandro explaining how by observing his crops help to predict changes. By FM, 2011

Do you know how to tell when it is going to rain, or to be dry and hot? We learnt because we observe all things around. I guide myself for the dark clouds, sometimes it gets dark and we know that it is an indication of rain. **Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?** **Marta:** There are animals who visit us in times of rain. For example, the sorzal sing and sing for us this means sorzal is calling for water. Doves do the same. **Alejandro:** for me I have observe that the mango plant gives lot of flowers (when flourish) especially in the side where the sun born. Elders used to say when there are many flowers in the mango plant, is going to rain a lot. For example, last year the mango tree did flourish well and we had lot of rain. This year did not flourish well; we did not have rain. **Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions?** Yes, when we get together or work in our *chacras* we talk about many things. In the case of predictions, I do, because I want to know and see if we coincide in our views. In all cases is what we do, we always converse.

Traditional Agriculture Practices

Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? We know when A/K/C is ready to be harvest. Knowing that we prepared the other part of the soil for sowing. We choose the



Figure 72. Alejandro & Marta narrating stories while walking in the chacra. By FM, 2011




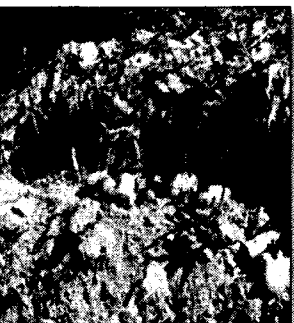

Figure 73. Marta presenting her greetings to the land with great respect. By Orcherton, 2011



Figure 74. Foliage to feed the guinea pigs and rabbits. By Orcherton, 2011

best samples of our A/K/C and sow them. But before that what I do is to ask the Lord to bless all our crops **How do you care for A/K/C while growing in the chacra and did you practice any ritual at the final phase of the harvest of A/K/C?** I use organic fertilizers produced by my guinea pigs, the rabbits, chickens and ducks. We do the sowing of A/K/C in full moon. And my father taught us to be always respectful with the chacra. During harvest time, our Elders have a drink (chicha) in their little containers. This is the way we celebrate it. Also, for harvest time, we had mingas⁴⁹ or rantin. There are still people who practice the mingas. But in my case I pay someone to help me during harvest, because I also get very busy and cannot help the others if they had helped me. Unfortunately, our life styles are changing and our traditions with it. My father used to pray to San Isidro Labrador the Saint of the agriculture. I remember my father used to say, “San Isidro, you are the farmer you are the one who prepare the soil...” **What do you do with the foliage of the plants especially A/K/C?** I use some of them for the next sowing of A/K/C and give the rest to my rabbits, guinea pigs and other animals. **Do you have domesticated animals in the farm?** I have cows (14), donkey (1), turkeys (10), hens (5), ducks (8), rabbits (15), guinea pigs (60). **What types of tools do you use in the farm?** Steel bar (barreta), pick-axe and chuzo (traditional hoe) to turn over the soil, the shovel to open furrows. I made the part of where the chuzo is handle (usually, I use the branch of a tree). **What plants do you usually cultivate together with A/K/C? Why?** My *chacra* is well diversified; we have corn, cassava, and vegetables (sometimes). **Marta:** my son likes to sow on his own. He is very curious and likes to see if his hands are good for planting. He goes to our neighbors’ chacras and our neighbors always share with him many things, especially when they have new crops. My son brings it to our chacra and sows them with so much care and he goes to see them every day... just to be sure they are growing well...

⁴⁹ Minga is an activity that are done with solidarity and the conversation that pleases the group “ (Apffel – Marglin, 1998, p. 107)

<p>Culture & Traditional Role</p>  <p><i>Figure 75. Alejandro & Marta sitting in their favorite: Getting together area. By Orcherton, 2011</i></p>	<p>How can preserve what you know about A/K/C? What I do is to have in my chacra diverse crops. For example, in the case of A/K/C I have different varieties some of them grow well others do not survive. I sow and harvest and harvest and sow again... by doing that I am assuring that my family will have food the entire year. In the case of A/K/C, after the first harvest, I re-sow (plant again) the vine cuttings of AKC and sow it again (in other part of the chacra). After the first harvest, we have the second that we called <i>rebusque</i>. Usually, in this second harvest the AKC are small, but we still have them and use them for our food, animals, and neighbors. This is in many cases how we preserve our AKC by planting and replanting different varieties several times in different locations of the chacra...</p>
<p>Nutritional Knowledge</p>  <p><i>Figure 76. AKC after harvest under the sun. By Orcherton, 2011</i></p>	<p>What type of dishes do you prepare with A/K/C? we eat A/K/C with most of our dishes it goes aside. We like to eat boiled, roasted, and fried. Do you know the traditional value of A/K/C? What I know is that A/K/C help babies and children to gain weight. And we have to give to the children by mixing it with beans, chivatito...Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C? Yes we get together when we had especial events, we talk and share ideas. How do you think changes in the environment are affecting the way you prepare your meals? Crops will be affected they do not taste the same...</p>
<p>Farm Economy</p>  <p><i>Figure 77. Selling guinea pigs-part of their main income. By FM, 2011</i></p>	<p>Do you sell A/K/C or other crops? Yes, Yes, we sell what our <i>chacra</i> produces and not only A/K/C. We also sell cassava, maize, avocado, beans, and sometimes we trade (I give some products that they don't have in their <i>chacra</i>, and they will give me products that I don't have in my <i>chacra</i>. What I produce in my <i>chacra</i> is more for my family to eat. However, what we produce in the plantations we sell. For instance, few minutes ago my sister told me that her neighbour want 12 kgs of A/K/C. So I have to go to the <i>chacra</i> to take it, prepare and send it. If yes, how does it help you in your home income? Our only income comes from our <i>chacra</i>. Do you have other source of income? No we don't our <i>chacra</i> is all for us.</p>

Local Perception & Evaluation of the Farm



Figure 78. Marta singing while showing her traditional way of sowing and caring for AKC. By FM, 2011

Do you combine crops in your *chacra*? Do you think that the fact of combining trees, crops, animals (this is known as agroforestry) improve or affect your crops? My *chacra* is well diversify we combine crops in our *chacra*. Some of them grow well others died. For example, I have maize, and maize is very important for us, because our animals have food and we can eat them and also sell them.

I believe that when things are in harmony and balance everything growth well in the *chacra*. And it is not only that my parents always shared with us that we must have a good attitude and be clean in our feelings when we go to the *chacra*. All the things in there (*chacra*) is full of live and life... sometimes we tend to forget that. .. I always remember that my father said, there is always space for something else to grow if you plant them with care and respect.

Community Relation & Travel



Figure 79. Marta (above) and Alejandro (below) participating in an event organized by the Municipality of Yautan. By Orcherton, 2011



Hope you have for your community, especially in rituals and ceremonies and respect to the Earth? It is important to revitalize customs, rituals and traditions, and this is important because it will help to enhance the values and culture of our community. I think, this can be a great discussion for our elders, adults, and youth. I will try to work towards unifying and getting together with youth, adults, and elders. I will try to talk to the principal of the school. I know we all should get together with our authorities to talk about how to recover our traditions and costumes. **What hopes do you have for your children and family with regard to the historical past and respect by crops and land?** I think will be good if the children and youth participate more actively in the community. As I previous mentioned, we need to participate more in the community. We have to get together with our local authorities and representatives to discuss our needs and concerns. I remember talking to the Mayor about this concern few years ago. Now, he is not there anymore we have new Mayor and other authorities that are working with him... I will try to talk again...



Figure 80. The communal chacra Rosa & Ruth. *Now is time to talk.* By Orcherton, 2011

Global warming is affecting us and we do not have the right over the water to irrigate our crops... What I remember with a great deal of melancholy, is when we arrived to the *chacra* to start our daily work. My father put A/K/C under the leaves that previously he picked from around the *chacra*. And then he fires it. This was the way how he roasted. We ate it in situ...was very good.

Rosa Huamanchumo

**Community Settlement,
Group, Education**



Figure 81. Rosa attentively listening the content of the "Research Informed Consent Form" By FM, 2011

How many in the family go to school? All my children finished primary school and only five of them high school. **Did you receive any type of training in agriculture or A/K/C?** Yes, I have participated in training such as: *How to use fertilizers, how to handle seeds, also about water irrigation process...* **At what age the children start helping in the chacra?** **Does the whole family participate?** My children started when they were between seven or eight. We all work, that is what my parents did with me and my siblings.

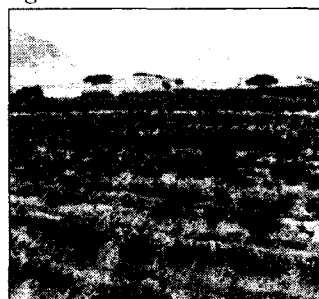
I think when we work together with the children; they learn many things. Sometimes, some of them do not want to do it, but we know that in the long run it serves them to learn...

Community Land Use



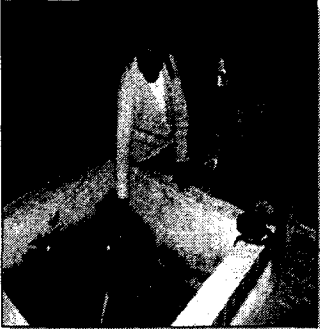


Figure 82. Walking on communal land. By FM, 2011

Figure 83. View of the mountains



(sacred) from the chacra. By Orcherton, 2011

Does the chacra belong to you? The chacra belongs to the community; here what we get is the right to use the community land. When my mother was alive, she had this right. When she passed away, she passed it to me. Now, I am officially declared *comunera* I have this right for more than 20 years. **What type of land use do you have?** My *chacra* is well diversified. For example, I have asparagus, I used to have maize, but it has already been harvested (now because we don't have enough water I cannot sow maize this time). I also have different varieties of A/K/C such as *conchucano* (yellow), the called egg yolk, *huambachano*. We had bad experiences with our A/K/C our *chacra* soil is impoverished and the soil started to get hard and salty. To survive we are thinking to change the rules of sowing... **Do you know the history of the land you are in?** Where I live it is a hill called Cerro Blanco, here in the community of Huambacho, I think it is the Moche culture that was developed there, I am not sure. They were making irrigation channels to bring water from *Chinecas* while they were excavation they found archaeological remains. They are trying to identify the time and the culture. I also remember that once, I had a friend who worked at Sechin and he gave me some yellow lima beans that he found while excavating the Sechin site; well I soaked them for a week. I couldn't

	<p>believe what I saw; it sprouted I was amazed that those very ancient lima beans could be revived.</p>
<p>Folk Ecology & Beliefs</p>  <p><i>Figure 84.</i> Rosa found a place to preserve the Huambacho variety of AKC (Casma Port) and sharing her knowing on AKC medicinal properties. By FM, 2011</p>  <p><i>Figure 85.</i> Stopping in a site with emotional and spiritual meaning. By FM, 2011</p>  <p><i>Figure 86.</i> Early morning checking if water is running in the stream. By FM, 2011</p>	<p>When someone in your family gets sick, which is the first thing you do? When we lived in the small farm I had a brother, who died, my mother said it was a damage that somebody did to my brother. When something happen with our health; we wanted to get the <i>curious</i> to make us better. But personally I' don't believe in this. However, the damage of my brother was passed on me. I was very sick with high fevers (nobody could explain what had happened). My mother made the healers to come and they did, and after the healers saw me; they told my mother that I had been damage. They took me to a hill where they made their prayers...they cure me...</p> <p>Do you know if the A/K/C some medicinal virtue or is used as a traditional medicine by whether alone or in combination with other plants? Yes, A/K/C has lot of nutrition it can boost the health of any anaemic person, because it fight against anaemia. Growing up in Huambacho, A/K/C for us was our main food. To my knowledge, now days they are pills of A/K/C. Dr. Genaro Villarreal told us that. He gave us some capsules of A/K/C to help us with our digestion. For example, I had heard that when you have gastritis do not have A/K/C. But according to the doctor that is false. Do you have any spiritual belief related to the cultivation of A/K/C? Yes, I do. When we prepare the soil for sowing we have to make the furrows. What my father taught us was to make a little hole and place the twig of A/K/C and with our foot to kick the soil to cover it. It seems foolish to believe, but the best quality and production of our sweet potatoes have been when we do it. From one plant of A/K/C we had about 4 to 5 kg...My father didn't want us to use the shovel when we sow A/K/C. People also believe that when there is too much production of A/K/C in the <i>chacra</i> (can be also other crops and animals) it is a sign that someone is going to die. This happened to us in several occasions. First, when my father died, and second, when my mother died. I remember a few months earlier</p>



	<p>before my father pass away our <i>chacra</i> produced more than 45,000 kilograms of maize... Do you know something about climate change? What I know is what we experience every day. Besides the daily news in the newspapers. For example, here in Casma we are in winter, but keep very sunny as it was summer. Only at night we can feel the cold.</p>
<p>Traditional Oral History, Learning & Culture</p>  <p><i>Figure 87. Rosa sharing the stories of AKC with her family. By FM, 2011</i></p>  <p><i>Figure 88. Part of traditions, By FM, 2011</i></p>	<p>What kind of stories, legends can you tell about A/K/C? What I consider a story is that for example A/K/C is a tradition in itself, before it was known as a "Turkey Roast" I remember when my mother told us that "come drink your coffee with the turkey roast" because nobody wanted to wake up at 5 am to buy bread. My mother would solve the problem by roasting A/K/C in the oven. At the same time she put to boil the milk and that was our breakfast. A large A/K/C and a glass of milk.</p> <p>How do you think the changes in the environment will create changes in maintaining your tradition and culture alive? Exports or non-traditional crops affect traditional crops from our community. We cannot sow lime beans, A/K/C, pumpkin that was common to sow in this area. Now days, the majority of our land is dedicated to export products. (as the majority of farmers feel oblige to rent their chacras) That is creating so much concern and put in danger the health of the families and specially their children. The food (traditional crops) used to go from the <i>chacra</i> to our cooking pots is getting lost in Huambacho. That worries me so much, there are many families who are very poor and have so many children. We need support from our local authorities...</p>
<p>Climate Change</p>  <p><i>Figure 89. Rosa checking humidity of the soil. By Orcherton, 2011</i></p>	<p>Do you know how to tell when it is going to rain, or to be dry and hot? By watching the clouds I can tell if we will have the rain. Also, when the black mountain (cordillera negra), has too much cloudiness is another sign of raining...and the rainbows can tell us. I remember we had the experience of <i>el Niño</i> in 1983, we saw the bursting thunder in the sea. We knew that thunder is in the highlands but not in the Coast. We saw tremendous lightning; I remember how scare we were with the</p>



Figure 90. Rosa showing the Huambacho variety AKC. By Orcherton, 2011

bursting. (From there I knew about *el Niño*. It created much disturbance and the people were very scared...

Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?

Yes, lots of birds (different kinds) appear, such as the canaries. Also, many iguanas, pacasos (type of reptile), and cananes have appeared in the trees of our *chacras*. They are announcers of rain. They live in the algarrobo trees (cananes). They eat *el faique of the algarrobo*. **Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions?** Yes, we get together, and those problems or any worries are our theme of conversation. For example, we were talking about the Cananes; they said that someone brought them in. However, I don't agree with it. Those animals appear by themselves naturally. They follow the changes in the environment. They predict the welcome of the rain and all is caused by climate change.

Traditional Agriculture Practices



Figure 91.. Ruth explaining the importance use of the AKC's foliage. By Orcherton, 2011

Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? Yes, I usually, first say the name of the Lord. He guides us in our work in the *chacra*. I said, "God, father, I am putting this little plant or seed so you can give us the product as it should be. I ask this with my heart, because we are your children, please do not abandon us." In addition, in Huambacho, we have San Francis of Assisi, he is our Saint (patron), and he is our huambachero. He is the guardian of all our cultivars ... **How do you care for A/K/C while growing in the field and did you practice any ritual at the final phase of the harvest of A/K/C?** We always ask God for guidance, we daily work in the *chacra* we are always observing what is going on, and we get to know. It is hard to explain how. **What do you do with the foliage of the plants especially A/K/C?** We use to feed the animals; sheep, cows. We also use the leaves and endings to help the mothers who are having problems having enough milk to feed the babies. **Do you have**



Figure 92 Rosa sharing memories of childhood. By FM, 2011

domesticated animals in the farm? Yes, I have sheep, I just have sold my cow and I also have pigs, ducks, hens, chicken, turkeys, guinea pigs, donkeys. **What types of tools do you use in the farm?** Peak and chuzo to turn over the soil, the shovel to open furrows and whenever possible I use the tractor to do that I also use the picota (an ancient tool that has the ending turned to one side; this is good to soft the hard lumps of soil. **What plants do you usually cultivate together with? Why?** What I do is when I sow A/K/C, I also sow peas in the same furrow and the peas can still be green and not complete ripe. Peas usually are ready in three months and sometimes I sow lentils too. I water A/K/C four times and in five month is ready to be harvest...we try this way and it works. My father used to do that.

Culture & Traditional Role



Figure 93. Ruth & Rosa traditional way to commute to the chacra. By FM, 2011

How can preserve what you know about A/K/C? One way to preserve what we know about AKC is by preserving its traditional way to propagate (sowing and harvesting) them in the chacra or in places were we want to preserve its varieties. This can work locally; community level. However, when we open to a bigger market (out of our own communities), we tend to forget or get lost. It is hard to preserve as things are changing and those changes are affecting us in a negative way.

But I believe that it is important to recognize and vocalize that our traditional crops are part of our traditions and our daily food.

Nutritional Knowledge



Figure 94. Sharing traditional ways of cooking AKC, By FM, 2011

What type of dishes do you prepare with A/K/C? We prepare several dishes that my mother used to prepare when we have special events at home and in the community. For instance, A/K/C in different forms such as boiled, fried, and roasted. One thing I remember my mother did to get the sweetness of A/K/C was to let it outside so the sun can dried it out. **Do you know the nutritional value of A/K/C?** Ruth: Yes, I used to be a communal promoter of health. I use to go and talk to the women and women with children. I always encourage them to make healthy choices with the little they have.



Figure 95. Sharing moment with one community member. By FM, 2011

And how important was to continue with the sow of traditional products such as A/K/C, potatoes, chivatito, lentils, maize...For example the maize shampoo a healthy beverages that our elders use to prepare in my time has been lost and it was very nutritious. I remember also that the animals were part of our daily food. It was a reciprocal sharing among members of the community. However, now days we are not keeping this traditional way of communal reciprocity alive. **Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C?** Yes, we all women get together in the Mothers or Women's club de Madres. We discuss what type of traditional dish to prepare for the especial events in the community. This gives us opportunity to prepare together and try new ways without changing much the traditional way. **How do you think changes in the environment are affecting the way you prepare your meals?** Yes, especially for the economic situation. Things are not like before, and everything has to do with the production. If changing in the weather, all the sudden, happens it damages the quality and quantity of the production...in the long run it seriously affects us.

Farm Economy



Figure 96. The pigs/hogs will be sell it constitutes an important source of income. By Orcherton, 2011

Do you sell A/K/C or other crops? Yes, I do especially huambachano, and the conchucano, (this has an intense yellow color), and salteño. These varieties have more demand in the local market. **If yes, how does it help you in your home income?** A/K/C is part of what we eat. At home we usually serve AKC as a side dish. And sometimes this helps as we do not have cash and buy things outside. **Do you have other source of income?** No, my only source of income is what my *chacra* produces and when I sell my animals and livestock. I have a big hog, soon we will have a community celebration, so I will be selling it. Practically, our *chacra* feed us and the animals. Sometimes my children come and help me with some extra money...

Local Perception & Evaluation of the Farm



Figure 97. Ruth & Rosa sharing their thoughts By FM, 2011

Do you combine crops in your *chacra*? Do you think that the fact of combining trees, crops, animals (this is known as agroforestry) improve or affect your crops?

It is good to combine and diversify our chacra. For instance, maize, A/K/C, and other traditional crops does not demand much care, they grow well by themselves and they secure food at home. If you try (eat) the huambacho variety you will know what I am talking about. At this time, I have asparagus (I have one hectare), we do not eat it, but we sell it. Now days it has a good demand in the market....

Community Relation & Travel



Figure 98. Ruth & Rosa with great hopes for the future. By FM, 2011

Hope you have for your community, especially in rituals and ceremonies and respect to the Earth? It is very important, since rituals have been created by our ancestors. We must know them and understand them. In the environment where we are we can improve lots of stuff, and in this sense our agriculture can become better and more successful. **What hopes do you have for your children and family with regard to the historical past and respect by crops and land?** It is essential that they should know our historical past. My hope is that families value it and continue in practicing and preserving. I think there is a mission that we must continue. We know, it is hard when we live in poor conditions, but we hope that things will improve.

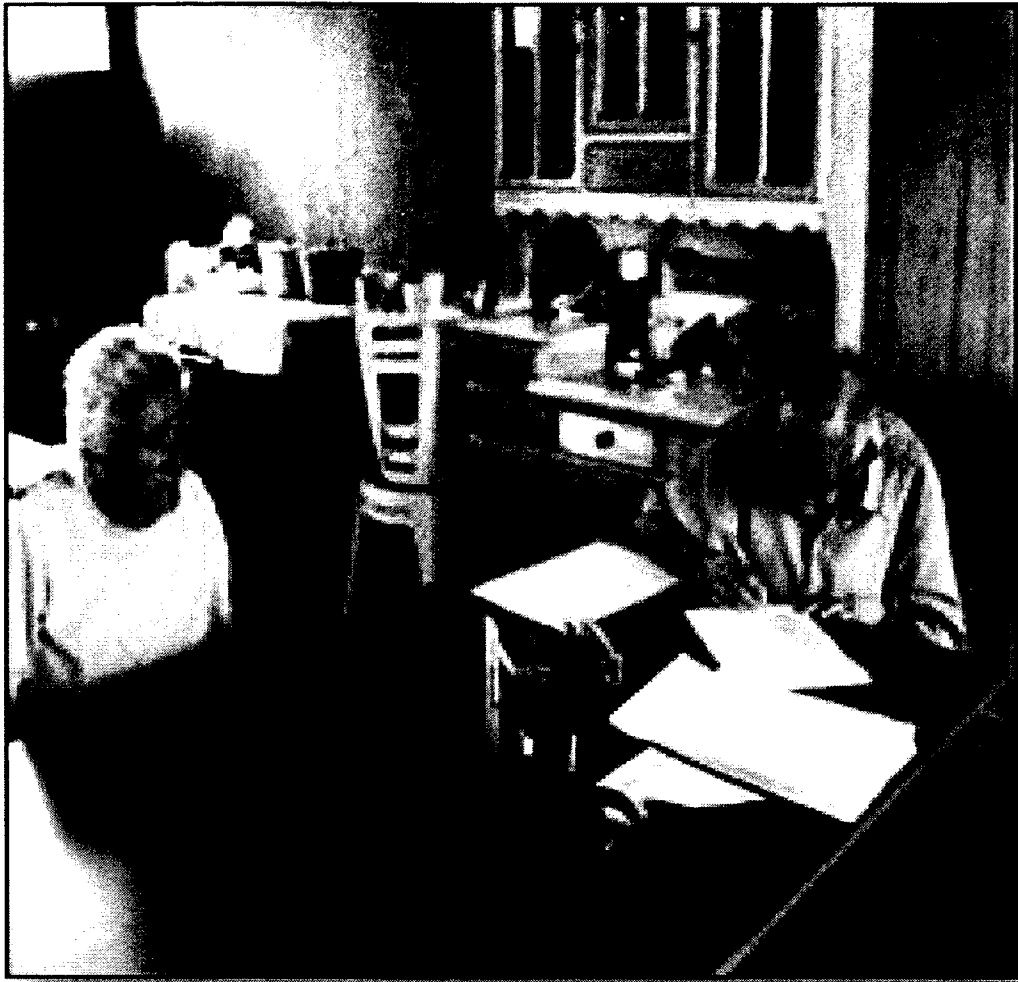





Figure 99. The chacra of Maurino & Herminia. Now is time to talk. By Orcherton, 2011

My children have been devoted to their work outside the *chacra*. Each one has their own life and profession. I hope that they remember the little that we shared during their childhood that we spent with in the *chacra*. Now they come with their cars only to visit us and take some products from the *chacra* to their homes. Perhaps the good thing about all this is that my children and their families come and visit. And this short time is precious.

Maurino Duran Palma, 2011.

<p>Community Settlement, Group, Education</p>  <p>Figure 100. Maurino signing the Research Informed Consent Form. By Orcherton, 2011</p>	<p>How many in the family go to school? All my children went to school. Did you receive any type of training in agriculture or A/K/C? Yes, I have received training in how to manage pesticides in the <i>chacra</i>, but nothing in A/K/C. What I know is what my father taught me and in observing him doing. At what age the children start helping in the <i>chacra</i>? Does the whole family participate? My children started young, after school they came and helped and this is the way they learnt. We all worked together. My daughter, Maria, she is very good in the <i>chacra</i>. She likes and has a good hands, because everything she sow growth. She lives close to us, my other children do not have the same desire as she has.</p>
<p>Community Land Use</p>  <p>Figure 101. View of the <i>chacra</i>. By Orcherton, 2011</p>	<p>Does the <i>chacra</i> belong to you? Yes, it was my father inheritance What type of land use do you have? I have A/K/C, cassava, short pastures (to feed the animals), star fruit, grapes, mangoes, avocado plantation... medicinal plants and herbs... Do you know the history of the land you are in? What I know is that close to the hills they have found “huacos” (traditional ceramics). I also know that behind the <i>chacra</i> are those mountains (Maurino pointed out) those are sacred mountains. People always talk that they have found bones, mummies and huacos...</p>
<p>Folk Ecology & Beliefs</p>  <p>Figure 102. Maurino presenting respect to the land. By FM, 2011</p>	<p>When someone in your family gets sick, which is the first thing you do? We go to the hospital; Chimbote or Lima (this is when our medical condition is serious). Herlinda: For example in 2005 I have an operation in my head in Lima. Maurino: When I have diarrhea, I use herbs. For example, <i>Paico</i>⁵⁰ is good for this. My mother taught me how to use herbs from the <i>chacra</i>. We have not known a healer or doctor traditional. Do you know if the A/K/C has some medicinal virtue or is used as a traditional medicine by whether alone or in combination with other plants? We give A/K/C to the pigs especially when they have babies. It increases their milk.</p>

⁵⁰ Paico (*Chenopodium ambrosioides*) is an herb from Peru; it grew wild in the chacras (La casa del Corregidor, 2002-2011).



Figure 103. Climate change brings drastic changes in our crops. By Orcherton, 2011

Do you have any spiritual belief related to the cultivation of A/K/C? I don't know if you can call this spiritual experience. As I mentioned, my father was a man very dedicated to the *chacra*. In several occasions, when he sent us to do something, we did, but all the sudden we saw him there in our way to do things. It is hard to understand but I think he has a special connection with the *chacra*. **Do you know something about climate change?** Here we have two climates well defined the summer and winter. People, who work in agriculture know that fog brings diseases to our crops, also in summer when rains that brings diseases. It affects us much.

Traditional Oral History, Learning & Culture

Figure 104. Maurino and



traditional tool: Chuzo that he uses daily in the chacra. By Orcherton, 2011



What did your parents do in the past while growing AKC? My parents usually did the rituals with cultivars such as rice and maize. They did it towards their greetings to the soil. He had (drank) his beer and poured a little bit to the soil. He did this ritual especially during harvest time. To express his thankfulness for the production. I did not continue with my father teachings, because when I was young I left the family and start working as a truck driver. **How do you think the changes in the environment will create changes in maintaining your tradition and culture alive?** Climate change affects us, for example when the fog appears brings pests and diseases to our *chacra*. This affects our fruit plantations and other crops in the *chacra*. For example, in the case of A/K/C, I could not control the plagues, which I control only with herbs from the *chacra*, but now I have to buy and use pesticides. Unexpected changes in the weather hurts. I've seen how the worms ate almost all the leaves of A/K/C, so I decided not to plant A/K/C in quantity only for consumption.

Climate Change





Figure 105. View of the Mountain. It helps Maurino to predict changes in the weather. By, Orcherton, 2011

Do you know how to tell when it is going to rain, or to be dry and hot? Yes, It is almost nearly 15 years that I confirmed my prediction. The mountain that you see there (don Maurino pointed it from his house) make a special sound, which looks like a heavy stones falling down. I have shared this with my neighbours and we know that after that strange sound always rain. **Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?** In the sierra, when leaves fall that there are telling us about changes. But here in the Coast is difficult to

	<p>know it. Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions? Yes, when we get together we have always a conversation in many other topics, but about my prediction I have shared it with my friend Marcelino; because, we have shared this knowledge. I also mention it to my son Richard, but I do not think he is interested.</p>
<p>Traditional Agriculture Practices</p>  <p><i>Figure 106.</i> Maurino showing the area where AKC is located. By Orcherton, 2011</p>  <p><i>Figure 107.</i> Alfalfa another to feed the guinea pigs. By Orcherton, 2011</p>	<p>Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land? I do my ritual because I have grapes in a large numbers. I tell father God that to bless my crops and the crops of my neighbours ...How do you care for A/K/C while growing in the field and did you practice any ritual at the final phase of the harvest of A/K/C? The A/K/C I have is only for our own consumption and at the end of the harvest of our crops (especially the ones we have as a plantation) I do the rituals, because we want to thankful the Lord for looking after our <i>chacras</i>. What do you do with the foliage of the plants especially A/K/C? Before we had boars and they ate it. When A/K/C came out very small, we give to the animals. Do you have domesticated animals in the farm? Yes, we have; ducks, chicken, hens, goose, and Guinea Pigs. Before I had more animals, because with the production of the <i>chacra</i>, we were able to feed the animals... Now, this is not possible because of our plantations (grapes, avocados, and mango). The animals that I have now are in a different part of the <i>chacra</i>. What types of tools do you use in the farm? We use the <i>yunta</i> to flip the soil and to make furrows. It works well. Then, we use the shovel for almost everything. We usually have more than one shovel at home. I learnt to use them by watching my father when he I used to help him in the <i>chacra</i>. He taught me how to use it properly. What plants do you usually cultivate together with AKC? Why? At this moment, Aji panca⁵¹ (special kind of red hot pepper) and cassava (<i>manioc</i>)...</p>

⁵¹ Aji Panca: *Manihot esculenta*. (La casa del Corregidor, 2002-2011)

<p>Culture & Traditional Role</p>	<p>How can preserve what you know about A/K/C? We can preserve by practicing what our parents taught us, and I have to be honest with you that I have not been using my herbs to cure diarrheas as I used to do. My mother taught me about paico⁵².</p>
<p>Nutritional Knowledge</p>  <p><i>Figure 108. AKC daily food intake. By Orchardton, 2011</i></p>	<p>What type of dishes do you prepare with A/K/C? We eat A/K/C boiled, roasted, creamy A/K/C with milk, and we also eat it fried. Do you know the nutritional value of A/K/C? Herlinda: No, I did not receive any training, and I don't know about the values. Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C? Herminia: yes, my neighbours come and visit and we always share conversations, when something is delicious we share how we made it. How do you think changes in the environment are affecting the way you prepare your meals? Everything affects, like A/K/C has no same taste as before, cassava sometimes do not cook well the center gets hard...</p>
<p>Farm Economy</p>  <p><i>Figure 109. Foliage to feed the animals. By Orchardton, 2011</i></p>	<p>Do you sell A/K/C or other crops? Now I don't have A/K/C to sell as in the past. After the harvest time, my mother went to Huaraz, to the big market to sell A/K/C. She had a great production. In my case me and Herlinda we sow for our consumption and to feed the animals. Herlinda: My mother-in-law was a good farmer I have learnt a lot from her. Unfortunately she died. If yes, how does it help you in your home income? A/K/C is part of what we eat. At the time when I was a child, it helped the family, not only A/K/C but also all the produce from our <i>chacra</i>. Do you have other source of income? No, the only income I have is from my <i>chacra</i>. I have a truck and a <i>desgranadora</i> (corn-husker). If someone in the community needs service, I go and charge for my services.</p>

⁵² Paico: Medicinal plant used by Indigenous people since the prehispanictime scientific name: chenopodium ambrosioides. (Retrieved from: http://www.peruecologico.com.pe/flo_paico_1.htm)

**Local Perception and
Evaluation of the
Farm**



Figure 110. Spontaneous narratives walking along the chacra. By Orchardton, 2011

Do you combine crops in your *chacra*? Do you think that the fact of combining trees, crops, animals (this is known as agroforestry) improve or affect your crops? Yes, it is good to combine crops as they help one another and we use all of them. Having different varieties of one product also help. For example, I like to preserve A/K/C varieties. At this time I have enough for me and Herminia. I keep planting the varieties I like. This is the way I preserve it.

At this time, I have a grape plantation, so far, it is growing well. An engineer, who knows about grapes, comes often to visit me and check them...

**Community Relation
& Travel**



Figure 111. Herlinda cleaning the guinea pigs for supper. This is part of the cultural traditions. By Orchardton, 2011

Hope you have for your community, especially in rituals and ceremonies and respect to the Earth? It is important to preserve and learn what our ancestors and elders did in the past with respect to the rituals and ceremonies. Our youth need to know and learn what it means to respect the Earth.

What hopes do you have for your children and family with regard to the historical past and respect by crops and land? My children have been devoted to their work outside the farm. Now, each of them has their own profession. I hope that they will remember the little I taught them while they were young and the time we spent together in the chacra. Now, they also come with their cars to see us and they go to the *chacra* to only take out products and bring to their homes. Perhaps the good thing about this is that when they come we share time with them and we go to see the animals and the chacra.



Figure 112. Casma Regional Museum MaxUhle in temple Sechin: Layers of A/K/C' history.

In this segment, I honored all the events, experiences,
and inner inquires that I went through with A/K/C. By Sudario, 2011

CHAPTER SIX

Understanding the Landscape of Identity of the Casma People:

My Personal Interpretation

knowledge derives from multiples sources such as, traditional teachings, empirical observations, and revelations. Moreover, revealed knowledge which is adquired through dreams, visions, and intuitions that are understood to be spiritual in origin. Sometimes knowledge is received as a gift at the moment of need; sometimes it manifest itself as a sense that 'the time is right' to make a decisive turn in one's life path.

Castellano (as cited in Sefa Dei, Hall, & Rosenberg , 2000).

Opening

In Indigenous, oral cultures,
One converses with the mouth, the hands,
the sense of smell, vision, hearing,
gestures, flowerings, the colours of the skin,
the taste of the rain, the colour of the wind, etc.

Since all are persons, all speak.

The potatoes, the llamas, the human community, the mountains,
the rain, the hail, The huacas [deities] speak.

Language is not a verbal presentation
which encapsulated the named person...the word makes present the named one, it is not, as
it is said, a representation.

Rengifo (as cited as cited in Apffel-Marglin, 1998, p. 26)

In Indigenous, oral cultures,
Nature itself is articulate; *it speaks*.

The human voice in an oral culture is always to some extent
participant with the voice of wolves, wind, and waves –participant, that is, with the
encompassing discourse of the animated earth. There is no element of the landscape that is
definitely void of expressive resonance and power: any movement may be a gesture, any
sound may be a voice, a meaningful utterance....

Abram (as cited in Apffel-Marglin, 1998, p. 27)

Introduction

Casma is a small region in Central Peru that has historically been the homeland of one of the most ancient civilizations in the Americas. This included a smaller, lesser-populated community called *Sechin*; the oldest archaeological site of the new world. Archaeologists and historians have estimated that communities and their people were present 5,500 years BC along with their ancient constructions, such as a circular plaza called *plaza hundida*, discovered in this ancient pre-Columbian site. Not far from this original setting is *Chankillo*'s 13 towers. These towers are considered the astronomical solar observatory, and an extraordinary example of indigenous timekeeping (Ghezzi, 2007) based on Peruvian cultural, geological and astrological phenomena. In this sense, sociologists, anthropologists and social workers from all over the world recognize that these cultures developed from ancient cultural roots, and as such demonstrate that Indigenous people and related cosmologies, were indeed, highly complex and integrated with many spiritual, social and cultural of that time.

As previously stated, this research examines the social, cultural, and spiritual complexities of local farmers in this region of Peru; there are many challenges and confronting views of Indigenous and Mestizo people. Yet it could also be said that, in order to understand these complexities, one must look to the past to understand the ancestral and cultural roots of the Casma Peruvian communities and how their traditional *ways of knowing and doing* (ancestral and cultural) are still practiced in the present. This also helps them to recognize whether solutions were developed in response to comparable challenges.

The aim of the research interviews is to identify (if this is the case) ancient adaptation strategies and the role and importance of social, cultural, and spiritual connectedness in

association with A/K/C (*Ipomoea batatas*) in their chacras (farms). Grenier (1998) believes that local knowledge exists within, and developed around the specific condition of women and men Indigenous to a particular geographic area. She continues:

All members of the community have traditional ecological knowledge: elders, women, men, and children. The quantity and quality of the IK that individuals possess varies according to age, education, gender, social and economic status, daily experiences, outside influences, roles and responsibilities in the home and community, profession, available time, aptitude and intellectual capability, level of curiosity and observation skills, ability to travel and degree of autonomy, and control over natural resources are some of the influencing factors... (p. 1-2)

This chapter will focus on three activities: 1) highlight the results of the interviews and subsequent analysis; 2) attempt to answer the research questions and justify responses; and 3) review, summarize, and present the conclusions of this research.

Analysis: Key Aspects

One of my main goals is to share and provide an overview and analysis of the gradual process of changes and adaptation of the Casma people of Peru. To do that, it was important to understand that this ancient settlement centre (as one of the most important archaeological sites in Peru) must rely on its own people for its continued social and cultural existence. Some of the ethnic groups that migrated, and settled in this ancient region still continue in traditional ways of knowing based on their intrinsic understanding of their chacras. They have developed particular *ways of knowing and doing* as a consequence of their daily interaction with their surroundings and all the elements of their natural environment.

Before embarking on this research journey, I had many personal inquiries and exploratory questions summarize as follows:

1. How will I be able to understand Indigenous families' intimate relation with the chacra, the environment, and how has the vast traditional ancestral planting practices and cultural knowledge of A/K/C (*Ipomoea batatas*) helped the Casma people shape innovations, strategies and adaptations to climate change?
2. What kind of indicators (signs) are currently used (or have been used) by Indigenous/Mestizo farmers and their families to identify changes in their environment (effects of climate change) especially in relation to the traditional planting practices of A/K/C (*Ipomoea batatas*)?
3. How can traditional planting practices, rituals, and ceremonies related to the A/K/C (*Ipomoea batatas*) help to strengthen and nurture Indigenous families to survive the constant impact of poverty and food insecurity?

It was during this self-reflecting discourse that I came out with the objectives of my research and as a social work student. I also wanted to capture, understand and apply the valuable core-content of reshaping theories in contemporary social work that (noticeable or not) are embedded in different research methods, perspectives and techniques.

In this context, a range of intellectual traditions have shaped the collective wisdom of social workers over the decades. What is essential in this vision and perhaps annexed to the approach related to values and beliefs is an understanding of what culture is, and how the culture of the Casma Peruvian people have shaped and created their identity. Indeed, Barnouw (as cited in Chun, Organista, and Marin, 2005) states that:

Culture is a set of attitudes, values, beliefs, and behaviors that is shared by a group of people and communicated from one generation to the next through language or other means of communication. (p. 84)

Therefore, concepts such as enculturation and acculturation are embedded in the significance of culture. Enculturation can be seen as the process of how culture is transmitted from one generation to the next (Haviland et al., 2005). Acculturation can be understood as “the result when a group of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture pattern of either or both groups” (Chun et al., 2005, p.18). Obviously, culture is maintained and possibly changed as individuals interact, communicate and exchange ideas or practices with each other.

According to Oliden (2008), the origins of the population of Casma started many thousands of years ago, when small groups of explorers reached the shores possibly from North of the Valley of Casma. At the time, this part of Peru was booming and had a sizable population. From this grew a old coastal populations such as “Guaynuna, Turtles, Cerro Prieto were between Casma port and the beach of ‘Turtles,’ and these populations grew over a period of approximately 14,000 years in the South in Las Aldas and the Huaro” (Oliden, 2008, p. 1).

Further to this, Chang’s (2008) perception of culture is based on human interactions where “of-self” and therefore “others” were vital agents and participants in culture. Although, in our contemporary society, the question that anthropologists and social workers have asked for over a century is *where is culture located?* Taylor (as cited in Vanzant, 1993) expressed her concern about the common connotation among minority groups in the world. She found that there is an amalgamation of concepts between culture and heritage; to Taylor “culture

and heritage are directions that will help [us] move forward. We forget that our ancestors built the world, healed the sick and educated the ignorant” (n.d)

Although the definition of culture has been explained in brief, it is necessary to briefly reflect on the term acculturation. After, reviewing the layers of history (Sechin culture onwards) of the Casma Peruvian culture and analyzing the interviews and posterior analysis, I have found that the Casma people in the coastal area *are* acculturated, based on this (and further) assumption(s); although further research will need to be done in this area.

Lathrap (1969) in one of his articles published by the Society for American Archaeology focused on the factors which are basic to an understanding of why complex urban societies developed early in this particular area of the world:

Systematic attention is given to such basic factors as the geographical background, the economic patterns that developed in the area or were intruded into it, the shifts in climate that might have triggered such economic evolution, the inter-play between particular subsistence patterns and the geographical background, the demographic equilibria or disequilibria generated by this interplay, and the ultimate patterns of population distribution generated by this interplay...we need to know much more than just the ancient human demography of Peru if we are to understand the rise of civilization, but without an understanding of basic ecological and demographic factors there can be absolutely no comprehension of the appearance of complex societies and vast socio-political units such as the Inca Empire. (p. 341)

Furthermore, Padilla and Perez (2003) confirmed that a group of social scientists under the auspices of the Social Science Research Council (1954) expanded a notion previously stated by Redfield et al., in 1936.

There is also the possibility that acculturation change may be the consequence of direct cultural transmission it may delivered from noncultural causes, such as ecological or demographic modification induced by an impinging culture ... it can compass a reactive adaptation of traditional modes of life. (p.974)

For Berry (2003) “acculturation involves changes that result from sustained contact between two distinct cultures” (p.39). The Framework created by Berry (p.162) creatively outlines both cultural and psychological acculturation:

In the cultural level researchers need to understand the key elements of the two original groups (A & B) prior to their major contact the nature of their contact relationships, and the resulting cultural changes in both groups and in the emerging ethnocultural groups during the process of acculturation. The gathering of this information requires extensive ethnographic, community-level work. These changes can be minor or substantial and range from being easily accomplished to being a source of major cultural disruption (the discovery of America by the Spaniards and the colonization period). At the individual level one must consider the psychological changes that individuals in both groups undergo and the effects of eventual adaptation to their new situations. Identifying these changes requires sampling a population and studying individuals who are variably involved in the process of acculturation. These changes can be a set of rather easily accomplished behavioural changes (e.g., in ways of speaking, dressing, or eating; in cultural identity), or they can be more problematic, producing acculturative stress as manifested by uncertainty, anxiety, and depression (Berry, 1976 as cited in Berry, n.d, p.19, 21)

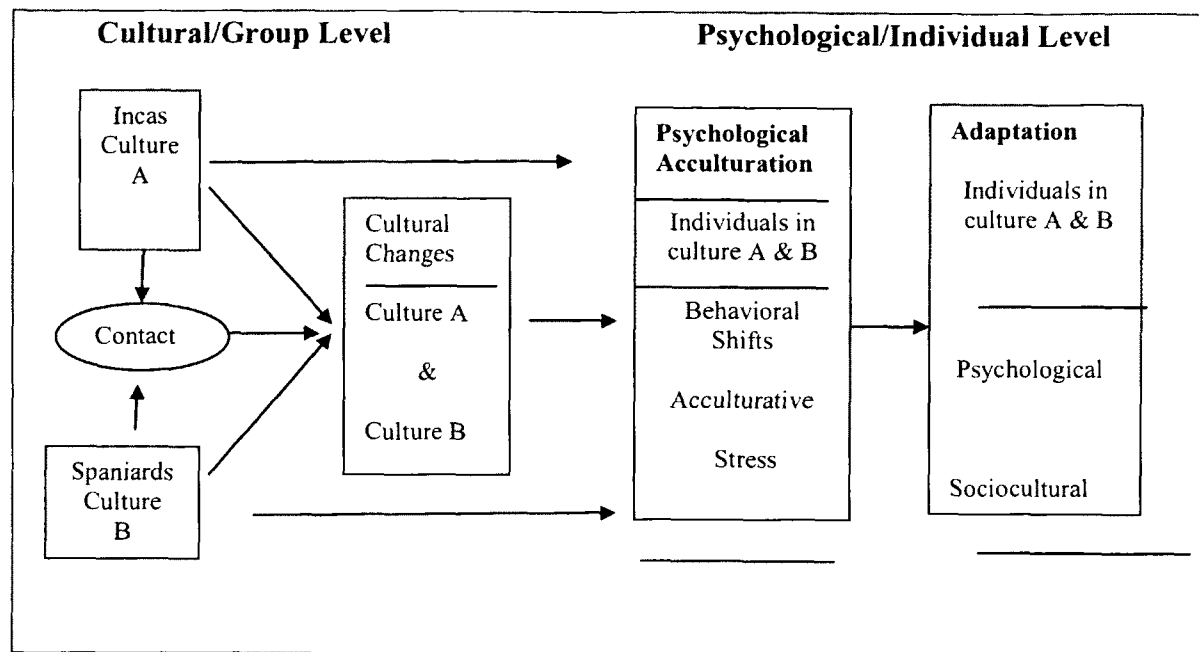


Figure 113. A General Framework of Cultural and Psychological Acculturation. By Berry, 2005, p.20.

Meyer and Maldonado Alvarado (2010) point out that the actual education system has lead to acculturation and ethnic shame. However, the capacities in the case of Indigenous people are here to resist and propose alternatives.

In this thesis, one of my main goals was to illustrate the gradual changes of the Casma Peruvian people. Their historical past bring us to the archaeological historical structure of the circular plaza, with 10 to 12 feet in diameter found in the archaeological complex Sechin Bajo (Vallejos, 2008). Today, this is considered the oldest structure found in Peru, and it belongs to the period of 5500 BC. Understanding the past (pre-Inca, and Inca periods) we can find key points on how the social, cultural, and spiritual planting practices have evolved, adjusted, adapted and ultimately survived the processes of acculturation since colonization. There is also a need to look at how sets of attitudes, values, beliefs, and behaviours are still present in the 21st century and embedded in the *way of knowing and doing* that have shaped the Casma's peoples' identity. Understanding the entire process

facilitates the explanation of how communities build resilience and enhance their adaptive capacity to the challenges of climate change, poverty and food insecurity.

This research demanded that further explanation was needed to explain how these processes had occurred and impacted cultures in America, specifically in South America, Peru. Archaeologists have found that the remains of the Sechin are found in the initial periods such as the Early Formative, 2200 BC, and goes through channels of evolution and transformation until 1515 AD when the Incas imperial forces dominated, followed by the Spaniards' arrival and the period of colonization.

Viewing this optimistically and with the note of the possibility of revitalization of the Casma Peruvian people's culture, extensive evidence has stated that most people [groups, communities] who have experienced acculturation actually *do* survive. They are not destroyed or substantially diminished by it; rather, they find opportunities and achieve their goals. The renowned Peruvian Anthropologist Julio C. Tello (Burger, 2009), briefly describes the impact of colonization:

The Spanish brought completely different manners, customs, habits, illnesses, religion, language, ideals with them. This process of adaptation which started with the conquest was a great cataclysm which demolished, almost from its foundation, the national structure shaped by the Indigenous spirit during many centuries. For example, the great irrigation canals and dams were abandoned, the roads destroyed, the temples were plundered and fell, the religion persecuted, the arts forgotten, and the population humiliated and enslaved. (p.82)

Peruvian Indigenous people relied on their traditional knowledge, their understanding of ancient farming-systems, and how they used their knowledge and practices on their chacras.

Their wisdom was gained through oral knowledge and experimentation, discovering secrets of their social and ecological surroundings. The "placing into practice" and exercising this intimate relation with nature came out in the field work (participant observations and interviews). One of the features noted by Cajete (1986, 1999; Christie 1991) in Indigenous people is how courageously they defended their lands from colonialism and Western domination for many centuries, and were faced with many social power struggles and misaligned privileges which isolated and alienated Indigenous people. It seems that worldviews, identities, and mother tongues create an even wider gap between themselves and Western science.

It is reasonable to assume that societies remember the past in a variety of ways. At many levels the oral narratives reveal fundamental cultural assumptions from which Andean myth tradition was, and continues to be, constructed (Steele & Allen, 2004). A different view is presented by Lane and Herrera (2005). Unlike the previous statement they consider that there are communities in which local memories or identities holds no particular attachment to the prehistoric environment, and likewise, there are others that hold little in the way of identification with the ancient or historical landscape beyond perhaps a detached association.

One of my goals in writing this thesis was to highlight the diverse voices and motivations of farmers and their families who chose to remain in their chacras and continue to participate actively in their communities. An extension of the process of recovery and revitalization is to touch briefly on the process of decolonization as an element that challenges acculturation and its social, political, cultural and economical policies. Berry considered language as a key element in the ethnic revival movement beginning in the 1970s. He proposed that ethnic groups can reverse their acculturation process to the dominant group

and revert to their former cultural heritage. Needless to say that we are today witnessing how numerous ethnic groups are managing to revive and revitalize ancestral languages and culture (traditions, ceremonies and rituals). For Apffel-Merlin (1998), decolonization consists “in the decision and corresponding action of recovering...the culture that is our own and which guarantees us a healthy, creative, diligent and joyful life” (p. 230).

My other goal has been to situate the chacra, the farmers and their families’ personal experiences as a group of case studies and each family as a research priority. Privileging their personal stories, I succeeded in highlighting multiple voices of men and women who partially represent the community. I also demonstrated that farmers and their families are actively constructing meanings of gender through their narratives, and story-telling can fully appreciate research subjects as active participants of their own history and knowledge, rather than just being passive informants. For better illustration see each family calendars of daily activities in the chacra on Tables 8 to 13 (pp. 181, 183, 185, 187, 189, 191) based on field work participant observation and interviews.

During this last century, Peru has experienced unprecedented social, political, and economic changes, and more recently (e.g., over the past fifty years), there is evidence to suggest that very little of the traditional social order, is left intact. According to Petterson (2010) “the consolidation, expansion, and tentative decentralization of the Peruvian state have had a particularly profound effect on labor relations, land tenure, electoral politics, administration, and social practice and ideology” (p. xii). Paradoxically, new forms of identification and mobilization have helped to challenge traditional distinctions of status and ethnicity. New denominations such as Mestizo⁵³, peasant, indians⁵⁴, and cholo⁵⁵ from a great

⁵³ Mestizo considered as a European-white and Aboriginal ancestors.

historical and ancestral civilization is in the process of exacerbating their culture and their identity. No Indigenous person in Peru “lives exactly as their ancestors did 500 years ago” (Paredes, 2008, p. 20). Indigenous communities have changed just as people from other cultures have.

Indigenous people in Peru have transformed themselves according to the opportunities and constraints they have met, incorporating costumes, technologies and ideas from a white-mestizo dominated society. The idea that when Indigenous people enter into contact with civilization they are no longer “Indigenous” is problematic. Unfortunately, this has been a negative perception that has been historically constructed, reproduced and consolidated in Peru. In general this has created the social, cultural, spiritual and psychological barriers that prevent Indigenous people from organizing themselves in all phases of governance in the country (Paredes, 2008). “Indigenous were Indians a race that because of impoverishment and exploitation was becoming a degraded race; backward, irrational and deteriorating” (Paredes, 2008, p. 21).

Most *vecinos* or Indigenous peasants, and their neighbours’ according to Petterson privately retain diverse elements of traditional racial and ethnic ideologies. They also continue to discriminate between one another and to informally self-segregate along ethnic lines. Likewise, the massive influx of peasants into towns and the rapid disappearance of definitive markers of ethnicity have created a cultural alarm so they have to rely increasingly on their detailed genealogical knowledge and in the stories of the community or province. On the other hand, according to Paredes (2008) the idea of Mestizo in the 1960s was no longer

⁵⁴ Indians according to Paredes (2008) is a term originally invented by the Spanish to name all Aborigines and through Peruvian history has been re-invented (Pacific War with Chile). The vision of the intellectuality at that time was that Indian was a backyard, impoverishes and degraded race.

⁵⁵ Cholo is someone who has indigenous origin and moved to an urban area, and can have or not have some degree of formal education and have some degree of adaptation to the western culture.

referred as a racial category but to a cultural class-based construction of acculturation making it difficult for Peruvians to detach class from ethnicity. Basadre, the most influential historian at the time, stated that “even today, if you see someone of pure Indian blood in the fields, using a plow, pasturing his sheep and dressed in short trousers, you are seeing a process of cultural mestizaje” (Basadre & Yepes, as cited in Paredes, 2008). Paredes (2008) however has the opinion that mestizaje should be considered as an opportunity to change the indian situation of exclusion and exploitation to a life of citizenship and progression throughout the learning of Spanish, education, and migration to urban centres.

As a brief summary therefore, it is also the transformation of the the Mestizo category from a racial to a cultural content perceived as a hierarchical accomodation of Western and Aboriginal cultures. Then Mestizos must embrace the customs, technologies and ways of life of the white-mestizo dominant society and must pay tribute to their origins by the glorification of the indigenous past (Paredes, 2008). Unfortunately, as many scholars agree, Indigenous cultures were transformed into cultural products to be found in museums, commemorations, folklore, products for tourists and the history of the Incas, but not living languages, forms of organisations and the recreation of traditions and knowledge as they entered into contact with other cultures. The Nobel Prize in Literature 2010 the Peruvian writer Vargas LLosa (1950) states that:

Indian peasants live in such a primitive way that communication is practically impossible. It is only when they move to the cities that they have the opportunity to mingle with the other Peru. The price they must pay for integration is high-renunciation of their culture, their language, their beliefs, their traditions and customs

and the adoption of the culture of their ancient masters. After one generation they become Mestizos, and they are not longer Indians. (p. 22)

This review of acculturation is not intended to be exhaustive. My goal is merely to point out the current deficiencies in the consideration of Indigenous and Mestizos people who feel disenfranchised and alienated from political power living in persistent inequalities and disadvantages.

Data Analysis

The majority of the participants in this research do not have formal education. Some have only primary education, and even fewer have post-secondary education. Their vision and knowledge have helped them to have a quite distinctive view of their involvement in the community. Most of them were able to teach their children at a young age to work in the chacras and to go to school. In some cases, some of the children pursue post-secondary education. In the majority of cases, the entire families were involved in chacra activities. The participation of the children in chacra activities at a young age helped them to develop a nurturing relationship with the chacra, but unfortunately, not many of them remained. The lure of better jobs and living in Lima, the large metropolitan area and capital of Peru, prompted many young people to leave their communities. Some of the participants (especially the *culturally* Mestizos) enjoy experimenting with new innovative farming strategies in their chacras. Many of the amenities of modern life have influenced farmers. For example, TV documentaries inspire some to consider new ways of farming. In addition, their ancestral *ways of knowing* have significantly shaped the way their farming systems have evolved, and despite modern influences from the outside, most Indigenous participants maintain their traditional ways and practices. Most of the participants relied on one dedicated

children (see genealogical charts of participants in Appendix F. pp. 231, 234, 237, 240, 243, 246), recognizing that they were able to nurture and develop this special relation and affection to the chacra. Some participants on the farm drew a sketch map of the chacra (see Appendix F pp. 230, 233, 245) to depict important crops, infrastructure and their understanding of how the farm is managed. The chacra has diverse crops, plants and animals, which they use for subsistence as well as market sales to gain extra income for the family. A/K/C is used as food, seed (tuber) and forage for example, as mulch and supplemental nutrients for the animals. During the interviews, I observed that the areas dedicated to the cultivation of A/K/C are small, but planted in different locations. The main problem identified by the families (in the majority of cases) was the lack of water and the contamination of streams or other water sources close to their *chacras*.

In relation to the *History of their Chacra* some were aware of the historical past through stories from their parents mostly from childhood memories. It seems that in all cases, there were no pre-Incas or Incas remains on their *chacras*. However as they pointed out, the hills around their property carry ancient stories. I have also observed that there is a concern in answering the question related to historical artifacts in their *chacra*. During informal conversations, many of the participants commented that there is a problem with *Huaqueros* in the community (people who steal treasures from the Pre-Incas or Incas tombs from archaeological sites). There is an existing law that protects the Cultural Heritage of the nation⁵⁶ and illegal activities such as stealing or confiscating artifacts is a criminal offence.

⁵⁶ The cultural heritage of Peru is protected by the following laws: Political Constitution of Peru (1993): Article 21; Cultural Heritage of the Country General Act: Act No. 28296 (2004) and its Regulations (2006); Supreme Decree No. 007-2006-MTC, Act No. 28404 -Regulations, Security of Civil Aviation Act; Decree Law No. 19414 (1972), Defence, Conservation and Development of the Country's Documentary Heritage Act and its Regulations; Legislative Decree No. 635 (1991), Criminal Code: Title VIII; Legislative Decree No. 961 (2006), Code of Justice Military Police of Peru (International Council of Museums, 2007, p. 2).

Perpetrators can be sent to jail. Based on participant observation, my assumption is that people are afraid to talk about it. I also have heard controversial comments and accusations against archaeologists, who have found sacred places and had appropriated valuable artifacts from tombs. There is no legal validation of these claims, but it is what most people talk about and believe.

In regards to their *Folk Ecology and Beliefs Regarding Resource Use and Conservation*, there is a struggle between traditional ways of knowing and the education and information most of the participants have been exposed to or have received. Some female participants valued *the traditional way of knowing and doing* and feel freer to complement (adjust) it with new services offered in the community (special medical services). Others (the ones living far away from the main city) have preserved ancient ways of dealing with their own illnesses and the diseases and plagues of the chacra. Some male participants seem to be more skeptical in following traditional ways of knowing and doing what they know best, especially the Mestizos. This attitude is attached mainly to males' notions of social status. Participants generally have knowledge of the varieties and nutritional values of A/K/C. In relation to the farmers' cosmology, they believe that lunar cycles have an important presence and play a fundamental role in how they farm. Lunar cycles have an effect on their cultivars and require family preparedness, especially when the cycle starts and ends. It demands a clear understanding of this spiritual as well as the natural (biophysical) phenomenon, and precise timing based on a combination of ancestral beliefs and farmer-experimentation (linked to traditional knowledge). As the participants narrated, they told of their experiences, struggles and hardships when they did not follow the lunar cycle, and how this affected future harvests. Nevertheless, some of my informants and people in the community now

question these traditional beliefs and do not follow these planting moon times but still claim that their fruit is just as big.

Furthermore, to control pest and diseases in cultivars some participants still use traditional methods. However, in some cases some diseases were not known to them and they did not know how to control or eradicate the problem. As previously mentioned, some of the participants had access to radio and television; many liked to watch informative documentaries and programs related to agriculture and they look for experiences that other people have in dealing with crops' pest and plagues and animal diseases. They considered this form of media and education as a legitimate contribution to their knowledge of cropping systems in their chacra. Farming innovation and experimentation are part of their daily routine. This helps some of them cope with many of the market or climate driven challenges they are faced with.

In brief, participants care for the health and well-being of the chacra. For them the chacra sustains their life and the life of their family and neighbours. As a result of the adverse effects of climate change, many crops have been affected but many crops have also benefited as a result of the onset of climate change related changes (ENSO-El Niño Southern Oscillation; increased frequency of droughts; prolonged colder periods or rainfall anomalies). Non-traditional fruit tree plantations (e.g., avocado, oranges, passion fruit, grapes varieties, and asparagus) occupy large proportion of the farm area, and today these plantations also are affected by pests and diseases that require the use of large doses of chemical pesticides and fertilizers. This situation has been detrimental for traditional crops. Participants mentioned that they feel forced to have plantations or to rent part of their chacra, because it generates income. The positive side of this can be that it increases farm diversity and also provides

them food security. A/K/C, maize, beans, and other traditional products secure their daily food, but do not (in most cases) provide a secure source of income.

In relation to *the Community Land Use*, families have well diversified chacra mainly for food security, and to adapt to or to cope with the effects of climate change.

Diversification is also an effective traditional way to preserve and maintain native traditional A/K/C varieties, as well as other crops. An important observation in this regard is that they combine traditional crops and non-traditional crops and they maximize the use of the chacra's space.

For the majority of the participants (and based on their *traditional Oral History, Learning and Culture*) their parents in the past used to prepare traditional dishes with A/K/C. Now, they are reaffirming and somehow discovering through innovation and experimentation that the best way to keep A/K/C's nutrients, quality, texture and sweetness, is by roasting it. They also comment on the quantity that a singular plant of A/K/C used to produce. Today, due to changes in soil composition and nutrient quality, A/K/C is not producing in the soil the way *it used to*, and *some varieties are disappearing*.

On the other hand, asking specifically about A/K/C's spirituality seems to be difficult to understand as their spiritual belief system is not only related to one cultivar but to the reciprocity that exists among cultivars and animals in the chacra as a whole. I have observed that most of the traditional beliefs are still present (in the lives and minds) of participants; however, there is an issue that confronts them with the new religion they currently belong to. Female participants seem to be easier to talk to in this regard. Indeed belonging to a modern religious congregation encourages them to deny or not follow those ancient beliefs

(*creencias*⁵⁷). Rituals were practiced by their parents in the past; however being in the coast and being exposed to urban life, tends to acculturate them, and they eventually stop practicing it and forget those traditional ways. There is a sadness of expression when participants affirm this reality. They also agree that there are many factors that have contributed to this gradual process of acculturation. For instance, the hacienda (*hacendados*) work style was imposed on farmers and obliged people not to practice traditional ceremonies and rituals because it was considered a waste of time or contradictory to ‘modern agriculture’. As one of the participants stated:

With rituals and traditions we gain knowledge and preserve knowledge. When we work together we all share what we know, we talk about that. There is a lot going on when we share; for instance, the influence of the moon in our cultivars, what plant growth in which month or season, which cultivars when growth together goes well. We feel helplessness to deal with changes in the climate. However, there is also a relation of adapting certain types of crops to the changes, which seems possible. (C. Toro, personal communication, June 12, 2011)

In regards to *climate change*, the behavior of cultivars and animals are key biological indicators to let farmers know about changes in the environment. These experiences are affirmed and/or reinforced when they (farmers) get together and share experiences about extreme events in the weather, ocean currents, agrarian cycle-changes, water availability, droughts or other phenomenon. An overview of the dilemma is illustrated in Figure 120. p. 192). Another key element to overcome difficulties is the availability of seed-cultivars in the chacra. The farmers arrange their crops and animal sites according to what they are used to and these ways of knowing blend in to their traditional knowledge. Plants or animals are

⁵⁷ Creencia can be translated as a belief or part of a belief system.

located in a strategic manner on the chacra to help accommodate (or alleviate) the many climate or non-climate related irregularities.

Preserving a healthy chacra ecosystem is a fundamental reason why farmers do what they do, and employ *traditional agriculture practices*. They understand how important it is to follow these practices and do their best to incorporate and preserve traditional knowledge. The notion of farmers using specific companion crops is a traditional belief which stems from ancient ways of knowing; whereby varieties of plants are accompanied by other plants that grow well together. This companionship is an ancient process based on above and below ground spiritual relationships that is connected to the farmer's holistic concept of the chacra. There is a symbolic relationship also established within the concept companion plants.

In general it is a feeling of uncertainty about the future as they can see how climate change is affecting their chacra. This uncertainty breeds a sense of risk and risk itself as an indicator of vulnerability. In an effort to adapt to climate change, farmers rely on companion crops and their traditional knowledge to cope with the onset of change, and having *close crop-friends* (as companion crops) that grow well together, is way of coping with climate change⁵⁸. I observed that the participants still use traditional instruments such as the chuzo and maize grinder. Other instruments from the Incas times are well adapted to today.

Following this analysis is *nutritional knowledge*, where the female participants cook for the whole family. A/K/C is part of family's daily food intake. They know the nutritional value of A/K/C, and this knowledge has been transmitted by their mothers and complemented by their own reading (in the case of participants who can read and write), and sharing ideas with others. Most females participate in communal activities and this gives

⁵⁸ This could also be (as well) any other anthropogenic change related to market structure, availability of seed for preservation replanting, etc.

them the opportunity to converse with others about what they know. An important point most of them made was that climate change affects the preservation of prepared food and the quality and quantity of the products from the chacra. In relation to *Farm Economy*, on one hand, some participants have secured monthly income (pension for retirement) in addition to the sale of produce and animals from their chacra. On the other hand, other participants only have what the chacra produces as income or self-consumption. So, the maintenance and sustainability of the chacra is a priority. Also, besides selling items to the market they give away or exchange seeds, plants, or harvests with their neighbours, when needed.

Traditional crops do not require much work. They tend to grow well by themselves or with companion plants⁵⁹. Plantations are a good support to their economy; however, sudden changes in the climate (e. g., periodic droughts caused by ENSO, temperature or rainfall fluctuations) affect the quantity and quality of these products (the market demand a good *grade A* products from plantations). A/K/C does not provide much income, but it does provide food security for the entire family. Water availability, contaminated water, and the increased frequency of droughts is also a major issue, and has caused significant setbacks in farm productivity. It is important to revitalize and revive farmers' traditional knowledge, as well as to educate others in ancient practices, rituals and ceremonies. This will help in providing communities become more resilient in response to adverse effects of climate change. Family values also need to be conserved and preserved just as traditional knowledge must be strengthened for future generations. Young people need and should to be educated about the importance of traditional ways of knowing and its intimate relationships with A/K/C. It is important to continue with ceremonies to Mother Earth according to the customs

⁵⁹ Companion plants are plants that accompany main crop species to ward off infection diseases or pests, as well as provide, enhance or exchange nutrients to the benefit of both plants much like a mutualistic relationship.

of their ancestors. These should be included in the curriculums of schools; primary and secondary and in colleges and in workshops on health in communities. This is especially important in order to educate the youth and adults about the nutritional values of the products in the *chacra* especially A/K/C.

Research Question and Sub-questions

The following is a visual representation of the findings in relation to the research question and subquestions. I included tables, diagrams, and photos to set out the key themes and to establish the trend or pattern of relationship among the contribution of narratives of each of the participants in this research. My main goal is to highlight and summarizes how the cultural, social, and spiritual approaches can inform, enrich, and enhance the helping profession.

Table.6

Research Question and Sub- questions

Social	Cultural	Spiritual
<ul style="list-style-type: none"> • Participatory meetings or gatherings in the community, help to keep traditional ways of preparing dishes alive. • Not having parents did not take TK away as the learning comes from the interaction with the families. • Conversation among farmers enhances shared experiences in what works and what does not work. Indeed, farmers usually have the same type of crops and plantations in their chacras. • For children to develop an understanding and care for the chacra, it is essential to share activities with adults • Getting together and sharing experiences and predictions seem to be an efficient way to confirm what farmers <i>know</i>. This helps them to make decisions at hand. • Sharing and helping with cyclical activities in the chacra enhance and reinforce a good relationship with family and neighbours. • Part of children socialisation has to do with their access to the media such as television, radio, and sometimes Internet. Unfortunately, the underlying messages encourage youth to move from their communities (as soon they reach their legal age). 	<ul style="list-style-type: none"> • Being aware of their cultural heritage and its importance is necessary, to protect intellectual property rights. • Cultural practices are related with the knowledge of practices in the use of companion crops. • Uses of ancient tools are valuable source for Indigenous/ Mestizo people's identity. It helps them in the preservation of their cultural and agricultural practices. • Following traditional ways of cooking helps in the transmission of cultural and nutritional values of A/K/C. • Some people in the community believe in healers' power to cure illnesses. • Parents/grandparents (or elders) guide the family to understand the nurturing relation with the chacra. • Sharing time with the children and telling stories from ancestors helps them to value historical past, preservation of cultural values, and beliefs. • The chacra provides and sustain the animals to practice ancestral healings (using eggs or guinea pigs to rub and cure/heal the body). • Participants practice traditional ways of curing illnesses and diseases. Living far away from the city allows some of them to preserve <i>traditional ways of knowing</i>, especially in relation to medicinal plants and herbs. • The over production of A/K/C is related with the belief that someone will die. • Females tend to notice changes in animals' behaviour, since they feed them daily. Males tend to notice plants, trees, and crops' changes since they spend more time in the chacra. • Minga and Ayni are still practiced by some communities. 	<ul style="list-style-type: none"> • The extinction of ancient cultivars weakens their spirituality and relationship with their land. • Spirituality has an intrinsic relationship with the moon cycles (as thought by their elders). This is a safe traditional method and is related to the visual appearance of the Moon on the sky. • Spirituality should be understood as the reciprocity that exists among cultivars, animals, and people in the <i>chacra</i> • Spiritual practices demand awareness of the mountain's sacred power, which is embedded with ancestral meanings. • Spiritual beliefs are related to the way herbs and medicinal plants are prepared and used as curative remedies for illnesses and how the physical appearance of plants/herbs are close related to the illnesses they cure. • Spirituality is the way that Mother Earth nurtures and helps the new coming life (animals or crops) to survive. • Rituals and ceremonies nurture spiritual beliefs and are shown in the reciprocity between crops. The benefit of one crop enhances the life of the other. • Religions of different denominations tend to divert or demystify ancient spirituality.

Research Sub- Objectives

Climate
Change

Food Security

Poverty

Rituals & Ceremonies (R&C)

- ✦ R&C contribute to the appreciation of one's identity and self-esteem in the community.
- ✦ R&C constitute an asset to the cultural heritage that needs to be preserved.
- ✦ R&C have an intrinsic relation with the preservation, dissemination, and practice of *traditional ways of knowing and doing*.
- ✦ R&C should be part of programs, projects, and activities in the community.

Responses Produced by Local Knowledge

- ✦ To be open to new improvements on farming methods.
- ✦ To continue with the diversification of cultivars and the combination of traditional & non-traditional crops.
- ✦ To enhance knowledge of farmers and family members on the observation of behaviours of animals and the changes on crops and plants.
- ✦ Getting together & sharing experiences to enhance knowledge and views on local predictions



Figure 114. Cesar & Felicita

Problems Identified by the Community

- ✦ The need to decrease maternal and neonatal death.
- ✦ The need to improve rural agriculture and productivity.
- ✦ The need to address child malnutrition.
- ✦ The need to improve the educational system in rural communities.

- ✦ Preservation of different varieties of A/K/C and other traditional crops.
- ✦ Planting crops in different locations of the chacra.
- ✦ Cooking in traditional ways help to preserve nutritional values of A/K/C.
- ✦ Continuing to enhance knowledge on the symbiotic relation among cultivars

- ✦ Continuing to sell products produced in the chacra according to the demand of the local/international market.
- ✦ Continuing to use foliage from crops to feed animals.
- ✦ Renting part of the chacra for plantations.
- ✦ Participating in activities, programs, and projects that generate extra income.

Table 8

Calendar of Daily Activities by Gender Participants: Cesar & Felicita

Calendar of Daily Activities in the Chacra				
Household or farm-related Activities	Summer	Autumn	Winter	Summer
1. Preparing breakfast	♀	♀	♀	♀
2. Open cages and feeding animals	♀ ♀	♀ ♀	♀ ♀	♀ ♀
3. Cleaning house & washing cloths	♀	♀	♀	♀
4. Watering plants around the house or in garden	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
5. Milking animals	♀	♀	♀	♀
6. Picking cultivars for cooking	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
7. Cooking	♀	♀	♀	♀
8. Fixing boundaries and Fences	♀ ♀	♀ ♀	♀ ♀	♀ ♀
9. Cutting wood for construction or fire wood	♀ ♀	♀ ♀	♀ ♀	♀ ♀
10. Collecting wood for construction or fire wood	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
11. Caregiving of children	♀	♀	♀	♀
12. Retrieving and transporting water	♀ ♀	♀ ♀	♀ ♀	♀ ♀
13. Rituals & Ceremonies		♀ ♀ ♀	♀ ♀ ♀	
14. Production of A/K/C and traditional crops	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
15. Production of plantation	♀ ♀	♀ ♀	♀ ♀	♀ ♀

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♀ = Women
 ♂ = Man
 ♀ ♂ = Children
 ♀ ♂ ♀ = Family

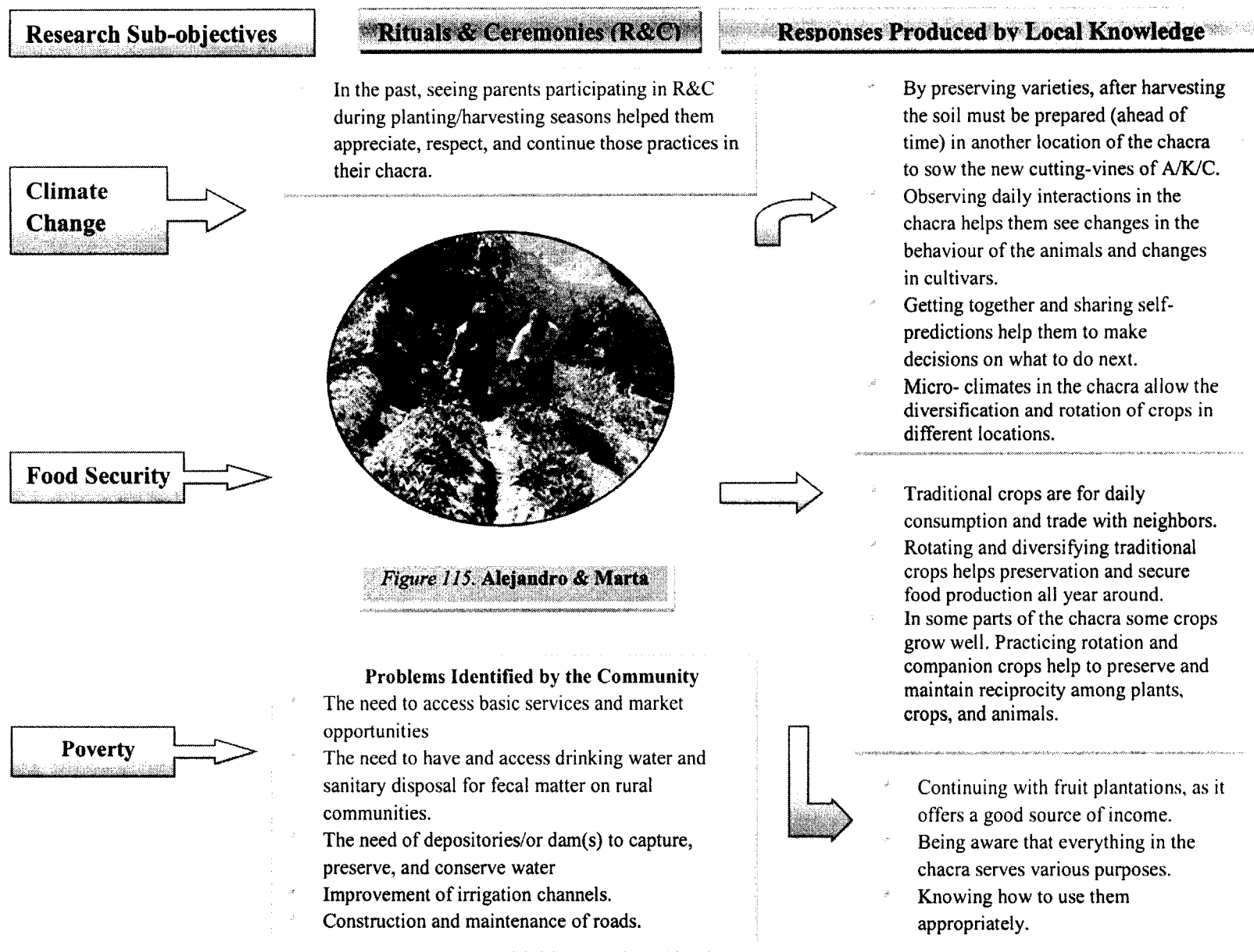


Table 9

Calendar of Daily Activities by Gender Participants: Alejandro & Marta

Calendar of Daily Activities in the Chacra				
Household or Farm-related Activities	Summer	Autumn	Winter	Summer
1. Preparing breakfast	♀	♀	♀	♀
2. Open cages and feeding animals	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
3. Cleaning House	♀	♀	♀	♀
4. Washing cloths	♀	♀	♀	♀
5. Watering plants around the house	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
6. Milking animals	♀ ♀	♀ ♀	♀ ♀	♀ ♀
7. Picking cultivars for cooking	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
8. Cooking	♀	♀	♀	♀
9. Fixing boundaries & Fences	♀ ♀	♀ ♀	♀ ♀	♀ ♀
10. Cutting wood for construction or firewood	♀ ♀	♀ ♀	♀ ♀	♀ ♀
11. Collecting wood for construction or firewood	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
12. Caregiving of children	♀	♀	♀	♀
13. Retrieving and transport of water	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
14. Rituals and Ceremonies		👪	👪	
15. Production of A/K/C and traditional crops	👪	👪	👪	👪
16. Production of plantation	♀ ♀	♀ ♀	♀ ♀	♀ ♀

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♀ = Women
 ♂ = Man
 ♀ ♂ = Children
 👪 = Family

Research Sub-Objectives

Climate Change

Food Security

Poverty

Rituals and Ceremonies (R&C)

- R&C should be revitalized, disseminated, practiced, and preserved.
- Revitalization of R&C is part of the cultural protocols needed for the repatriation of A/K/C's germplasm types. From the International Potato Centre (gene banks) to rural communities where certain varieties of AKC became extinct.
- R&C should be mandatory in local projects.
- R&C should be part of the educational system in rural communities.

Responses Produced by Local Knowledge

- Observation of the mountains' (considered sacred to Genaro) changes of colors, movements of clouds around it and other unusual signs.
- Observation of changes on livestock behaviour and the sudden changes in cultivars' cycle.
- Practicing crop diversification and growing crop companions.
- Getting together & sharing experiences to reaffirm predictions.

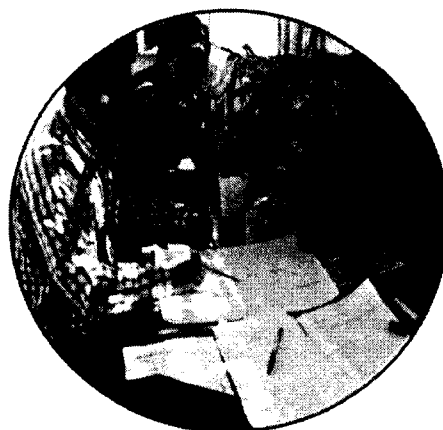


Figure 116. Genaro & Martina

Problems identified by the Community

- The need to access to telecommunications in rural communities.
- The need to work together and approach competitiveness for micro and small enterprises
- The need of fairness in the justice system and work effectively in crime prevention
- Lack of care and attention from local authorities.

- Understanding nutritional values of A/K/C and its dissemination can enhance the health of the community.
- Preserving varieties of A/K/C in different locations of chacra.

- Sell what the chacra produces (crops and animals), and trade with neighbors to supplement what they do not produce.
- Save money by feeding animals with the foliage of A/K/C and other crops.

Table 10

Calendar of Daily Activities by Gender Participants: Genaro & Martina

Calendar of Daily Activities in the Chacra				
Household or Farm-related Activities	Summer	Autumn	Winter	Summer
1. Preparing breakfast	♂ ♂	♂ ♂	♂ ♂	♂ ♂
2. Open cages and feeding animals	☺☺☺	☺☺☺	☺☺☺	☺☺☺
3. Cleaning House	♂ ♂	♂ ♂	♂ ♂	♂ ♂
4. Washing cloths	♂	♂	♂	♂
5. Watering plants around the house or in garden	♂ ♂	♂ ♂	♂ ♂	♂ ♂
6. Milking animals	♂	♂	♂	♂
7. Picking cultivars for cooking	☺☺☺	☺☺☺	☺☺☺	☺☺☺
8. Cooking	♂	♂	♂	♂
9. Fixing boundaries and Fences	♂ ♂	♂ ♂	♂ ♂	♂ ♂
10. Cutting wood for construction or firewood	♂ ♂	♂ ♂	♂ ♂	♂ ♂
11. Collecting wood for construction or firewood	♂ ♂ ☺	♂ ♂ ☺	♂ ♂ ☺	♂ ♂ ☺
12. Caregiving of children	♂	♂	♂	♂
13. Retrieving and transporting of water	♂ ♂	♂ ♂	♂ ♂	♂ ♂
14. Rituals and Ceremonies		☺☺☺	☺☺☺	
15. Production of A/K/C and traditional crops	☺☺☺	☺☺☺	☺☺☺	☺☺☺
16. Production of plantation	♂ ♂	♂ ♂	♂ ♂	♂ ♂

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♂ = Women
 ♂ = Man
 ♂ ♂ = Children
 ☺☺☺ = Family

Research Sub-objectives

Rituals & Ceremonies (R&C)

Responses Produced by Local Knowledge

Climate Change

R&C help in the revitalization, development, and practice of Peruvian heritage.
R&C can enhance history and local customs and protection of historical sites.

Observing repetition of events help to affirm predictions.
Diversifying
Knowing which varieties of A/K/C are more resistant to the effects of climate change.

Food Security



Figure 117. Maurino's chakra

Preserving different varieties of A/K/C
Preparing traditional dishes which demands preservation of traditional crops.
Having traditional crops in the chakra challenge food insecurity.

Poverty

Problems Identified by the Community

Convenience stores in school are creating negative impacts in children's eating habits.

Fruit plantation offers secure income and demands new innovations.
Produce and animals generate extra source of income that helps to satisfy immediate needs.

Table 11

Calendar of Daily Activities by Gender Participants: Maurino & Herminia

Calendar of Main Daily Activities on the Chacra				
Household or Farm-related Activities	Summer	Autumn	Winter	Spring
1. Preparing breakfast	♀	♀	♀	♀
2. Open cages and feeding animals	♀	♀	♀	♀
3. Cleaning House	♀	♀	♀	♀
4. Washing clothes	♀	♀	♀	♀
5. Watering plants around the house or in the garden	♀ ♀	♀ ♀	♀ ♀	♀ ♀
6. Milking animals	♂	♂	♂	♂
7. Picking cultivars for cooking	♂	♂	♂	♂
8. Cooking	♀	♀	♀	♀
9. Fixing boundaries and fences	♂	♂	♂	♂
10. Cutting wood for construction and firewood	♂	♂	♂	♂
11. Collecting wood for construction and firewood	♂	♂	♂	♂
12. Caregiving of children	♀	♀	♀	♀
13. Retrieving and transporting water				
14. Rituals and Ceremonies		♂	♂	
15. Production of A/K/C and traditional crops	♂	♂	♂	♂
16. Production of plantation	♂	♂	♂	♂

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♀ = Women
 ♂ = Man
 ♀ ♂ = Children
 ♀ ♂ = Family

Research Sub-objiectives

Climate Change

Food Security

Poverty

Rituals & Ceremonies (R&C)

R&C are important to be re-learned people in the community have the desire to learn how these R& C were in the past. R&C have (now days) relation with pray. It is considered a way of offering respect to Mother Earth



Figure 118. Maria Consolacion

Problems Identified by the Family

Local authorities should find solutions on water contamination. There is a need to construct dams to capture and preserve water. New innovations can be applied to farming system in rural communities; however, traditional methods should be considered in the new design of farming innovations.

Responses Produced by Local Knowledge

- To be successful and challenge climate change requires knowledge of the moon cycle.
- Daily observation of surroundings helps to predict changes in the weather.
- Taking into consideration animals and plants' behavior help prediction.
- Gatherings help to reaffirm (or not) what they predicted.

- A/K/C is a source of food security for the family, animals, and livestock in the farm.
- Preservation of the A/K/C and traditional crops challenge food insecurity.
- Food will be secure by diversifying, rotating and preserving varieties of crops.

- By having produce and animals to sell and to trade.
- By using foliage of crops to feed animals and livestock in the chacra.
- Having fruit plantations provide secure income.

Table 12

Calendar of Daily Activities by Gender Participant: Maria Consolacion

Calendar of Daily Activities in the Chacra				
Household or Farm-related Activities	Summer	Autumn	Winter	Summer
1. Preparing breakfast	♀	♀	♀	♀
2. Open cages and feeding animals	♀	♀	♀	♀
3. Cleaning House	♀	♀	♀	♀
4. Washing cloths	♀	♀	♀	♀
5. Watering plants around the house	♀	♀	♀	♀
6. Milking animals	♂	♂	♂	♂
7. Picking cultivars for cooking	♀	♀	♀	♀
8. Cooking	♀	♀	♀	♀
9. Fixing boundaries and Fences	♂	♂	♂	♂
10. Cutting wood for construction or fuel wood	♂ ♀	♂ ♀	♂ ♀	♂ ♀
11. Collecting wood for construction or fuel wood	♂ ♀	♂ ♀	♂ ♀	♂ ♀
12. Taken care of children	♀	♀	♀	♀
13. Retrieving and transporting water	♀	♀	♀	♀
14. Rituals and Ceremonies		♀	♀	
15. Production of A/K/C and traditional crops		♂ ♀	♂ ♀	
16. Production of plantation	♂ ♀	♂ ♀	♂ ♀	♂ ♀

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♀ = Women
 ♂ = Man
 ♂ ♀ = Children
 ♂ ♀ = Family

Research Sub-objectives

Climate Change

Food Security

Poverty

Rituals & Ceremonies (R&C)

- R&C are an important legacy from ancestors and should be preserved.
- R&C are related with community celebrations.



Figure 119. Rosa & Ruth

Problems identified by the Community

- Not be able to sow, because of the shortness of water
- Local government does not prioritize community needs.
- Poor farmers have to rent their chacras for different purposes, because they do not have other options.

Responses Produced by Local Knowledge

- Knowing the symbiotic relation among crops, trees, and other cultivars.
- Observing the sky and the mountains (sacred archeological sites) help to predict changes in the environment.
- There is a common knowledge on the weather of the Coastal area.
- It is important to observe changes of conditions and behaviors in plants, crops, animals and livestock.
- Awareness on infestation of plagues.
- The diversification and rotation of crops secure preservation of species.
- Having varieties of traditional crops secure food for farmers.
- Having knowledge of nutritional values of A/K/C, other traditional crops, and medicinal plants and herbs can challenge food insecurity
- Taking advantage of well-known likely varieties of A/K/C (Huambacho) by local and regional consumers.
- Feeding animals with foliage of A/K/C and other crops help in the economy of the farm.
- Selling animals, crops, and livestock generate an extra income.

Table 13

Calendar of Daily Activities by Gender Participants: Rosa & Ruth

Calendar of Activities in the Chacra				
Household or Farm-related Activities	Summer	Autumn	Winter	Spring
1. Preparing breakfast	♀	♀	♀	♀
2. Cleaning House	♀	♀	♀	♀
3. Washing cloths	♀	♀	♀	♀
4. Watering plants around the house	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
5. Cleaning the house	♀	♀	♀	♀
6. Picking and collecting cultivars for cooking	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
7. Open cages and feeding animals	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
8. Cooking	♀	♀	♀	♀
9. Fixing boundaries and fences	♀ ♀	♀ ♀	♀ ♀	♀ ♀
10. Cutting wood for construction or fuelwood	♀ ♀	♀ ♀	♀ ♀	♀ ♀
11. Collecting wood for construction or fuelwood	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀	♀ ♀ ♀
12. Taken care of children	♀	♀	♀	♀
13. Retrieving and transport of water	♀ ♀	♀ ♀	♀ ♀	♀ ♀
14. Rituals & Ceremonies		♀	♀	
15. Production of A/K/C and traditional crops	♀ ♀ ♀	♀	♀ ♀ ♀	♀ ♀ ♀
16. Production of plantations	♀	♀	♀	♀

Note: Adapted from Karremans, Radulovich & Lock, 1993. Turrialba, Costa Rica: CATIE.

♀ = Women
 ♂ = Man
 ♀ ♂ = Children
 ♀ ♂ ♀ = Family

Climate Change: Overview of the Dilemma

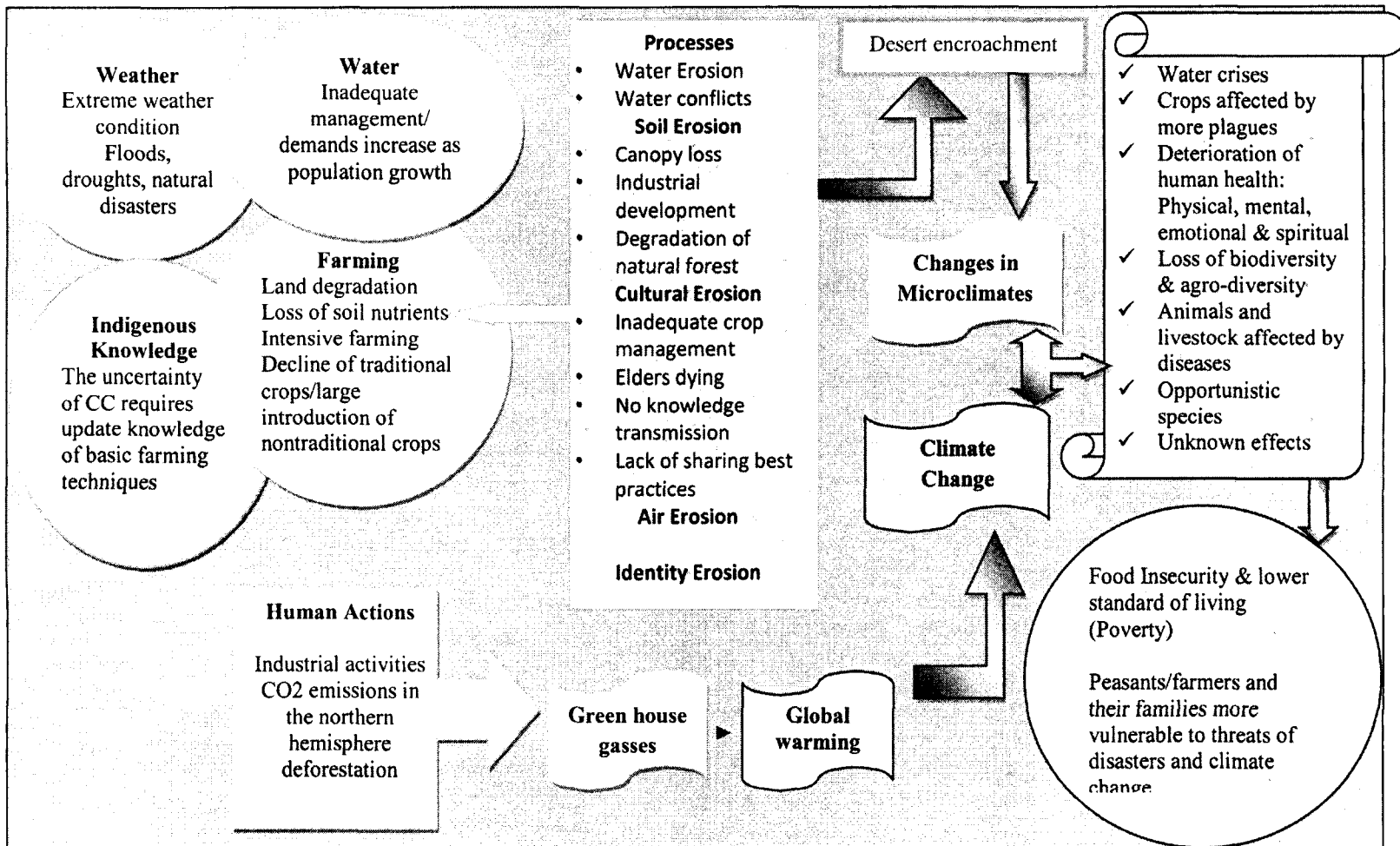


Figure 120. Climate Change: Overview of the Dilemma. Original has been modified/adapted by Orcherton, 2012. Note. Some information taken From "Climate change adaptation in Peru: The local experiences," by Clements, R., Cossio, M., & Ensor, J. (2010).

Summary and Reflection

Cultural Knowing

Culture is a socially transmitted system of information, where information includes knowledge, beliefs and values, and constitutes a "blue print" for cultural behaviour (Oviedo, 2000 as cited in Woodley, 2002). The previous definition launches us into a series of thoughts about how culture manifests in a day- to- day basis, the use of language, customs, traditions, social structures and institutions, ways of life and any other forms of human creativity and innovation (Woodley, 2002). Historically and culturally, the Andean myths express spatial, social, economic, and political relationship that are frequently hierarchical. Localized stories are found with the ancestral origins of an individual community, whose migration or emergence onto the landscape was designed to substantiate or justify access to the natural resources of the land. Here we find that myth explained Andean social organization, both the banding together for communal ventures and the competition between rival groups.

Furthermore, according to Steele and Allen (2004) Andean myths support and strengthen cultural assumptions and practices which are unique and help to differentiate communities at local and regional levels. Myths are also embedded within levels of the supernatural world (and superstitions). This is clearly perceived in what Martina believes:

When A/K/C produces too much it is an announcer of the death of who planted. Other days A/K/C hides does not want to be found. You cannot hide the wrong things you do in life. My mom used to say that A/K/C is jealous and knows our behavior. This is the same as when in the past our ancestors were offended any attempts you do is not going to work. I remember that sometimes my mom sent my dad to get A/K/C from

the chacra, and my dad came back home complaining and brought nothing. So my mom was very upset so she went to the same area that my dad went and found lots of A/K/C. (M. Sanchez, personal communication, August 03, 2011)

Traditions in many communities are socially shared and considered as a preserved knowledge that the community holds. This knowledge is (often) unique to their social context and passed on (generation to generation) through cultural tradition manifestations such as feasts, storytelling, ceremonies and rituals. This includes the traditional ways they work their chacras.

With reference to Andean mythological traditions and digressing briefly to illustrate the point these traditions themselves have nurtured forms of written chronicles and testimonies in colonial Spanish. At the same time, native languages have created inquiries that manifested a *need to know and* throughout history (and up until modern times), *how much of those practices are still present* and *what part* of the current perceptions and traditions remain intact in the coastal communities in Peru? Even though extensive literature exists regarding rituals and ceremonies of respect, it is probably difficult to understand how these practices can broadly help and be related to adaptability, resilience, and sustainability of a culture. Indeed, traditional practices have intrinsic connection with Indigenous Ecological Knowledge (IEK) which has been referred by Woodley (2002) as:

The knowledge derived from direct (experiential) perception by people of their local ecosystem within which they interact and indirectly (through story telling for example) by embodying culturally and spiritually based processes that underpin a belief system. Knowledge is often passed inter-generationally, and modified in the process in response to change. (p. 24)

During the time of the Incas, compensation for the work done was based in reciprocity and shared cultural property. Planting practices described how the Casma people did the things they did. By observing the *hows* and *whys* of planting they were able to achieve some understanding on why they rotated crops, why they use companion crops, and preserved them by diversifying. They possess not only the knowledge of plants, plant use, and their different varieties, but also the stories and history behind them. Indeed, their knowledge of plants goes beyond the function of just eating. Furthermore, the use of traditional tools that farmers and their families use are an important source of connection with their traditional planting practices as many people still use them in their daily agricultural work activities in their chacras. For instance, Cesar and Felicita did some modifications to those traditional tools in order to adjust them to the demands of their cultivar. Archeologists such as Dr. Uceda Castillo, Dr. Briceño, and the Arch. Jorge Gamboa in their presentations during the first cycle of conferences in Casma, Peru “ Investigaciones Arqueologicas en la Costa de Ancash” 2011, emphasized that traditional tools are important to understand and find more information about the type of activities developed by cultural groups in ancient times. Many of these traditional tools today denote a continuity of functions, and replication of practices they did in the past. For example, the use of one-edged machetes, *chuzos* and the possible variation of the *chaquitaclla* (or commonly named *taclla*) used in the Andean Highlands (specifically for the cultivation of potatoes and other tubers) with the plough, pickaxe, or shovel. According to Muniz Ortega (2009):

The farmer of the Tahuantinsuyo using only his *chaquitaclla* could not produce individually sufficient amount of product from the Earth that could help him to cover the food requirements for his livelihood and the livelihood of his family, much less

could be achieved with this simple tool, a plus product or surplus in order to contribute to the maintenance of the powerful state, the military, and the priests. The Hatunruna (a farmer who has to work in the Incas land for all his life) only could make enough on food, shelter, and clothing to cover the needs of his family and achieve surplus in production by staying within the community and by receiving the benefits provided by collective or community work. This was one of the most important factors that allowed the preservation of the community in the Andean region after the discovery of the agriculture. (p. 47)

To conclude, as Mendoza (as cited in Woodley, 2002) states “local knowledge must ‘adopt to adapt’ as knowledge has been evolving for generations of people living within a highly interactive system of ecosystemic relationships” (p. 25).

Social Knowing

The sociology of planting practices in the chacra, convey diverse set of events which are blended within activities that tend to gather and maintain peoples’ cohesiveness in their social relations. The constant interaction with neighbours who visit the farm for different reasons, trade products, buying and selling of goods or services, or only to talk about problems amongst community members bonds them together. In all this events, there is a constant way of negotiation that benefits both the farmer and the visitor. According to Valladolid Rivera (as cited in Apffel-Marglin, 1998) the chacra social practices transmit a profound feelings of affection and respect and this is reciprocal between the chacra and the farmers. I notice that in chacras that farmers had inherited from grandparents or parents this affection is even greater and profound. Each place in the chacra is full of stories and memories and some living trees (ancient trees) enhance in different ways those sharing

conversations about the past. There is a belief that the spirit of their ancestors are present (Quechua informants).

Social interactions and daily relation with the *chacra* are embedded with gratitude towards Pachamama (in the case of the Andes culture) for informants who originally came from the Andes. Gratitude is toward Cochamama⁶⁰ in the case of the Coastal culture for grandparents parents of informants who had born in the Coast. During my field work (interviews and activities related to participant observation), I noticed the particularities that a social practice embraces. Farmers tend to follow a certain routine that is flexible and adjustable and all are engaged in a constant negotiation of reciprocity among farmers, farmer's family, farmer's surroundings and their practices, traditions and beliefs. The *chacra* is full of life this constant negotiation is well observed when people interact with their crops, animals, plants, water, and climate. A historical base of this behaviour, is explained by Spence (1913), who stated:

Ancient Peruvians worshipped the earth (Mamapacha). Pachacama is the spirit which animates all things that emerge therefrom. From him proceed the spirits of the plants and animals which come from the earth. Pachamama is the mother-spirit of the mountains rocks, and plains, Pachacamac the father-spirit of the grain-bearing plants, animals, birds, and man. (p. 124)

It is during these interactions that conversations takes place. Sometimes it is there while cutting the corn plant (done by males) or *despancando* (done by females) the healing process takes place. I have observed experiences of agony and feelings of sadness and grief takes place in the *chacra* (while farmers are working). Their hands are busy moving back and forth

⁶⁰ Cochamama: According to Father Cobo, inhabitants of the Coast have an anthrogeographic equivalent to Pachamama called Cochamana.

with the tools they use to do their work. It is there in the chacra where all those hard to explain experiences take place. After the arduous work, they sit and share food that they (in many cases) bring with them. I believe that the land, the chacra, brings comfort to the farmers and their families. These continuous everyday social relations are embedded in the social chacra activities such as fallowing, weeding, hilling-up, sowing, harvesting.

Sometimes when people are all together they celebrate the arrival of a new life, such as the birth of animals in the farm or the time when the tree is showing the arrival of its new fruits (Apffel-Marglin, 1998). I believe that it is in this ongoing experimentation, modification and adjustment rooted in this intimate relation that the farmers have developed resilience to face challenges.

Spiritual Knowing

According to traditional beliefs, which are still present in the way of knowing today, the spirits of the ancestors live in the physical places (mountains, rivers, chacras) on the land and may support, restrict or teach [you] in the daily activities and interaction that farmers have in their chacras. In many cases, these beliefs are passed to the next generation through a vivid experience that one of the family members experienced (when alive) in the past.

During one of our conversations in the chacra Alejandro shared this with me:

My Elders told us (me and my siblings) that the hills have owners (the spirits). These hills do not let you walk. They can trick you by giving you diseases and headaches. The Elders also told us that there are also animals raised alone by themselves. The hills are the owner of them. We must not take them away or hunt these animals without permission. We must ask the owners of the animals that if they can give that animal to us. We should not take or grab too much from the hills. We must not kill in

excess. The elders have always emphasized that no excess; only take what you and your family need. You can be punished if you do differently.... (A. LLantos, personal communication, July 27, 2011)

Another way to understand spirituality is by how the participants tend to relate it with the stars. This is especially so in regard to the moon that help farmers in the creation, continuation and sustainability of the emerge of new forms of life in the chacra. Valladolid Rivera, pointed out that “the chacra is worked in synchrony with the living rhythm of the pacha (earth)” (p.19) this relation is very important since our history reminds us that we are all children of the Pachamama, or Cochamama (emphasis added). We are all relatives. This is why traditional perception of Ayllus, mingas and aynies are still present in the lives of farmers. Marta and Alejandro shared this story:

During the harvest season our Elders used to have a little gathering among them (have their chicha and coca leaves) but before they drink it. A little amount was given (poured) to the chacra. This was part of the beginning of the harvest celebration and proceeding with the offer of their respect and thankfulness to our Pachamama. The minga or sometimes rantin helped us to work together, we shared with all the families, because all the community was involved. We worked as long as we could and have a feast at the end. This was good, because is like; this time they help me, and next time I help them. Unfortunately, nowadays not many people do that because they are too busy doing other things or they are not interested anymore. I know our traditions are changing. (A. LLantos & M. LLantos, personal communication, July 27, 2011)

As I have observed some of the participants still maintain the ayllu sensitivity in their relation with their neighbours and surroundings. In general, ayllu refers “ not only to relationships between human beings but to the relationship between all the members of the pacha-the stars , the sun, the moon, the hills, lakes, rivers, mountains, meadows, the plants and wild animals and animals in the chacra” (Valladolid Rivera, n.d, p.19).

Conclusion

Listening and learning from men and women farmers in the research, was not only enriching and enlightening, but far more than I expected. Through my interviews and interactions with participants and their families, and neighbours, I learned the importance of collaboration, collective reasoning and ways of knowing. I participated in activities and events organized by the local governmental organizations in the city and surrounding communities of Casma, such as workshops organised by the municipality of Yautan (a district of Casma) in the area of education, management of fruit plantations, and discussions in participative budgeting to benefit local communities. I also participated in the celebration of *campesino day (day of the farmer)*, this is an annual festive event like the celebration of the agriculture where people venerate to San Isidro el Labrador; the saint of the farmers (*El Patron de los Agricultores*). Needless to say that my participation in these events demanded flexibility in my researcher position and some of my own professional learning included:

- Increased awareness and use of language by professionals when they approach farmers. Level of literacy and numeracy should be considered when planning courses, seminars or workshops.
- The need to establish cultural protocols in communities especially with archaeological sites

- During food gathering, some women complained that A/K/C traditional way of food preparation is becoming problematic. The chacras are rented to grow non-traditional cultivars (fruit plantations), and they do not have enough land of their own to plant A/K/C and other traditional crops.
- There is no single definition of farmers' roles as each individual frequently re-negotiated their roles and positions within their own families, neighbours and communities to suit their specific needs.
- There is a need for more holistic understanding of the educational curriculum for primary and secondary levels as they should include the local realities of their own communities. There is an identity crisis among many poor (rural) Peruvians (Indigenous and Mestizos).
- A need exists to establish an educational framework in which the community and educators plan, design and develop their own curriculums towards the rescue of the local, provincial and regional identity.
- Improvement and dissemination of their culture in the local, provincial and regional levels as well as rescue of their traditions and customs may help them to promote tourism.
- There is a general air of discontentment with the Cultural Ministry (*Ministerio of Culture*), and local authorities especially in the area of education and culture.

As a final thought, I hope that Indigenous Peruvian people will continue their creative struggles to survive. I also know that continuation is not easy. Misery and lack of support by local, regional and national authorities is present and a disappointing manifestation of

everyday life. I keep in mind what my mother, an Indigenous woman from Ayacucho, Huamanga, Ocros (who passed away while doing this research) told me...

Since I remember our lives has been always hard and difficult. I always want to learn how to read and write, but they did not allow me. Since I was 4 years old I remember working behind my mother, picking up the potatoes and apichus. Even though, life was hard, the most remarkable memory I have had was being in the chacra and being able to plant with my hands the little cutting vines of A/K/C. My father taught me how to do it, and I remember how good was to eat A/K/C it was there ready under the heat of those rocks...My old rooster and my dogs used to follow me because they knew that they would eat too. I used to sit under the old tree and be so thankful to be there... (E. Gomez Anyosa, personal communication, August, 2011)

Before finishing these lines, and after reading Mario Vargas Llosa statement in the *Harper's Magazine* I began questioning myself is revitalization and preservation of the Peruvian (and others) cultures that important? Did I discover something new? Or was my intention to recover and let the world know so that they too should not let my Peruvian culture erode. The Peruvian writer Mario Vargas Llosa was awarded the 2010 Nobel Prize in literature. He states that:

If forced to choose between the preservation of Indian cultures and their complete assimilation, with great sadness. I would choose modernization of the Indian population, because there are priorities; and the first priority is, of course, to fight hunger and misery. My novel *The storyteller* is about a very small tribe in the Amazon called the Machiguengas. Their culture is alive in spite of the fact that it has been repressed and persecuted since Inca times. It should be respected. The

Machinguengas are still resisting change, but their world is now so fragile that they cannot resist much longer. They have been reduced to practically nothing. It is tragic to destroy what is still living, still a driving cultural possibility, even if this is archaic; but I am afraid we shall have to make a choice. For I know of no case in which it has been possible to have both things at the same time, except in those countries in which two different cultures have evolved more or less simultaneously, but where there is such an economic and social gap, modernization is possible only with the sacrifice of the Indian cultures. (Llosa, 1990, p.8)

Is he right?

Implication for Social Work Practice

Reflecting on some of my personal experiences as well as, narratives and stories shared by the participants in this research, it is clear to reaffirm that social problems are created for the existence of structural inequalities in the social system. This viewpoint is relevant since it recognizes and identifies not only cultural, social, and spiritual discontent, but also ethical and political challenges that vulnerable groups in our society constantly face. Needless to say, embedded with the inadequacies of the social arrangements is oppression and the use of power that had evolved and became social forces that demands' social workers awareness in their approaches and in the way they articulate their practices.

This research influenced my social work practice by extending the boundaries of multi-disciplinary knowledge, allowing me to express my *social work clamor* by demonstrating the constant need of invigorating our mandates, vision, mission, and core of values imprinted in our code of ethics and standards of practices. Its content should be more

in tune with the global realities and new demands on the social, cultural, spiritual, and ecological/environmental dimensions.

This research also allowed me to bring social science different disciplines together to further my knowledge of the complexities and holistic landscapes of the Peruvian Indigenous people. Facilitating this research also helped me to produce a strong sense of community-based approaches and the recovery of my Indigenous identity. Thus, the genealogical and geographical location of the researcher, the literature review and historical background of the setting, the applied methodology and methods, the collection of narratives attached to the photo-geographical display of the places, and the analysis of data, provided an opportunity for me to immerse myself in the culture and advance my skills and awareness to understand new approaches and perspectives, that should influence the overall social work body of knowledge. I am convinced that the learning experiences I gained in this work will contribute immensely to scholarly development and expertise within social and cultural research. In addition, I also hope that this research provides social workers with a better understanding of how the current neo-conservative ideology operates, and if in reality social work practices strive to be anti-oppressive or, if adaptation is necessary for more effective community-based services, especially when dealing with vulnerable population.

Needless to say, this requires reflecting more critically in the actual dynamics of social work models and practices and its future practice implications. Finally, the usefulness of this research by social workers involves bringing the social, cultural, spiritual and ecological/environmental concerns to our social institutions, laws, policies, social processes and practices. In many perspectives, social workers' future approach (es) may demand the incorporation of different modalities and the ability to work across different fields of

practices. This requires a sense of interconnectedness, mutuality, and reciprocity and the utmost respect for communities and their knowledge. Indeed, acknowledging local values allows reciprocal nurturing of knowledge networks and encourages the strengthening of social and cultural values and responsibilities. My hope is that we, as social workers, recognize the inadequacies of social arrangements and target people-place-centered problems. Godelier (as cited in Heinonen & Sperman, 2006) upholds the notion that “the ultimate reason for social transformation is to be found in the compatibility of incompatibility between structures and the development of contradiction within structures” (p. 263).

As a future social worker practitioner, I cannot hide the voice of my heart, the spirit clamor of justice and vindication. I realize that by claiming and recovering my own identity, I was reclaiming my mother’s and father’s identities, rooted in years of pain and anguish. As I reflect in my writings and findings, I realize how important is to reflect on what Coates (as cited in Zapf, 2009 p. 194) states “social work has the choice of continuing to support a self-defiant social order or recreating itself to work toward a just and sustainable society” (p.194). To conclude I only want to embrace what the preamble of NASW that states:

The primary mission of the social work profession is to enhance human wellbeing and help meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed, and living in poverty. A historic and defining feature of social work is the profession’s focus on individual wellbeing in a social context and the wellbeing of society. Fundamental to social work is attention to the environmental forces that create, contribute to, and address problems in living (p. n.d).

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Appendix A: Research Ethics Board Letter

UNIVERSITY OF NORTHERN BRITISH COLUMBIA

RESEARCH ETHICS BOARD

MEMORANDUM

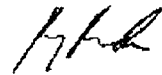
To: Maria Orchardton
CC: Dr. Sil Transken
From: Henry Harder, Chair
Research Ethics Board
Date: April 1, 2011
Re: E2011.0315.030.00
Exploring Jecuan/Casma Geographical Kinship: mapping the landscapes
of identity

Thank you for submitting the above-noted proposal with amendments to the Research Ethics Board. Your proposal has now been approved.

We are pleased to issue approval for the above named study for a period of 12 months from the date of this letter. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or consent form must be approved by the Research Ethics Board.

Good luck with your research.

Sincerely,



Dr. Henry Harder
Chair, Research Ethics Board

Appendix B: Letter of Introduction

Maria Orcherton MA Student of
The University of Northern British Columbia,
3333 University Way, Prince George, B.C. V2N 4Z9
Email: orchertm@unbc.ca
Dear Participant: _____

As a graduate social work student at the University of Northern British Columbia I am required to conduct research and develop a thesis based on my findings. I would like to invite you to consider participating in this research.

The main purpose of this research is to learn from you. I am particularly interested in the revitalization of the social cultural and spiritual traditional planting practices of the ancient and ancestral crop/plant (tuber) apichu/kumara. I want to bring to light how your knowledge can appropriately create a sustainable dimension and build preparedness to defy climate change and its impact. It is hoped that sharing your stories, narratives, and insights will provide the backbone to rebuild the importance of myth, rituals and ceremonies that help in the preservation of your identity and dignify the life of many Indigenous/Mestizo farmers.

Your participation in this study is completely voluntary and you can choose to withdraw your participation at any time. If you withdraw from the study the information you provided will be shredded.

All participants will have the option to choose fictitious names to protect their identities, and confidentiality will be maintained. If you have additional questions or concerns, please feel free to contact me personally, via phone, or email.

Your support is sincerely appreciated,

Maria Orcherton
MSW Student, UNBC

Appendix C: Project Information Sheet

Graduate Student Thesis Researcher: Maria Orcherton, Masters of Social Work, Social Work Program.

c/o University of Northern British Columbia, School of Social Work,
3333 University Way, Prince George, B.C. V2N 4Z9
Home Phone 250- 596-1222 email: orchertm@unbc.ca

Thesis Title: Exploring Jecuan/Casma Geographical Kinship: Mapping the landscapes of identity

Supervisor: Dr Si Transken Associate Professor, Social Work UNBC

Purpose of the Research:

The research purpose is to examine the social, cultural, and spiritual planting practices of the Jecuan/Casma people of South Central Peru regarding their native cultivar Apichu/Kumara/Camote (A/K/C) or sweet potato (SP) (*Ipomoea batatas L.*). This research also seeks to validate the claim that over centuries Indigenous/Mestizo farmers families have developed an ability to adapt and respond to the challenges of climate change.

How respondents will be chosen:

Respondents will be chosen from the Jecuan/Casma Community located in the Province of Huaral, Department of Lima, Peru. In this community the majority of indigenous/Mestizo farmers are dedicated to the cultivation of apichu/kumara among other cultivars.

Respondents will be asked to:

- Contact the researcher personally to arrange a time and place for an interview;
- Commit about time two hours of time for the interview process in two sessions of one hour
- Answer demographic questions and questions about their experience of the traditional planting practices, beliefs, ceremonies and rituals;

Potential benefits

Your participation in this study may be of no personal benefit to you. But, I certainly hope that your participation will help to further the understanding of the way you and your family manage your land, the life of your family and your community. I also hope that this can contribute to future improvement on your farm and encourage local and international organizations to put more attention to the needs of Indigenous and Mestizo people preserving their traditional way of living. You will be given copies of the transcripts of your interviews.

Potential Risks

- Time constraint, the time that the participant can allocate for the interview, without disturbing her/his working hours. To avoid this risk, the participant will decide the place and time.
- Your participation is voluntary. You can choose to withdraw at any time without any consequences. With your permission, I will record our conversations by audiotape or photo videotape or by taking notes and using GPS unit for our visits to the agricultural site.
- I will also ask your permission to use any specific information that you share with me and to cite your name in connection with it. I believe that you should get the full credit for the knowledge that you share with me. If you want me to treat certain information as confidential or anonymous, I will not include it in any reports or outcomes and I will not share it with anyone else. If you choose to remain anonymous I will code my notes and transcripts to protect your anonymity.
- I will analyze the information and only the researcher and her supervisory committee of three UNBC professors (who are all obliged to respect your confidentiality) will have access to the information provided in the interviews;
- The manual or digital recordings of the interviews will be vaulted in my supervisor's office for one year post thesis defense to avoid them being compromised, and the voice recordings will be transcribed into computer files, as well as the photos taken during our interview. The computer files and transcripts will be protected by password. The computer files and transcripts will be destroyed after one year when this student researcher has successfully defended the proposed thesis;
- The final study will be published as a thesis and possibly published in relevant journals, or presented at conferences.

Participants can request and receive a copy of the study from this researcher when it is completed. If participants require any additional information at any time before, during or after the study they can contact the student researcher Maria Orcherton personally at telephone:

011 – 511-563-5421 Lima, Peru. by email at orchert@unbc.ca or my supervisor, Dr. Si Transken by email at si@unbc.ca or phone 00-1-250-960-6643 Any complaints about the research project should be made to the Office of Research, University of Northern British Columbia 250.960.5650, or by email reb@unbc.ca

Appendix D: Research Informed Consent

Do you understand that you have asked to participate in research for the purpose of a Master Thesis? Yes___ No___

Have you read and received an information sheet about the thesis? Yes___ No___

Do you understand these interviews will be recorded using a digital recorder Yes___ No___

Do you understand these interviews will use a small digital video recorder and photos will be taken during the transit walking with the GPS unit? Yes___ No___

Do you understand the benefits and risks involved in participating in this study? Yes___ No___

Have you had the opportunity to ask questions about or discuss the research With the researcher? Yes___ No___

Do you understand you will be compensated with a gift whose value will be Approximately \$20 Canadian. Yes___ No___

Do you understand that you are free to remove yourself from the interview at any point in time and the information collected during the said interview will be destroyed? Neither reason nor cause is needed for you to withdraw. Yes___ No___

Has the issue of anonymity been discussed with you in regards to this research? Yes___ No___

Do you want your name to be used? Yes___ No___

Do you want a made-up name to be used? Yes___ No___

Do you allow me to share the findings of this study with the local schools, root organizations, NGO's local and national and international universities and international conferences? Yes___ No___

This study has been explained to me by Maria Orcherton, Graduate Student, University of Northern British Columbia

I agree to take part in this study:

Date: _____

Signature of Research Participant

Print name of Research Participant

Maria Orcherton

(signature)

(date)

If you have any questions or concerns about this study, please contact:

Professor: Si Transken

The University of Northern British Columbia,

3333 University Way, Prince George, B.C. V2N 4Z9

Email: si@unbc.ca

Appendix E: Interview Question

Community, Settlement, Group, Education

1. What community do you belong to?
2. How many in the family go to school?
3. How many in the family finish primary school_____ secondary school_____?
4. Do you prefer to go to school or work in the chacra?
5. Did you receive any type of training in agriculture?
6. At what age do the children begin to help on the chacra?
7. Does the whole family participate in the chacra?

Community Land Use

RQ # 1

1. What type of land-use do you have?
A/K/C____ Beans _____ Maiz__ other tubers _____ wild forest _____
Others _____
2. Do you own your piece of chacra-land?
3. What do you know about the history of the land you are in now?
4. Did you find any Incas remains while planting or constructing your house?
Yes____ No____. If yes, what did you do?

Folk Ecology and Beliefs Regarding Resource use and Conservation

RQ # 1

1. When a person in your family is sick, what do you do first?
2. Do you use A/K/C alone or in combination with other crops or use as a traditional medicine for you and your family?
3. Do you have spiritual beliefs related to A/K/C?
4. What is the traditional solution you use when plant diseases arise, such as those in your tubers especially A/K/C?
5. Do you use pesticides, yes _____ No _____? If yes, which ones?
6. How do you feel when you put pesticides or any other not natural product in your chacra-land?
7. Do you know about climate change? Yes _____ No _____
If yes? How do you know?

Traditional Oral History, Learning and Culture

(a, b, c)

1. What kind of stories, legends can you tell about A/K/C (use extra paper if need it)
2. What do you know about your native spirituality on A/K/C and forest resources?
3. What did your parents do in the past while growing A/K/C?
4. How does your family/community culture and tradition influence you with respect to agriculture and planting A/K/C use of the land?
5. Do you tell or share your stories with the youth and children and other members of the family?
6. Do you have any planting, sowing, harvesting or gathering taboos?
7. How do you think the changes in the environment will create changes in maintaining your tradition and culture alive?

Climate Prediction

(a)

1. Do you know how to tell when it is going to rain? Or when is it going to be to dry and hot?
2. Do you notice something different in your crops/river/air/animals insect/birds or something else, when something unusual will happen in the weather?
3. Do you share your ways of knowing how to predict the changes in the environment with other members of the communities, to confirm your predictions?
4. How do you think those changes are affecting you and other members in your family or in the community?
5. Are you prepared for any drastic changes in the weather?

Traditional Agriculture Practices

(b)

1. Do you practice rituals or ceremonies before putting the seeds or the cut-stem of A/K/C in the land?
2. How do you care for A/K/C while growing in the field and did you practice any ritual at the final phase of the harvest of A/K/C?
3. What plants do you usually cultivate together with A/K/C? Why?
4. Do the children know how to maintain “the huerto Indígena⁶¹”? How do they know ?
5. What do you do with the foliage of the plants especially A/K/C?
6. How is the chacra going in general? Have you experienced any changes in your cultivars, especially in A/K/C?

⁶¹ Chacra, Farm land, and huerto indígena will have the same connotation which means the small piece of land they have for their agricultural needs.

If so, did you find these problems before?

What did you do?

7. Do you have domesticated animals in the chacra?
8. What types of tools do you use in the chacra? Traditional _____ Modern _____
9. Did you make your own tools or did you buy them? Yes___No___ If yes, how did you learn how to make it?

Culture and Traditional Roles

(b)

1. Do you have any traditional role in your community? Yes___No___
If yes, what do you do?
2. Did any members of your family in the past have any traditional role?
3. Do you know about some of the rituals and ceremonies that your ancestors used to practice in relation to the planting practices of A/K/C? Yes___No___
If yes, what did they do?
Are you doing that? Why? or why not?
4. How can preserve what you know about A/K/C?

Nutritional knowledge

(b)

1. Who cooks at home?
2. Which crops that you produce in your chacra do you use for cooking?
3. What type of dishes do you prepare with A/K/C?
4. How does your family like to eat A/K/C?
5. Did you bring lunch for the children when they go to school? Yes_____ No _____
If yes, what do you bring?
6. Do you know the nutritional values of A/K/C?
7. Did you receive any information/course about the nutritional value of A/K/C or any of the other crops that you have in your chacra?
8. Have you and your family experienced not having enough to eat? Yes___No___
If yes, what did you do, who helped you?
9. How do your rituals activities, customs, and beliefs help you on a daily basis and inspire you to prepare a good meal?
10. Do you get together with other members of the community and share ideas on how to cook or make more delicious dishes with A/K/C?
11. How do you think changes in the environment are affecting the way you prepare your meals?
- 12.

Chakra Economy/Poverty Alleviation

(c)

1. Do you sell A/K/C or other crops? yes___ No___ which ones? _____
If yes, how does it help you in your home income?
2. Do you work for others outside of your own chacra? Yes__ No__
3. Do you have other sources of income? _____
4. Do you use the foliage of A/K/C for any other things?
5. Do you feel the need to improve your financial situation?

Local Perceptions and Evaluation of their Chacras

(c)

1. What are the most valued crops for you and your family? Why? _____
2. Which crop is your favorite and why? _____
3. Which variety of sweet potato do you have in your chacra? why?
4. Do you think mixing trees; crops and animals (agroforestry system) affect (good or bad) crops? Why and How?
5. Which other plants (diversity) do you grow with A/K/C and why?
6. How are changes in the environment affecting your crops (agroforestry system)?.

Community Relation and Travel

(c)

1. What are the worrisome issues in your community?
2. Have you traveled out of (your community)? Yes___ No___
If yes, Why?
3. What are your hopes for the community?
4. What hopes do you have for your children and family?
5. Do you think it is worthwhile to preserve your culture related to the traditional ways of planting apichu and other crops in your chacra? Yes___ No___
If yes, how do you think, you can preserve your culture; rituals, beliefs, ceremonies, any other practice?

Appendix F

Table 2

Ancash Population by Province INEI: Censo 2007

N°	Provinces	Area Km2	Population	Annual grow 1993-2007	Density (hab/Km2)	Number of Districts
1	Huaraz	2,493	147,463	1.4	59.2	12
2	Aija	697	7,995	-0.6	11.5	5
3	A. Raimondi	562	17,995	-0.7	30.4	6
4	Asunción	529	9,054	-0.6	17.1	2
5	Bolognesi	3,155	30,725	0.6	9.7	15
6	Carhuaz	804	43,902	0.7	54.6	11
7	C.F. Fitzcarrald	624	21,322	0.1	34.2	3
8	Casma	2,261	42,368	1.3	18.7	4
9	Corongo	988	8,329	-0.5	8.4	7
10	Huari	2,772	62,598	-0.1	22.6	16
11	Huarmey	3,908	27,820	1.1	7.1	5
12	Huaylas	2,293	53,729	0.4	23.4	10
13	M. Luzuriaga	731	23,292	0	31.9	8
14	Ocros	1,945	9,196	1.9	4.7	10
15	Pallasca	2,101	29,454	0.3	14	11
16	Pomabamba	914	27,954	0.4	30.6	4
17	Recuay	2,304	19,102	0	8.3	10
18	Santa	4,005	396,434	1.1	99	9
19	Sihuas	1,456	30,700	-0.3	21.1	10
20	Yungay	1,361	54,963	0.6	40.4	8
	Ancash	35, 877	1'063,459	0.8	29.6	166

Note: Census, 2007. Source: Municipalidad Provincial de Casma, 2010, p. 14.

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Table 6
Wished, Dreams and Aspiration of the Casma people

Social Dimension	Environmental Dimension	Economical Dimension	Institutional Dimension
Eradication of crime youth	Proper management of solid waste and environmental management of wastewater.	Farming with organized and planned technology.	Institutions should work in coordination with civil society, with a vision of development, with framed projects in the PDCL (Plan de Desarrollo Concertado Provincial) & PDCR Plan de Desarrollo Concertado Regional).
Improve the quality of life			
promote reading and cultural identity	Expansion, management of green areas: Arborisation	Farming activities with management of supply that meets internal and external market demands	
improve nutrition	Implementation of urban & rural public toilet	Dynamic tourism: development with appropriate access, culinary and hotel capacity	Civil society trained and strengthened in the development of the provincial institution.
Promote preventive activities in Health	Defense of the riversides and arborisation of the marginal strip	Exploitation of mineral resources in a responsible manner and without contamination	
Quality in Education	The ecology conservation		Institutions with a vision of development according to the PDCP and PDCR
harmonious coexistence of families because of the practices of with values and principles	Sensitive population assumes environmental conservation habits	The rational use of vital resources: e.g., water	neighborhood Committee boards directly related in the decision-making process
Inclusion of youth with positive aspirations and opportunities.	Casmaña population practicing environmental responsibility	Citizens with independent economy	
Honest authorities with moral principles	Productive and industrial activity with social and environmental responsibility	Productive employment: adequate wages	Institutional representatives that provide information to civil society through the use of different media
work opportunities for the disable	Organic agriculture developed in the province	Citizens with technical laboral capacity and with productive conservation ecological culture	Institutions and civil society leaders at the provincial and regional level
Healthy recreational environments	Management and elimination of noise and air pollution.		Institutions and well trained representatives in managerial and management business
	Operational management for water resources and adequate practices for fishing and hunting		

Note: This table provides the wishes, dreams, and aspiration of the Casma people. Source: Municipalidad Provincial de Casma, 2010 – 2021, pp. 26-28.

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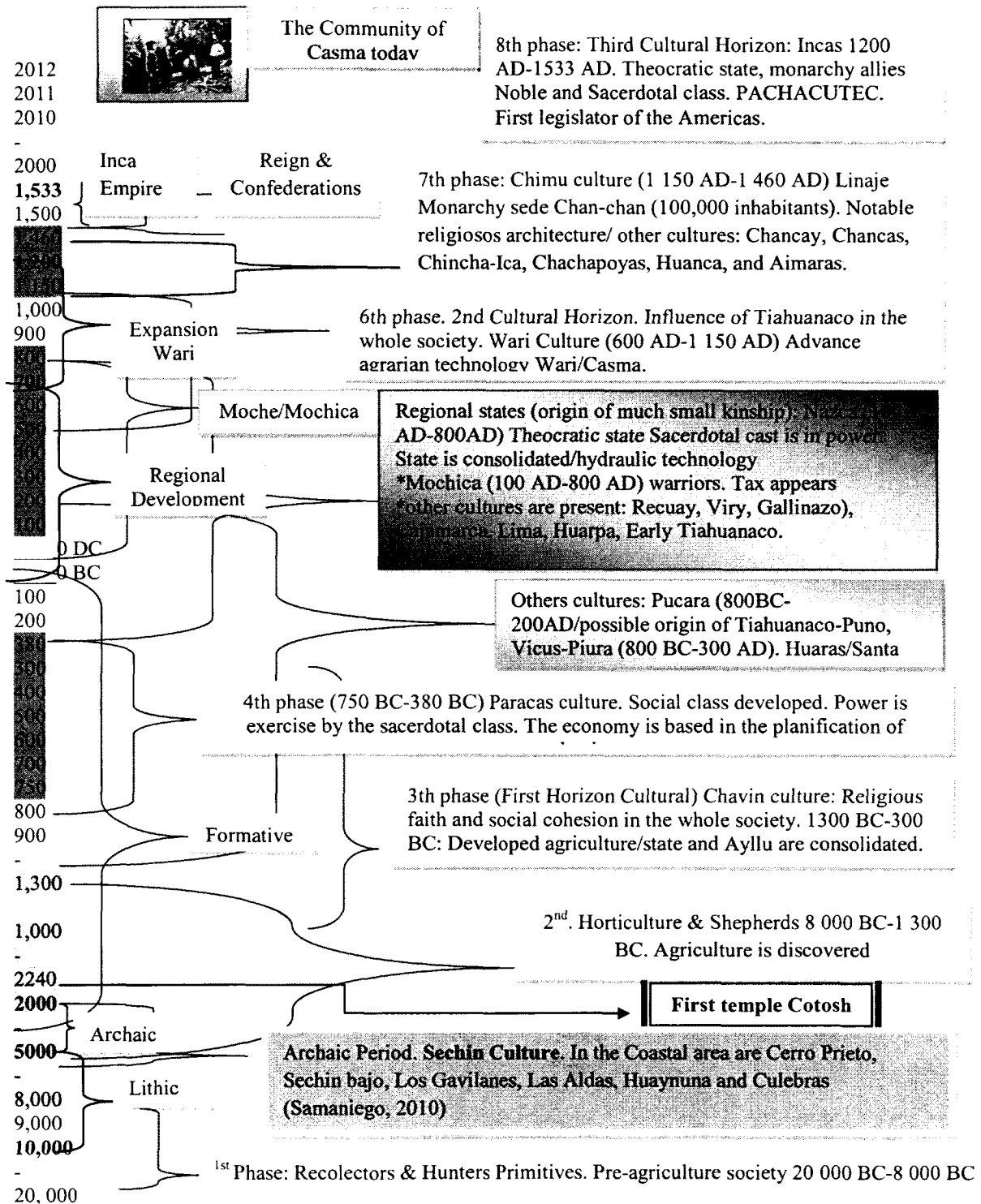
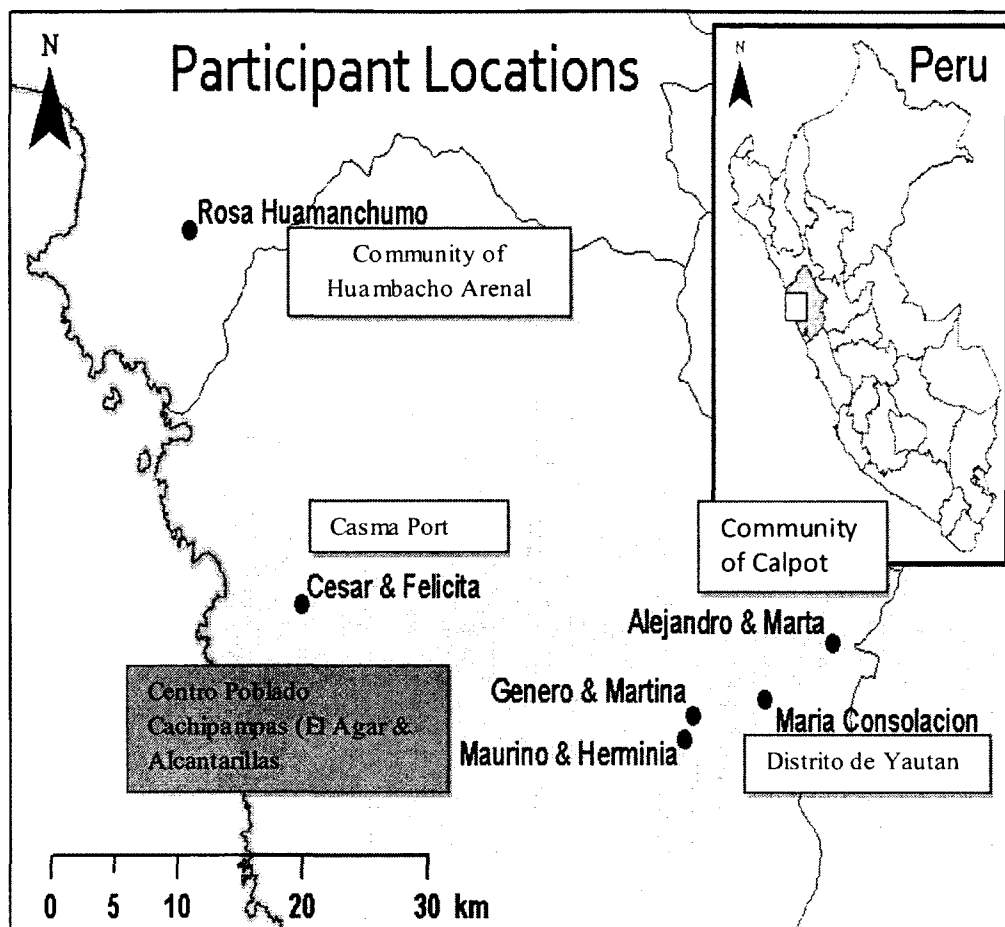


Figure 8. Detailed Layers of Peruvian pre-Inca-Culture. Information belongs to general knowledge teach in Peruvian schools. Orcherton, 2011.

Appendix F

Participants Location of Province of Casma, Department of Ancash, Peru



Map 2. GIS Map Department of Ancash, Province of Casma shows participants' locations Orcherton, June-July, 2011

Communities

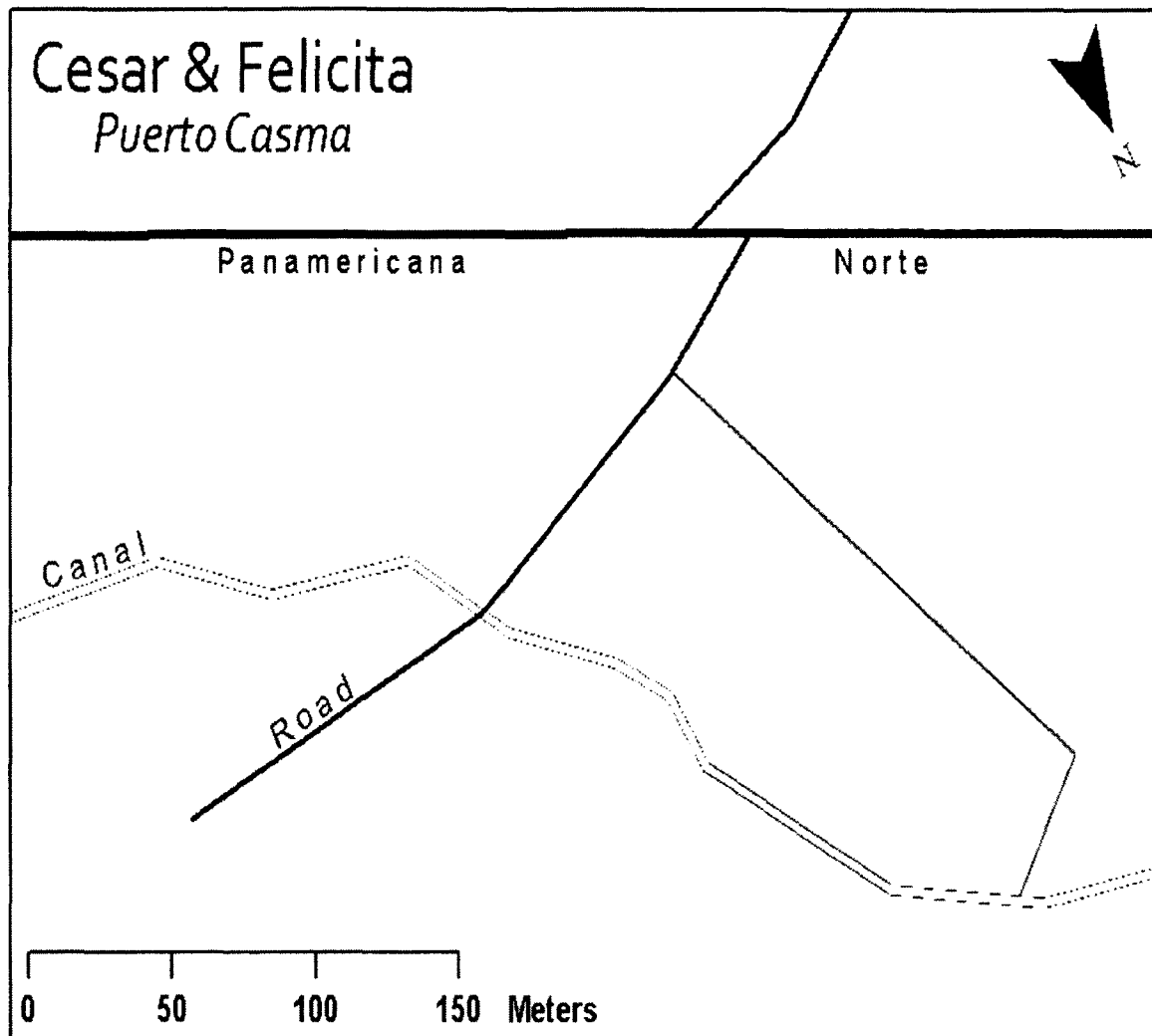
Casma Port:
 Cachipampas El Agar:
 Yautan District:
 Calpot Community:
 Cachipampas Alcantarilla:
 Huambacho Arenal:

Participants

Cesar & Felicita
 Genaro & Martina
 Maria consolacion
 Alejandro & Marta
 Maurino & Herminia
 Rosa & Ruth

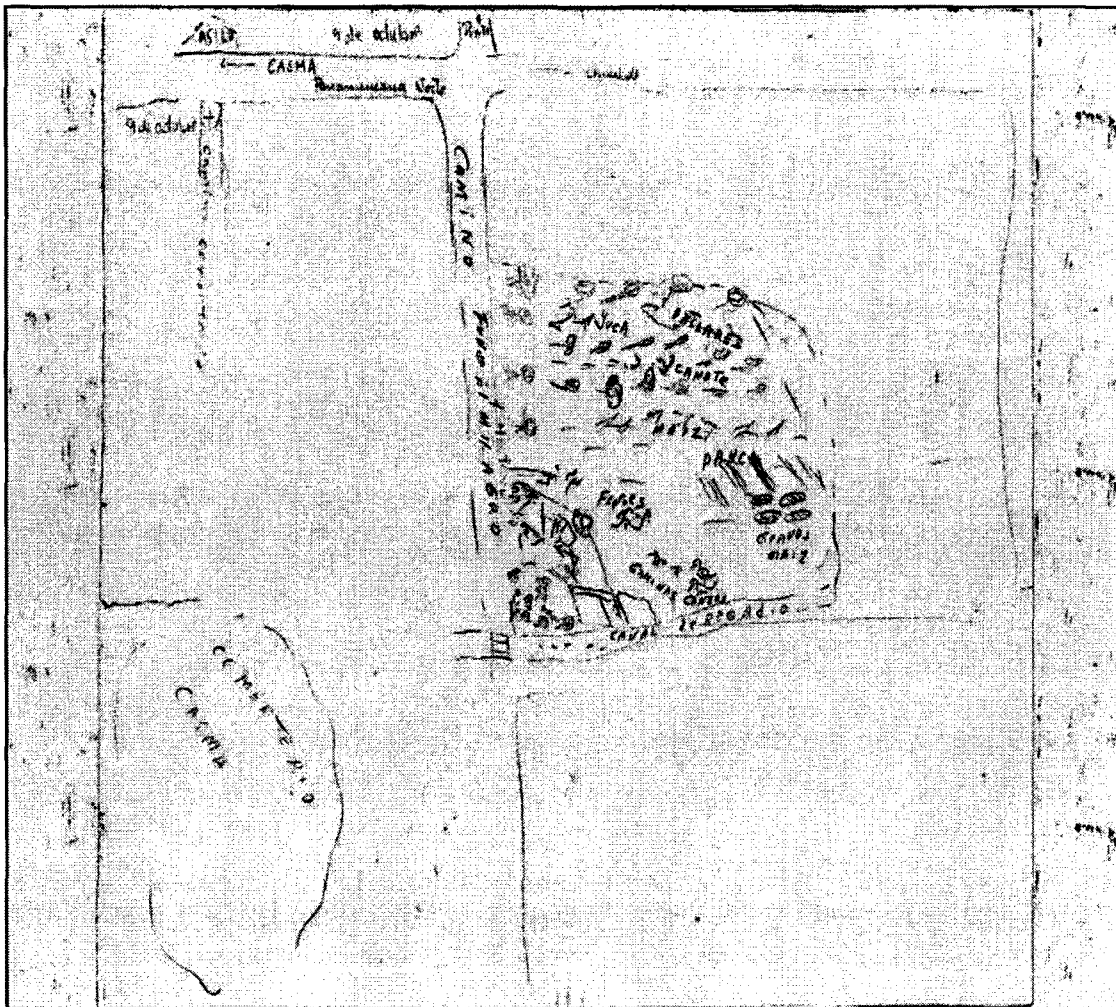
Appendix F

Participant: Cesar & Felicita
Community: Casma Port



Map 3: GIS Map of Cesar & Felicita's Chacra, Orcherton, June-July, 2011.

Participant: Cesar & Felicita
Community: Casma Port



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Participant: Cesar & Felicita
Community: Casma Port

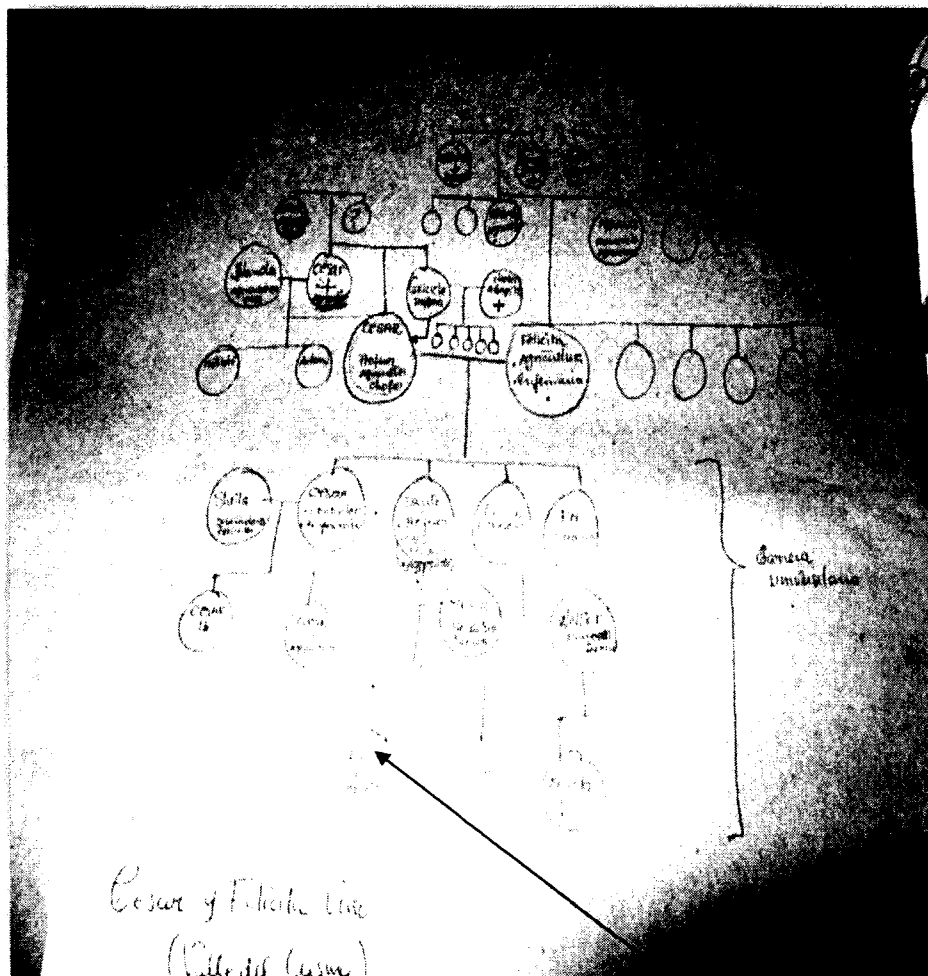
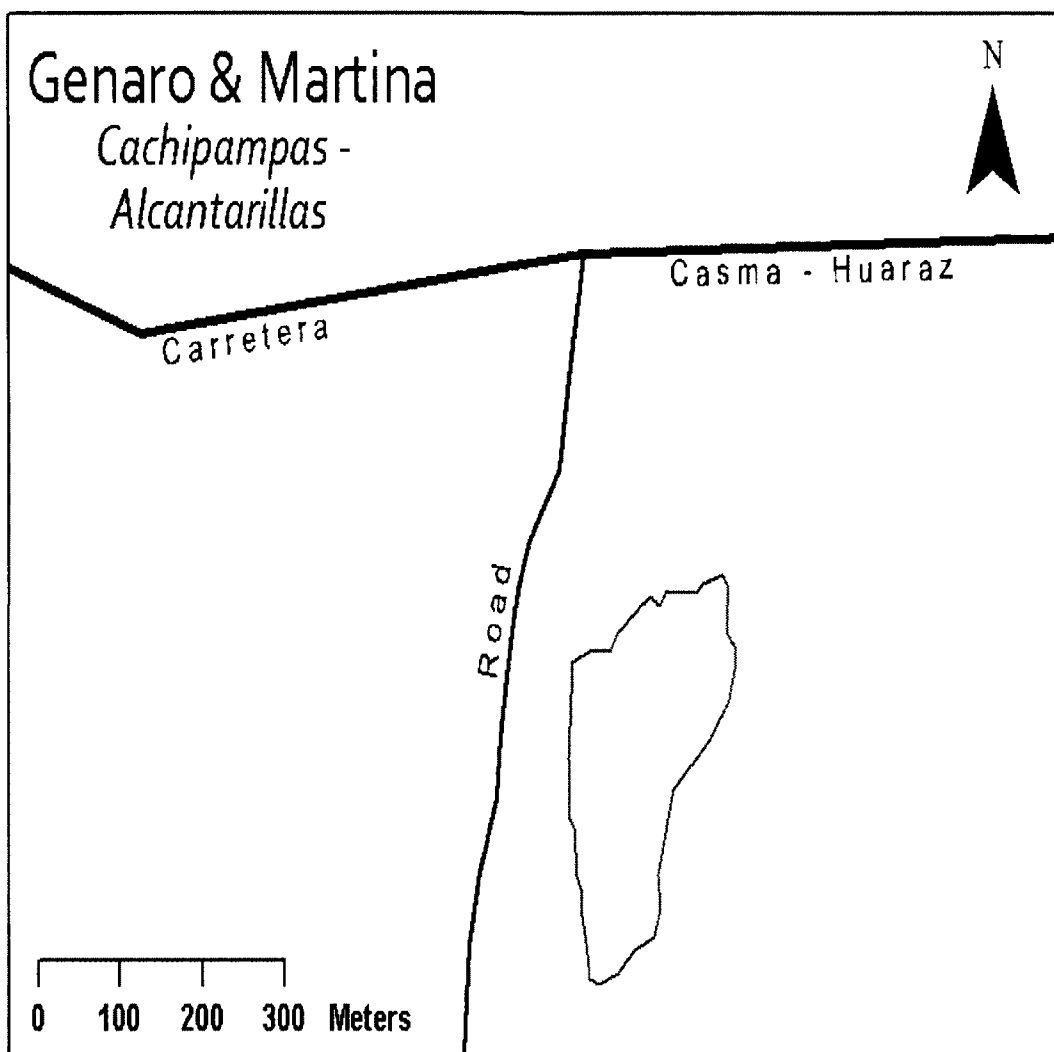


Figure 121. Cesar & Felicita Genealogical Chart Shows one dedicated Children Dedicated to the Chacra, June - July, 2011.

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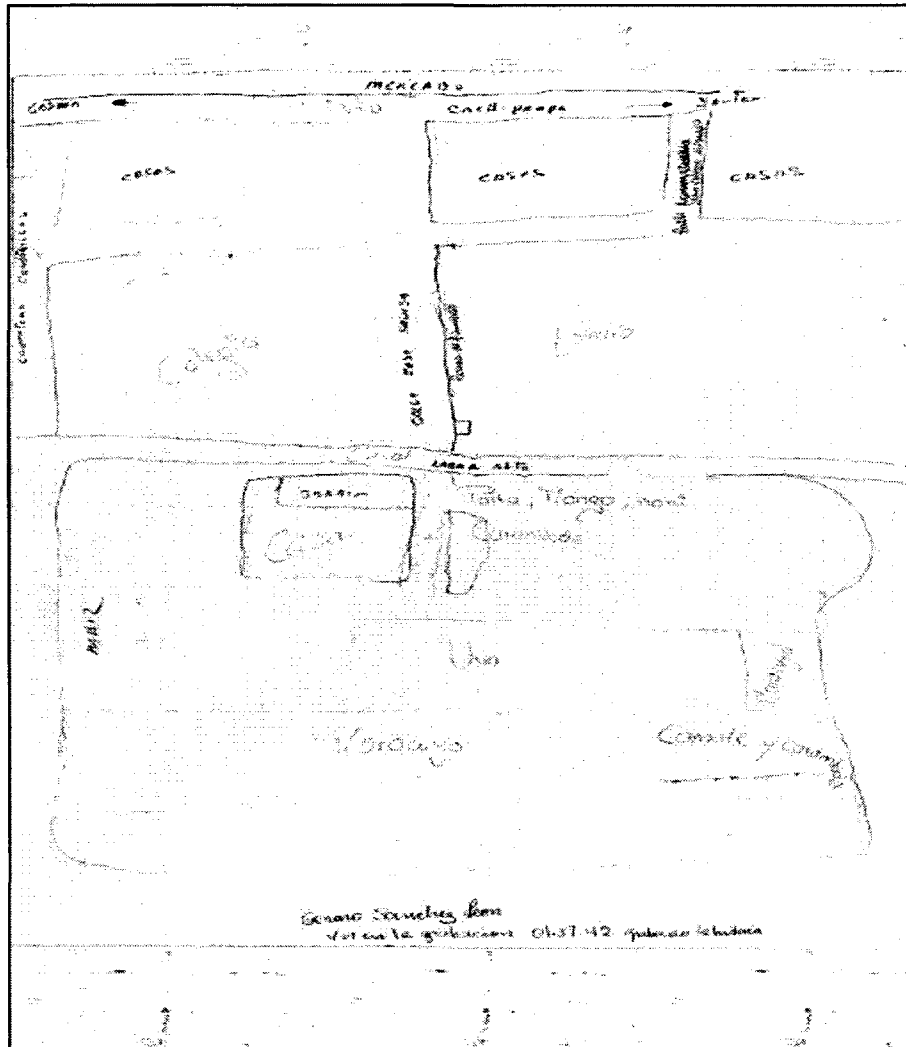
Participant: Genaro & Martina
Community: Cachipampas El Agar



Map 5: GIS Map of Genaro & Martina's Chakra, Orcherton, June-July, 2011.

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Participant: Genaro & Martina
Community: Cachipampas El Agar



Map 6. Handmade Map of Genaro & Martina's Chacra, Orcherton, June-July, 2011.

Appendix F

Participant: Genaro & Martina
Community: Cachipampas El Agar

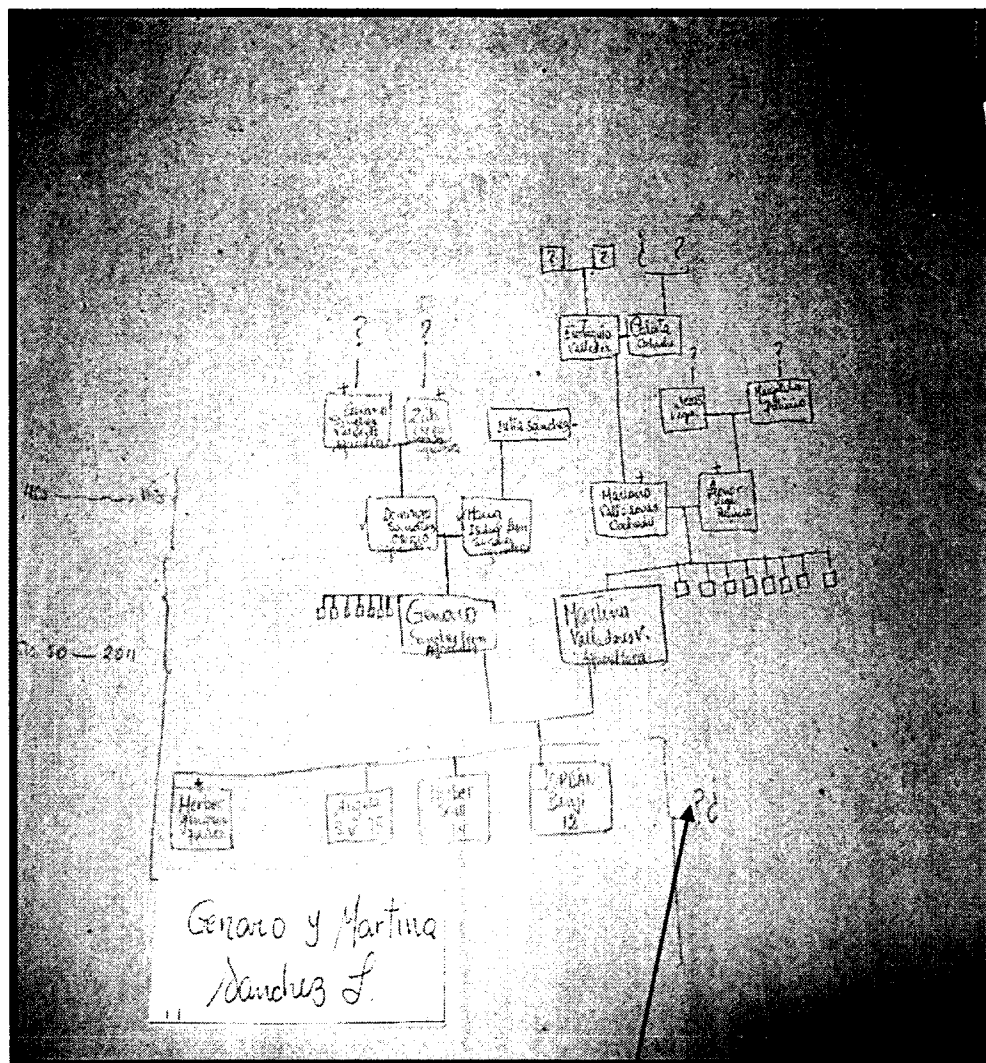
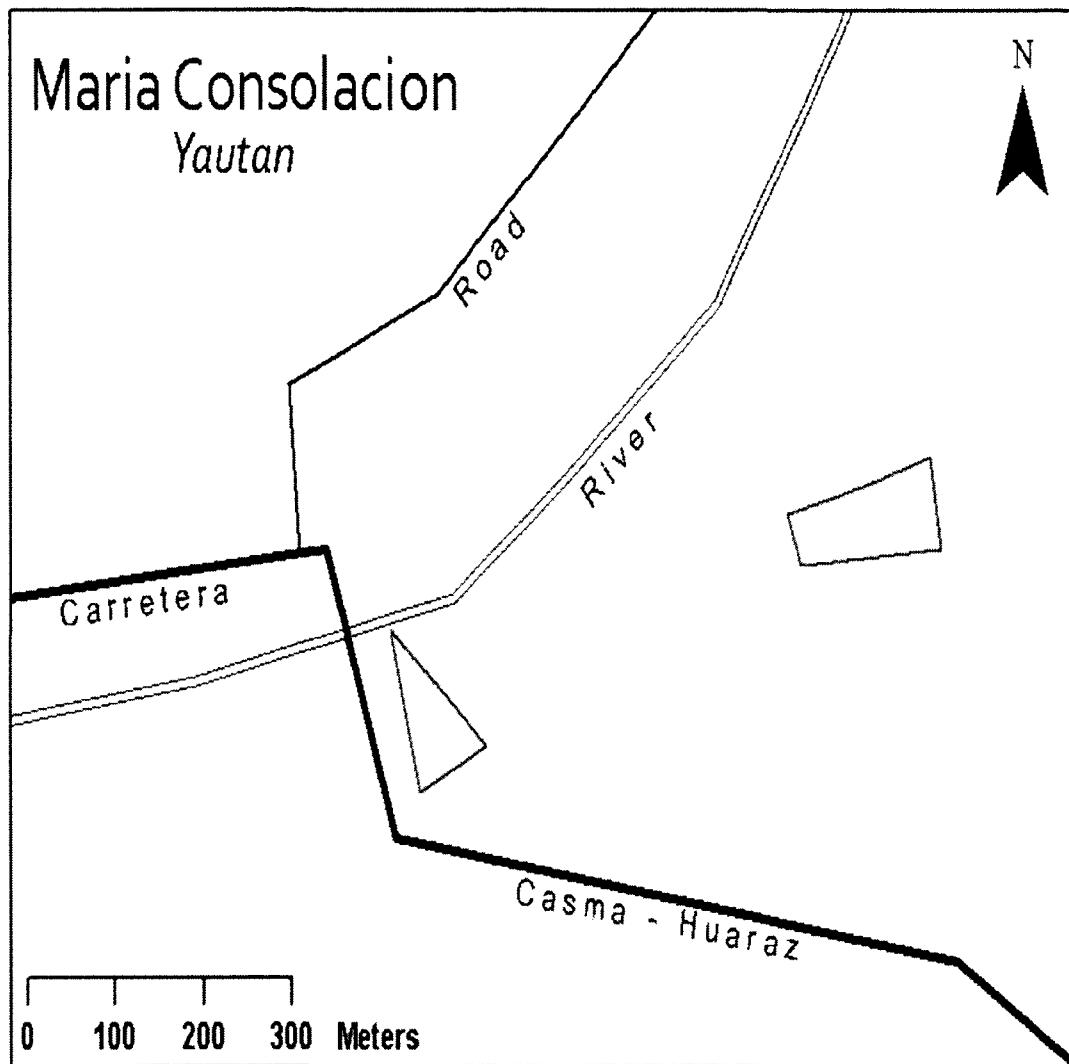


Figure 122. Genaro & Martina's Genealogical Chart (?) Shows Uncertainty of Children Continuation on Chacra Activities, June-July, 2011.

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Participant: Maria Consolacion
Community: Yautan



Map 7: GIS Map of Maria Consolacion's Chacra, Orcherton, June-July, 2011.

Appendix F

Participant: Maria Consolacion
Community: Yautan



Figure 123. Maria Consolacion's Chacra, Orally/Visually Mapping the Limits of the Chacra. June-July, 2011.

Appendix F

Participant: Maria Consolacion
Community: Yautan

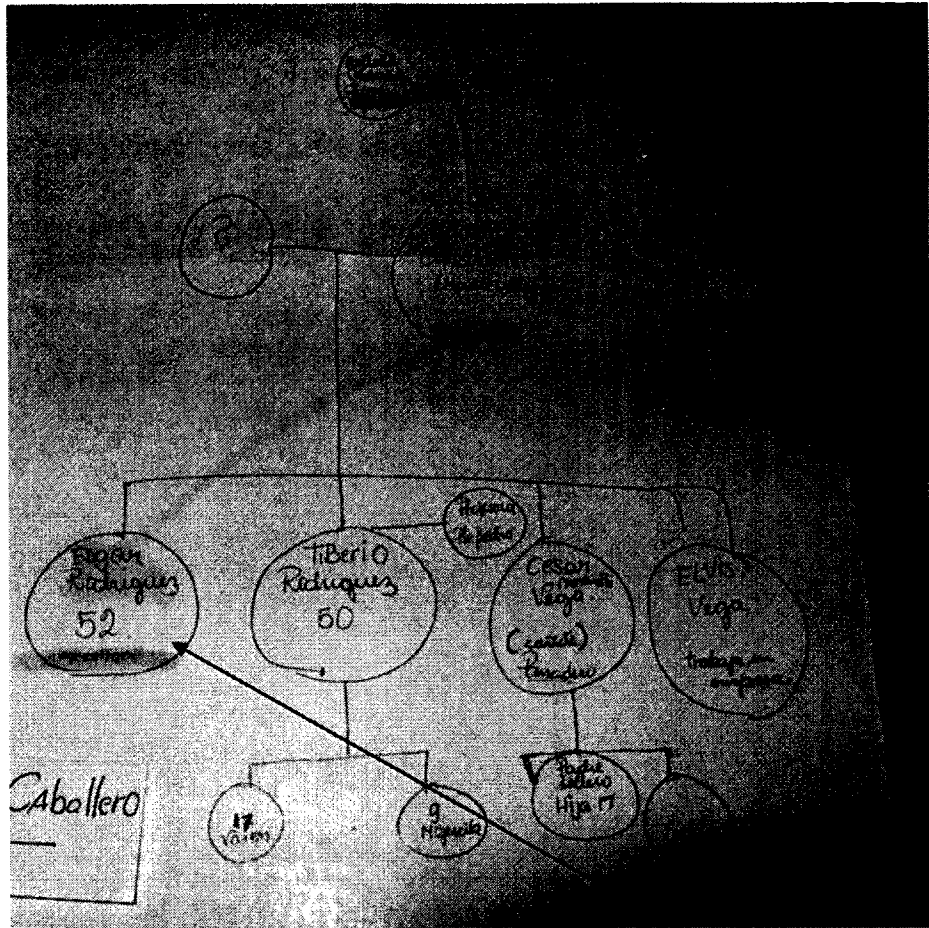
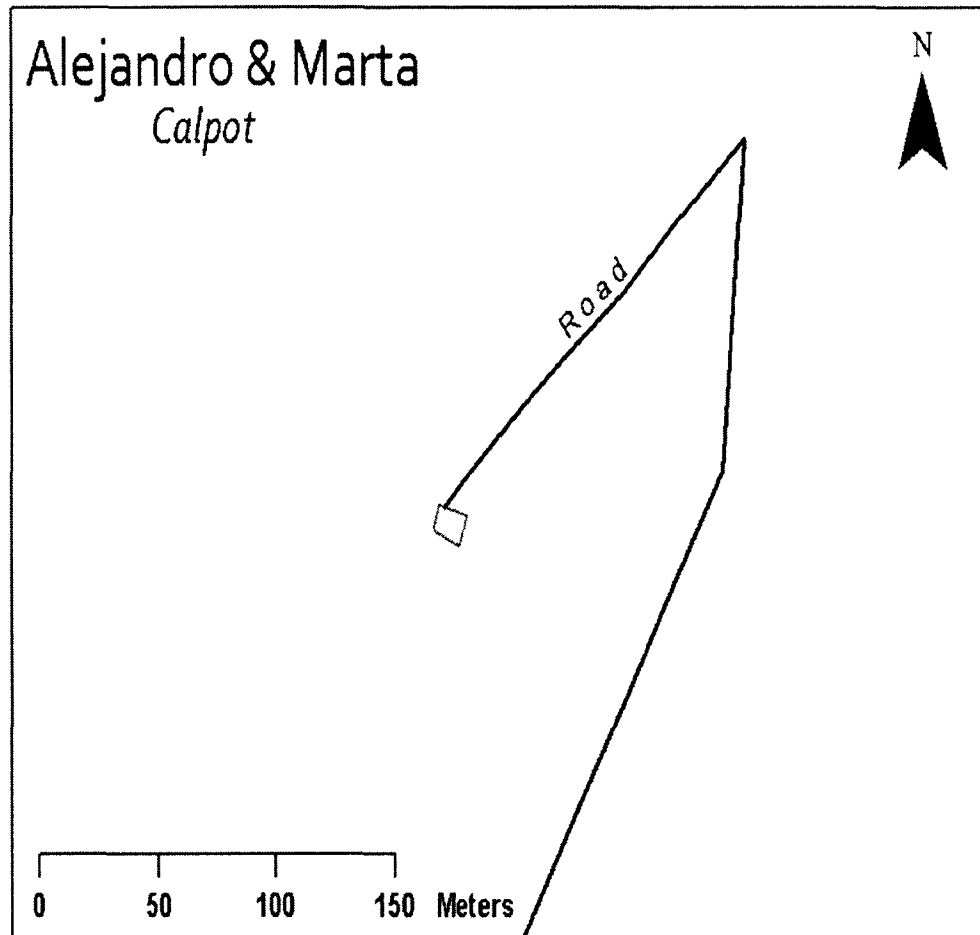


Figure 124 . Maria Consolacion Genealogical Chart Shows *one* of Children Dedication to the Chacra, June-July, 2011.

Appendix F

Participant: Alejandro & Marta
Community: Calpot



Map 8: GIS Map of Marta's chacra, Orcherton, June-July, 2011.

Appendix F

Participant: Alejandro & Marta
Community: Calpot



Figure 125. Marta Orally/Visually Mapping the Limits of the Chacra, June-July, 2011.

Appendix F

Participant: Alejandro & Marta
Community: Calpot

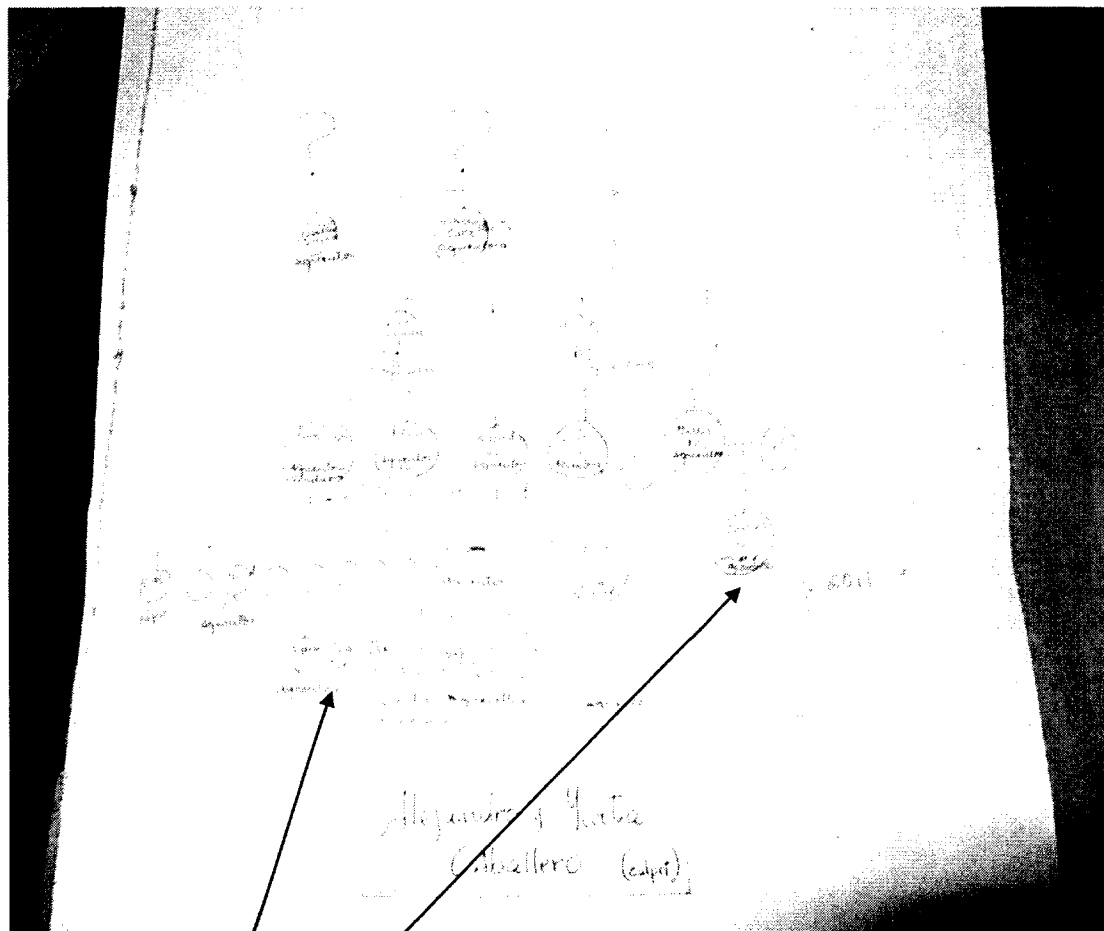
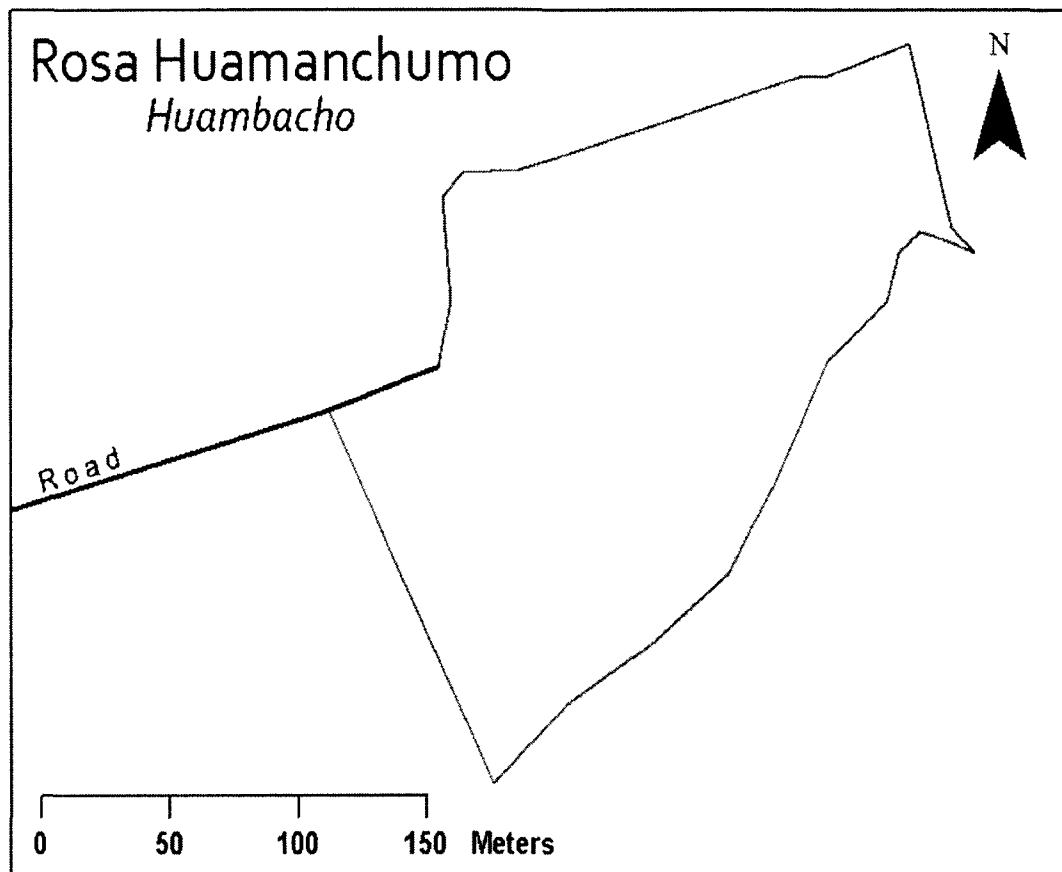


Figure 126. Alejandro & Marta's Genealogical Chart. It shows Children Dedicated to the Chacra Alejandro (4) & Marta (1). June-July, 2011

Appendix F

Participant: Rosa Huamanchumo
Community: Huambacho Arenal



Map 9: GIS Map of Communal Chacra (Rosa). Orcher-ton, June-July, 2011.

Appendix F

Participant: Rosa Huamanchumo
Community: Huambacho Arenal



Figure 127. Rosa Orally/Visually Described Limits of the Communal Chacra, Orcherton, June-July, 2011

Appendix F

Participant: Rosa Huamanchumo
Community: Huambacho Arenal

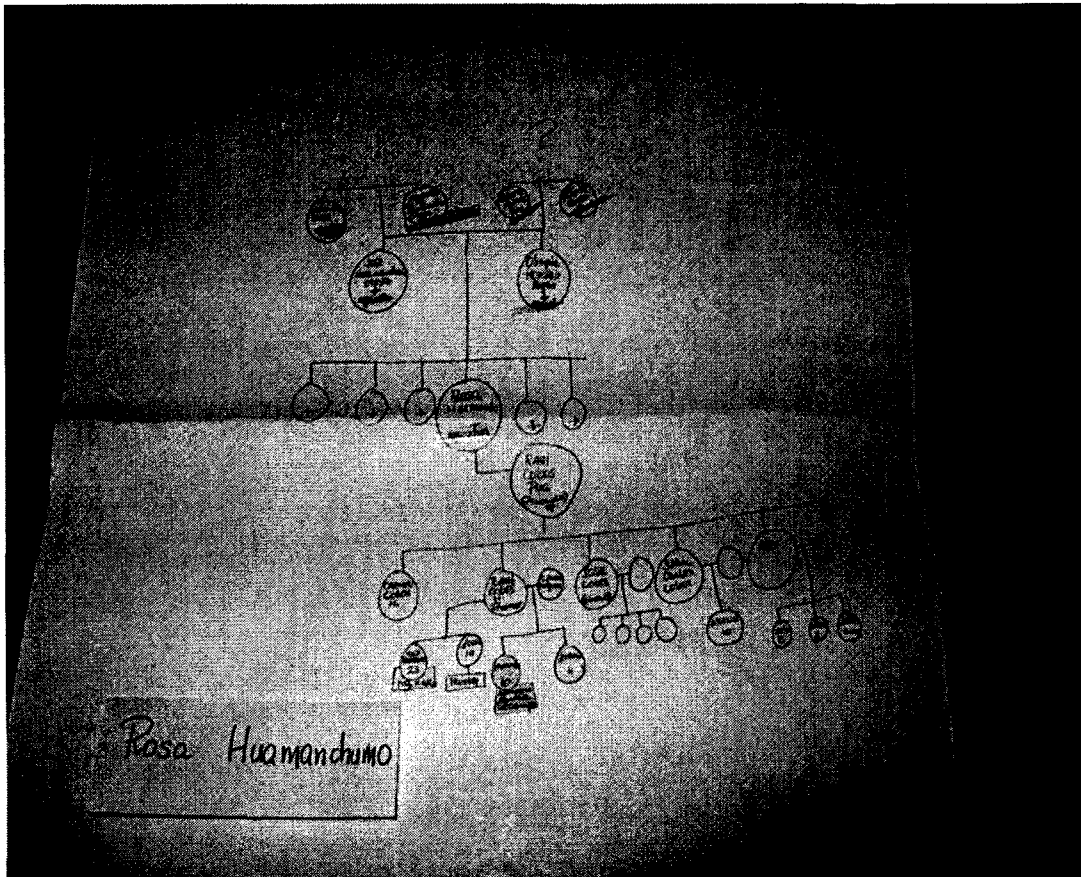
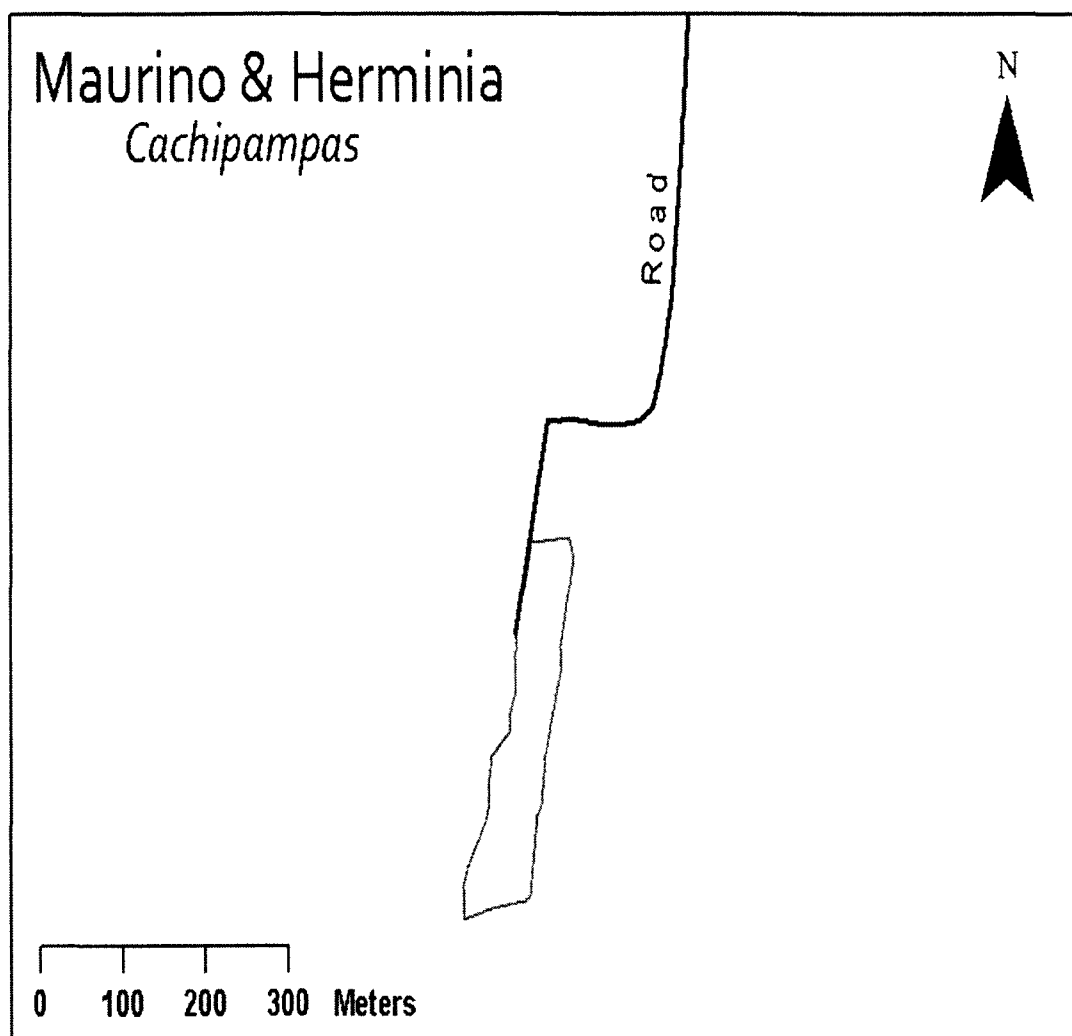


Figure 128. Rosa's Genealogical Chart Shows *one* of the Children Dedicated to the Chakra. Orcherton, June-July, 2011

Appendix F

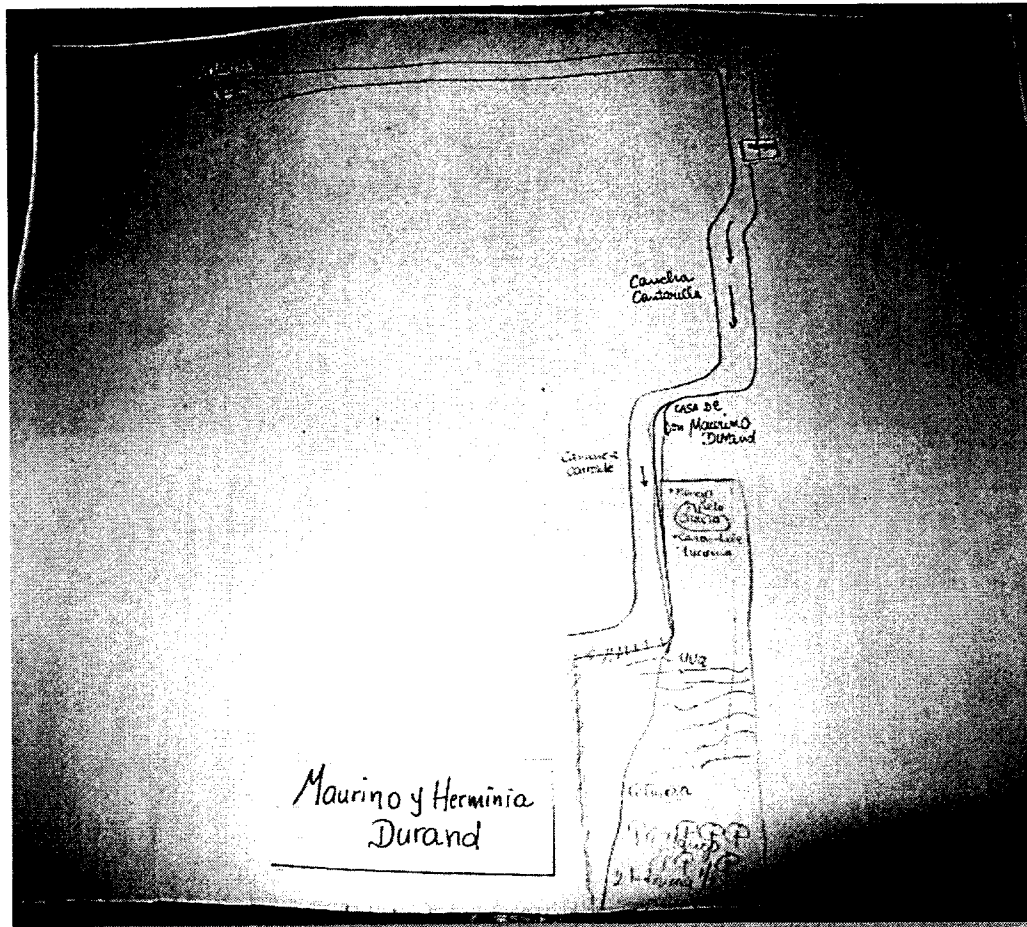
Participant: Maurino & Herminia
Community: Cachipampas Alcantarilla



Map 10: GIS Map of Maurino & Herminia's Chacra, Orcherton, June-July, 2011.

Appendix F

Participant: Maurino & Herminia
Community: Cachipampas Alcantarilla



Map 11. Handmade Map of Maurino & Herminia's Chakra, Orchardton, June-July, 2011

Appendix F

Participant: Maurino & Herminia
Community: Cachipampas Alcantarilla

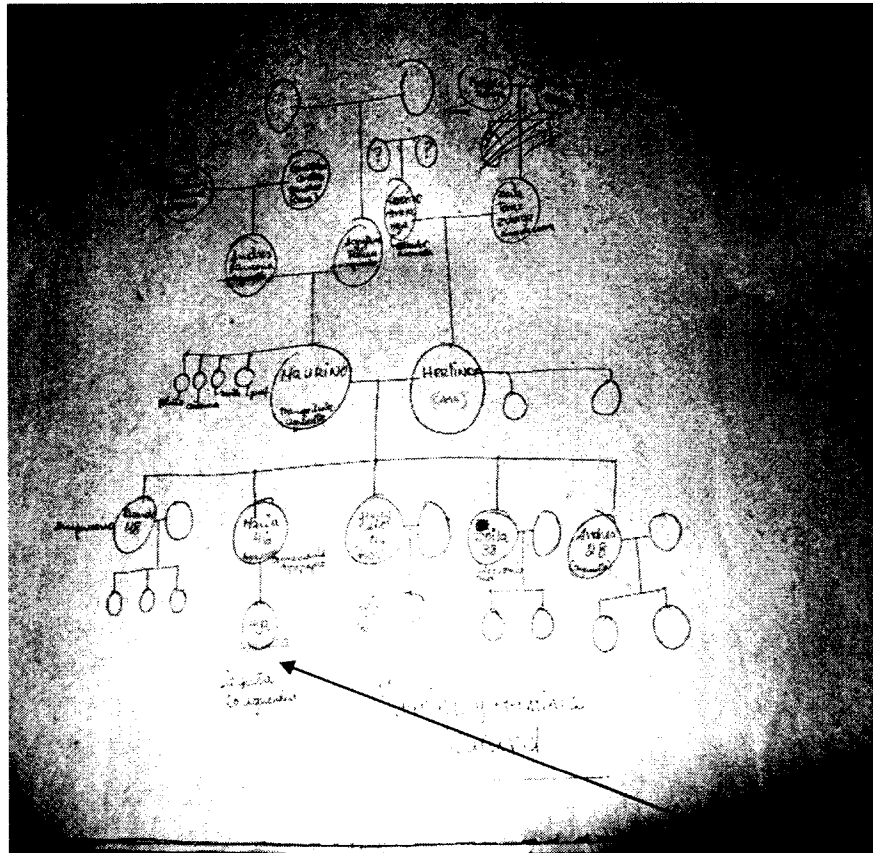


Figure 129. Maurino & Herminia Genealogical Chart Shows only *one* of the Children Dedicated to the Chacra. June-July, 2011.