NO PODEMOS COMER BILLETES:
CLIMATE CHANGE AND DEVELOPMENT IN SOUTHERN ECUADOR

by

Lisa Coffield DePaoli

B.A. in Psychology and Anthropology, California University of Pennsylvania, 2000

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Department of Anthropology

This dissertation was presented

by

Lisa Coffield DePaoli

It was defended on

October 12, 2011

and approved by

Dissertation Advisor: Richard Scaglion, PhD, Professor, Department of Anthropology

Andrew Strathern, PhD, Professor, Department of Anthropology

James Richardson, PhD, Professor, Department of Anthropology

Mark Abbott, PhD, Associate Professor, Department of Geology and Planetary Sciences

María-Auxiliadora Cordero, PhD, Research Associate, Department of Anthropology

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This project investigates the relationship between autochthonous people and immigrants in a valley of southern Ecuador, specifically in terms of climate change and related moves toward sustainable development. The landscape and environment are frequent topics of conversation, especially concerning the increasingly dry climate. Engagements between individuals often result in dynamic relationships in which people take active steps to curtail human impacts, such as developing new land-use and livelihood strategies.

Southern Ecuador has historically experienced the effects of periodic drought, and land degradation is exacerbating the problem. This and other factors, including the relative isolation and lack of rural development in Loja province and the overall economic situation in Ecuador, has resulted in large-scale migration of Ecuadorians from the province of Loja. Paradoxically, the valley in which fieldwork was carried out is also known as the Valley of Longevity and has attracted immigrants from various other countries. Some of these expatriates have lived in the valley for long periods of time and have developed working relationships with Ecuadorians that have proved beneficial in terms of development.

This dissertation is the result of 13 months of ethnographic fieldwork that included participant observation, formal and informal interviews, and the analysis of written materials. The project focused specifically on how the local-nonlocal relationship impacts livelihoods, land use change, sustainability, and the perception of and attention to issues surrounding climate change. These themes help us to understand the distributional consequences of changes in agri-food systems, and have led to concern over where food is going to come from because, as some informants have said, "*no podemos comer billetes* " (we can't eat dollar bills). Research shows that the social heterogeneity of the valley fosters mutual learning and benefits and contributes to more varied views of the natural environment and of the use of natural resources. This project demonstrates how responses to climate change and land degradation may be integrated into emerging sustainable development strategies, particularly important because human activity will both drive and mediate the impact of climate change during the next century.

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AGRA	Alliance for a Green Revolution in Africa
APAFS	*Asociación de Productores Autónomos de Fréjol para Semilla* (Association of Autonomous Bean Seed Producers)
APECAEL	*Asociación Agroartesanal de Productores Ecológicos de Café Especial del Cantón Loja* (Agroartesanal Association of Ecological Producers of Special Coffee of the Canton of Loja)
BOPRISUR	*Red de Bosques Privados del Sur del Ecuador* (Network of Private Reserves of Southern Ecuador)
CACSE	*Caja de Ahorro y Crédito Sociedad Ecológica* (Credit and Savings Bank "Ecological Society")
CEDERENA	*Corporación para el Desarrollo de los Recursos Naturales Renovables* (Corporation for the Development of Renewable Natural Resources)
FAPECAFES	*Federación Regional de Asociaciones de Productores y Exportadores Ecológicos de Café del Sur* (Regional Federation of Associations of Ecological Producers and Exporters of Coffee of the South [of Ecuador])
FAO	Food and Agriculture Organization of the United Nations
GHG	greenhouse gases
HCPL	*Honorable Consejo Provincial de Loja* (Honorable Provincial Council of Loja)
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IDB	Inter-American Development Bank
IERAC	*Instituto Ecuatoriano para la Reforma Agraria y Colonización* (Ecuadorian Institute for Agrarian Reform and Colonization)

IFI	International Financial Institution
INAMHI	*Instituto Nacional de Meteorología y Hidrología* (National Institute of Meteorology and Hydrology)
INDA	*Instituto Nacional de Desarrollo Agrario* (National Institute for Agrarian Development)
INEC	*Instituto Nacional de Estadística y Censos* (National Institute of Statistics and Census)
INIAP	*Instituto Nacional Autónomo de Investigaciones Agropecuarias* (National Autonomous Institute for Agricultural Investigation)
IPCC	Intergovernmental Panel on Climate Change, a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP)
IPM	integrated pest management
IPR	intellectual property rights
IRD	*Instituto de Investigación para el Desarrollo* (Institute of Investigation for Development)
ISI	import-substitution industrialization
MDGs	Millennium Development Goals
MV	modern hybrid crop variety
PACA	Participatory Appraisal of Competitive Advantage
PAR	Participatory Action Research
PNP	Podocarpus National Park
PREDESUR	*Subcomisión Ecuatoriana Programa de Desarrollo del Sur* (Program of Regional Development in the South of Ecuador) (regional development organization of El Oro, Loja, and Zamora-Chinchipe)
PROFRIZA	*El Proyecto Regional de Fréjol para la Zona Andina* (Regional Bean Project for the Andean Zone)
PROMSA	*Proyecto de Modernización de los Servicios Agrícolas* (Project to Modernize Agricultural Services)

PRONADER	*El Programa Nacional de Desarrollo Rural* (National Program of Rural Development)
REDD	Reducing Emissions from Deforestation and Forest Degradation
SAP	structural adjustment policy
SIISE	*Sistema Integrado de Indicadores Sociales del Ecuador* (Integrated System of Social Indicators of Ecuador)
UTPL	*Universidad Técnica Particular de Loja* (Technical University of Loja)
WCED	World Commission on Environment and Development

PREFACE

Acknowledgements. Not surprisingly for this sort of undertaking, there are many people and organizations to which I would like to express gratitude and appreciation. First of all I would like to express a great deal of gratitude to my husband Dirk for all of his love, support, and patience over the years. I could not have done it without you; you deserve a degree of your own. To Chasqa, my Ecuadorian canine companion, you've been there faithfully through it all – fieldwork in Ecuador and writing up at home. It's kind of odd to thank a dog, but yet I do believe you deserve some credit. I also appreciate the support of the rest of my family, even though there were times when you didn't understand what I was doing or why I was doing it. This family includes my sons Josh and Justin, my parents Riley and Virginia Coffield, my brother Kurt and his wife Dede and their sons Zak and Shane.

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Linguistic notation. Quichua and Spanish words and quotes are written in italics; any English translation follows in parentheses, unless otherwise noted. Some names have been changed to protect anonymity. This dissertation is written in the ethnographic present, or the present tense at the time the fieldwork was performed. A glossary of relevant terms follows the last chapter of this dissertation.

0.0 INTRODUCTION

0.1 RESEARCH PROBLEM

This research is situated at the intersection of concerns surrounding rural development and climate change. After the decades-long focus on urban development, the related but ineffective trickle-down theories of economic growth, and resulting rural-to-urban migration, renewed attention is being placed on the pressing needs of rural areas. However, in addition to poverty, joblessness, and out-migration, people in rural areas often have to deal with issues of land degradation and climate change. Alternative development strategies that take into consideration ecology, culture, and context are being sought. Therefore, as discussed in this dissertation, development refers to forms of cultural and socioeconomic change leading to desirable common goals, rather than in the narrowly conceived economic sense of the term.

The area in which this research was undertaken is a relatively isolated part of Ecuador and is experiencing these very problems. The population is very diverse, and because of a history of drought and the desertification[1] approaching from the southwest, climate change is a frequent topic of conversation. This was utilized as a lens through which to examine issues of change, development, and adaptation, and also served to highlight contentious issues as well as

[1] Swift (1996:73) states that desertification is "the generally received wisdom that dryland environments are being rapidly degraded (reduced in long-term economic productivity) by a varying mix of natural and human factors."

areas of agreement and inroads for positive change since, as Rayner states, "Climate and weather emerge as important social constructs mediating people's experience of and interaction with nature and with each other" (2003:289). This site was an ideal one in which to examine the interaction of a diverse group of people and their knowledge, perceptions, beliefs and behaviors surrounding climate change, important not only in this particular area but also in other areas around the globe.

The term "climate change" as used in this dissertation follows the definition used by the Intergovernmental Panel on Climate Change [IPCC], and refers to any change in climate over time that results from either natural variability or human activity (Parry, et al. 2007:6).[2] The most recent documents published by the IPCC and others illustrate the links between sustainable development policies and climate change practices (e.g., Engle 2009; Metz and Intergovernmental Panel on Climate Change 2007; Munasinghe 2001; Roncoli, et al. 2009; United Nations 2008). In addition, the 2010 World Development Report (World Bank 2009) carries the title *Development and Climate Change*.

Climate change presents yet another challenge to the current development paradigm (Engle 2009). Climate change significantly affects the economic, social and environmental dimensions of sustainable development. Likewise, this ethnographic research addresses the links between the two in a specific setting for the following reasons: adaptation generally takes place at the local level; by understanding local people's awareness and perceptions of climate and the environment, we can better comprehend how they will behave and adapt to climate change; and it is necessary for climate change and development issues to be approached, understood, and addressed within their context, considering various local stressors. Local people can define the

[2] This dissertation will focus on climate change, not global warming; the use of the term "climate change" herein is not synonymous with global warming.

risks and best describe what they are experiencing. By examining the links between climate change and development, we can learn how climate change responses might be better integrated into emerging sustainable development strategies, especially through the adoption of new subsistence and livelihood strategies. Sustainable development can make society more resilient to climate stresses and increase its ability to respond to climate impacts (Engle 2009).

The most commonly cited definition of sustainable development is that provided by the Brundtland Report: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987:43). This definition is not without its problems, but it is generally agreed that sustainable development entails development that is socially, economically, and ecologically sustainable. The report stressed the priority of meeting basic human needs, especially those of the poor. In the years since the report was published, more social considerations have been brought to the fore, and so the concept frequently entails a focus on human and ecosystem longevity and well-being together. Munasinghe (2001) defines sustainable development as "a process for improving the range of opportunities that will enable individual human beings and communities to meet their needs, as well as to achieve their aspirations and full potential, over a sustained period of time." Issues relevant to sustainable development include ecology, economy, social organization, time, scale, and appropriate technology (Keese 2001:4).

Although a sometimes vague and overused term, sustainability can be used as a conceptual basis for integrating the natural and social sciences. The natural sciences are certainly important for assessing the biological and ecological factors surrounding sustainability. However, the analysis of sustainability includes not only these factors but social ones as well: How to improve human societies and economies in order to maximize the human good obtained

with the minimum ecological footprint, and how to move discussions of economics and policy from a focus on the present to one that includes the future and human well-being. In essence, not only does it refer to more than both renewable and nonrenewable natural resources, it involves a rebalancing of social and economic priorities. As stated by Paehlke (2005:38), "A growing concern with sustainability is really about learning, in an integrated way, how to anticipate and avoid or ameliorate many of the risks we continuously pose to ourselves and to nature and to judge our economic initiatives and societal structures broadly rather than narrowly in the long term rather than the short." This dissertation reconsiders and reframes development in terms of contemporary social and ecological concerns, and therefore has theoretical as well as policy relevance.

0.2 THE SOCIOCULTURAL AND GEOGRAPHICAL SETTING

Most of the population of the Vilcabamba valley is comprised of *mestizos*, people of mixed Spanish and indigenous background. I find that valley residents identify strongly with *mestizo* and Iberian culture rather than with indigenous culture; this conclusion has also been drawn by Anthony Abbott, a geographer who has also carried out fieldwork in the area (2005; 2002). Reasons for this likely include the fact that there are relatively few indigenous people living in this area in comparison to other parts of Ecuador, and therefore no indigenous activism; the long period of Spanish presence within the province; and the fact that many Lojanos (people from the province of Loja) have migrated to Spain.

According to the Census of 2001, the total population of the parish of Vilcabamba was 4,164, with 1,715 of those people living in and around the town (Instituto Nacional de Estadística

y Censos 2005). The Census of 2010 shows that the population of Vilcabamba is now 4,778. A group of approximately 200 indigenous Saraguros from the northern part of Loja province live in the neighborhoods of Uruche and Mollepamba, each located about two miles from the town of Vilcabamba.[3] According to Linda and Jim Belote (Belote and Belote 1999), the Saraguros began to go to the Vilcabamba area in the 1960s in search of rural wage labor. Most of them now own and work their own land to the south and east of the town of Vilcabamba.

Agriculture and livestock continue to be the basis of livelihood for about 75% of the valley's residents, with most of the remainder working in tourism and the related service industry (Aird, et al. 2005). This is one reason that the climate changes occurring in the valley are of great consequence: Those who work with the land have a closer connection to it, and any changes that occur impact their lives in significant ways. Of course, climate change may also affect the tourism industry, but not to the extent that it affects agriculture.

The valley of Vilcabamba is located in southern Ecuador (see Figure 1 below), at an altitude of approximately 1,500 m (5,000 ft.), 4°S of the Equator (-4.25° latitude, -79.25° longitude). The area is located 42 km (26 mi.) due south of the city of Loja, the capital of the province of the same name, and of the canton in which Vilcabamba is located. The city of Loja, situated at a higher elevation, at 2,200 m (7,220 ft.), was founded in 1548 as the seventh Spanish colony in South America and the fourth city in Ecuador (Gallardo Moscoso 1991; Jaramillo Alvarado 2002).

[3] Vilcabamba contains a total of 15 neighborhoods: Two urban and 13 rural (Instituto Nacional de Estadística y Censos 2008).

Figure 1. Location of Vilcabamba.

0.2.1 The History of the Area

The town of Vilcabamba was originally established and inhabited by the Huilcopamba Indians, part of the Malacatos ethnic group, which was in turn one of the territories of the Palta confederation (see Figure 2 below) (Caillavet 1996; Perez T. 1984; Ramón Valarezo 1994; Toledo Cocíos 2000). During the period of Integration (ca. 500 to 1460 A.D.) and well into the Inca Period (ca. 1460 to 1534 A.D.), the Paltas consisted of a number of independent ethnic groups, although the details of their identity and the limits of their territory are not well understood (Caillavet 1996; Ogburn 2004). Caillavet (1996) states that it is possible that the Paltas fought amongst each other except for when they banded together to fight the Inca and then

the Spanish. According to ethnohistorical research, both the Inca and the Spanish considered the Paltas aggressive, hostile, and difficult to conquer; for example, the Incan conquest of the province of Loja actually took place from the north rather than from the south, as one would expect, because of this resistance and because the rough terrain allowed the indigenous people to take refuge in hidden strongholds from which they fought the Inca (Caillavet 1996; Toledo Cocíos 2000). The Inca reign ended in approximately 1532, and the Spanish began to colonize the area in 1546 (Caillavet 1996).

Figure 2. Ethnic groups of the south of Ecuador. The region of the Paltas is located within the circular dotted line, and the area of the Malacatos is situated in the southeast corner of this territory. Cangochamba (La Zarza) is considered the first foundation of the city of Loja, which was later moved to Cuxibamba (under the Inca), and later called Loja by the Spanish. Source: Caillavet 1996.

According to Toledo Cocíos (2000), the Huilcopambas first settled on the slopes of the eastern side of Mandango (discussed in the next section). This is also considered to be the first settlement of Vilcabamba, called "El Tablazo Grande" (The Grand Stage) or "Pueblo Viejo" (Old Town). It is believed that the Huilcopambas settled here because it afforded a good view of the surrounding territory. Due to the lack of water in this first location, the strong winds, and the attacks of the Inca, the village was moved to the confluence of the Chamba and Uchima rivers, called the "Plaza Vieja" (Old Plaza), where they had a better distribution of the town and were able to build a large temple. However, the location was very humid, boggy, and unhealthy, and the inhabitants began to suffer from malaria and rheumatism. In addition, the church burned, and a lot of important documents were lost in this fire (Toledo Cocíos 2000).

After the Spanish Captain Alonso de Mercadillo founded the colonial city of Loja in 1548, towns were established to the southeast, southwest, and south of Loja, and Mercadillo initiated the distribution of lands and Indians among the conquistadors. The first *encomendero* (Spanish colonist granted control of land and Indians to work for him) in the area of Huilcopamba, Captain Pedro de León and his first *cacique* (chief or political boss) Antonio Olivos, were in charge of the Indians of Cacanama (today Cucanamá, located directly above the word "Vilcabamba" on the map in Figure 9).

Later, in 1576, Captain Hernando de la Vega arrived as the encomendero of the other lands of Huilcopamba (Anda Aguierre 1993), which became the hacienda "El Atillo." De la Vega donated an area roughly the size of 19 blocks in order to found the third settlement of Vilcabamba on September 1, 1576. After this founding, the town had to endure a long drought during which the Chamba river dried up; in addition, there was an earthquake that for the second time destroyed the church (according to the widow of Cap. Hernando de la Vega, Doña Micaela

del Castillo) (Anda Aguierre 1993; Toledo Cocíos 2000). Toledo Cocíos lists the families who founded Vilcabamba as Toledo, Aldean, and Peñarreta, and immigrant families as Carpio, Cocíos, Ortega, Roa, Larréategui, Macanchy, Moreno, Burneo, Bejarano, and Ruilova (2000). Figure 3 shows a current picture of the Catholic Church in Vilcabamba.

Figure 3. The Catholic Church in Vilcabamba

0.2.2 The "Valley of Longevity"

The toponyms Huilcopamba and Vilcabamba are each made up of two Quichua words. Quichua is the Ecuadorian dialect of Quechua, the language spoken by the Inca.

Huilcopamba:

huilco or *wilco* – timber-yielding, durable, sacred medicinal tree from the area

pamba – plain or valley

→ Valley of the Huilcos or Sacred Valley

Vilcabamba

vilca – *curandero*, shaman, or folk healer

pamba – plain or valley

→ Valley of Health or Longevity

The *huilco* tree (also spelled *wilco*, from the *Mimosaceae* family, *Anadenanthera colubrina*), which also grows in other valleys and plains in South America, was considered a sacred tree by the indigenous Paltas, and later by the Incas. Wood from the tree was useful for house building, and its tannins and mordants were used in tanneries. The tree also contains psychotropic properties; a report from 1571 says that the Inca utilized the medicinal properties of the tree to revive their sick, and in 1801 Alexander von Humboldt was among the first to report that it also contains hallucinogenic properties (Carrión 2005). *Vilcas* or *curanderos* had been sent to Huilcopamba to attend the Inca imperial nobles who came there to recuperate; this may be why Vilcabamba was not destroyed like other settlements were (Anda Aguierre 1993; Gallardo Moscoso 1991; Jaramillo Alvarado 2002). In addition, in prehispanic times in Ecuador the seeds of the *huilco* were used in trade between the indigenous people of the Sierra and those of the Coast, with whom they traded salt for these seeds (Carrión 2005).

It is also of note that the cinchona tree (*Cinchona officinalis*), whose bark produces quinine, was discovered in Loja province as a malaria remedy by the year 1600. From the 17th century onward, the value of the tree for producing quinine was gradually recognized elsewhere in the world, which resulted in the mass export of cinchona from Loja in the late 1700s and the first half of 1800s (Mora de Valdivieso 2002)

Another possible reason that the valley was considered sacred may be the famed Mandango, a rock formation that tops the mountain to the west of town and resembles a face looking skyward; this is particularly evident when viewing it from the north (see Figure 4 below). A variety of local legends are associated with this rock formation. It is true that many valleys are surrounded by mountains that are considered to be sacred; in fact, in Bolivia and Peru there are other places that have been named Vilcabamba.

Figure 4. Mandango

The valley is also known as the Valley of Longevity. Starting in 1954, reports in popular news outlets began to appear that discussed the health and longevity of the valley's inhabitants.[4] In 1973, an article was published in *National Geographic* about the three places on earth where people live very long lives: Abkhazia, Russia; Hunza, Northern Kashmir; and Vilcabamba, Ecuador (Leaf and Launois). The valley began to receive even more attention from scientists, medical doctors, and journalists (e.g., Davies 1973; Davies 1975; Halsell 1976; Vela Chiriboga and Alarcon de Vela 1989). Reports abounded of the many individuals who went there and were able to significantly improve or to recover from various illnesses, including rheumatoid arthritis

[4] e.g., *Islands of Immunity*, by Dr. Eugene H. Payne, Reader's Digest, November 1954; *That Certain Thing about Loja,* Dr. Albert Krammer, Prevention, June 6, 1959.

and heart ailments. Vilcabamba was first discussed the *South American Handbook* for travelers in 1986.

Other people went to the valley because of Johnny Lovewisdom (1919-2000) who moved to Ecuador in the 1940s, looking for a place to live a religious life. Lovewisdom, originally from the U.S., had moved to Vilcabamba in 1962 after living near Quilotoa crater lake. He was very interested in science, philosophy, and theology, and helped to forge the New Age movement. Known as the Hermit Saint of the Andes, and also a pioneer of the fruitarian and raw foods movements, Johnny Lovewisdom was the founder of the Pristine Order of Paradisian Perfection and the author of over 50 books, including *The Buddhist Essene Gospel of Jesus: Unveiling the Gospel's Divine Mysteries* (Lovewisdom 2004), translated from the Palestinian Syriac Aramaic language to English.

Some of those who went to Vilcabamba never left, and now it is estimated that there are approximately 300 foreigners living there. According to Vivanco Hidalgo (2000), there were only 64 *extranjeros* (foreigners) living in Vilcabamba in 1998. These immigrants have come from New Zealand, the United States, Mexico, Canada, Italy, Belgium, England, Sweden, Austria, Germany, Spain, France, Africa, and other countries in South America, including Peru, Argentina, Chile, Colombia and Uruguay. Some individuals initially visit Vilcabamba as tourists and return as immigrants. The valley continues to draw both tourists and immigrants because of its fame, climate, tranquility, the beauty of the landscape, health benefits, and what some consider its mystical qualities (see Figure 5 for a photograph of the valley).

Figure 5. The Vilcabamba Valley during the winter (*invierno*, or the rainy season) (Photo courtesy of Farzad Farhadi).

0.2.3 Climate

The climate in the valley is temperate subtropical, with average temperatures between 60.8 to 75°F (18 to 24º C) in the recent past (Vivanco Hidalgo 2000); Maldonado et al. (2005) cites the average temperature as 20.3° C (68.5° F). During my period of major fieldwork in 2006-2007, however, there were many days with temperatures in the 80s (27°C+) and 90s (32°C+) with nights in the 60s (15°C+). Many have said that the climate is perfect because there is no need for heat or air conditioning, although during my fieldwork many people complained of the heat

during the hottest days, and people actually tired of the constant bright sun when the time for the rainy season to start was long past.

The vegetation that originally covered most of the valley floor and lower slopes was likely tropical dry forest (pre-montane and low montane), which existed in Vilcabamba because of the overall aridity of the valley and the marked dry season (Aird, et al. 2005; Organization of American States 1994). Dry forests are considered among the most endangered ecosystems in the world today (Pearsall 2004). In the province of Loja, it is estimated that well under 10% of the land retains its original vegetation and associated fauna (Aird, et al. 2005:14). In fact, the entire province of Loja has been severely deforested, with many abandoned, degraded lands now mostly covered with dry, deciduous scrub (especially acacia or *faique,* from the *Mimosaceae* family, *Acacia macracantha*) (Aird, et al. 2005; Colby and Keating 1998; Fundación Natura 1992; Wunder 2000).

Most of the valley's average 500-750 mm (19.7-29.5 in.) of annual rainfall (Gómez E. 2004) falls in the months of December through April, which is winter (*invierno*) or the rainy season. Other sources cite less rainfall, e.g., Vivanco Hidalgo (2000) cites an average rainfall of less than 500 mm; this would seem consistent with the generally-agreed-upon gradual trend toward less precipitation. In addition, Ruilova and Zaruma (1982:90) state that there has been a slow and gradual but sustained reduction in the amount of rainfall from west to east in the province of Loja. In 1984, Perez stated that, according to more than 10 years of observation (although he did not state which years!), Vilcabamba experienced a very rainy year in 1976 (an El Niño year), with 1,199.9 mm of rain all together, which was 131.3% of the normal amount. In contrast, 1978 was a very dry year, with 504.6 mm of rain, 55.4% of the usual amount during the years of observation. At times, these rains can be quite heavy. *Invierno* may start with

infrequent rains in October or November, with most of the rain falling January through March. The rest of the year constitutes summer (*verano*), or the dry season. In the past, the year was divided in half by the two seasons; now, most people say that about two-thirds of the year is dry and one-third is wet. It should be noted, however, that rain sometimes falls in the summer, and in the winter there are days or even stretches of days with clear skies and no rainfall.[5] Vilcabamba has about 200 sunny, rainless days per year (Aird, et al. 2005); even during the rainy season, the mornings are warm and sunny, with the rain arriving in the afternoon or at night. This makes for a rather unique, and some consider "perfect", climate; other valleys in the Andes at similar elevations are cloud-covered most of the time due to moist air masses being carried inland on easterly winds from the coast. However, the air that blows across the Vilcabamba valley is relatively dry because the coastal plain of northwest Peru is very arid (Aird, et al. 2005) (see Table 1 for temperature and humidity information). Figure 6 displays monthly rainfall data (in mm) averaged over 9 years (2000-2008) for vicinities near to Vilcabamba (these locations can be viewed in Figure 9).

[5] On average, the monthly rainfall in February is around 140 mm (5.5 in.), while in August the rainfall amount averages 15 mm (0.6 in.) (Aird, et al. 2005).

Table 1. Temperature and humidity[6]

	Minimum	Average	Maximum
Absolute Minimum Temperature	6.2°C (43.2°F)	11.1°C (52°F)	14.2°C (57.6°F)
Average Temperature	18.7°C (65.7°F)	20.8°C (69.4°F)	22.5°C (72.5°F)
Absolute Maximum Temperature	28.8°C (83.8°F)	31.5°C (88.7°F)	35.5°C (95.9°F)
Humidity	53%	79%	94%

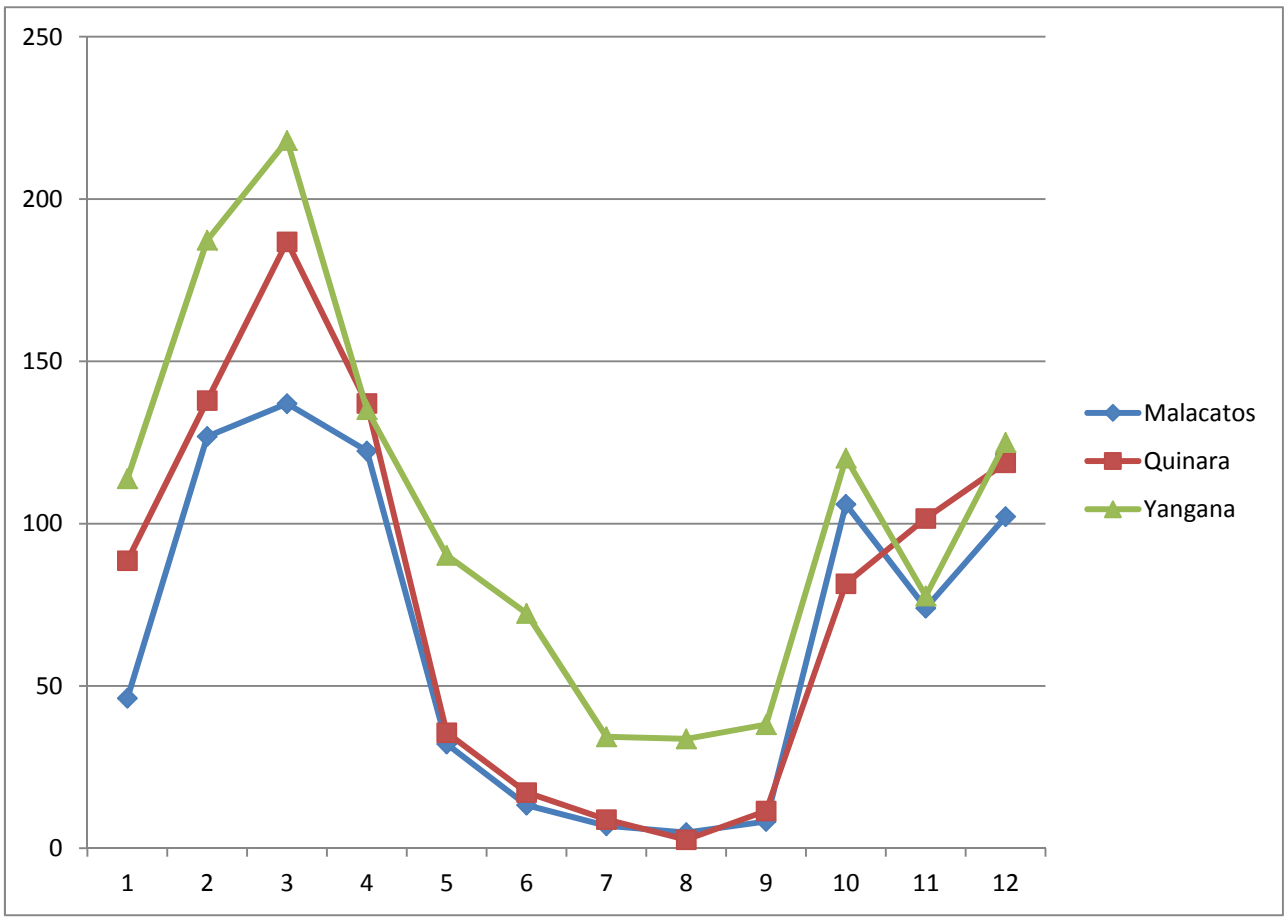

Figure 6. Monthly rainfall data (mm) averaged over 9 years (2000-2008) for vicinities near to Vilcabamba (these locations can be viewed in Figure 7; Yangana is closer to PNP and therefore receives more rainfall). Source: INAMHI (www.inamhi.gov.ec). Readings for Vilcabamba not available.

[6] These figures are provided by INAMHI (2007); however, these are data from 1990-2000, and the data for the absolute minimum and maximum temperatures were sparse after 1993.

0.2.4 The Valley's Position in the Andes

In Ecuador, the Andes consist of three divisions running north to south: the *Cordillera Occidental* (located to the west, nearest the coast), the Intercordilleran Depression, and the *Cordillera Oriental* (or *Cordillera Real*, closest to the Amazon basin). The region of southern Ecuador-northern Peru is the lowest part of the Andes near the equator, and contains landscapes and characteristics different than the rest of the country. In addition, the Andes in southern Ecuador are not as clearly divided into distinct western and eastern cordilleras, and the highest ridges and peaks rarely exceed 4,000 m (13,123 ft.) (Neill 1999; Ruilova A. and Zaruma de F. 1982). For these reasons, it has been suggested that the area of northern Peru and southern Ecuador be referred to as *los Andes bajos* (the low or short Andes) (Gondard 2004; Universidad Nacional de Loja 2004). Here the Andes consist of a more complex and irregular pattern of ridges, some trending north-south and some east-west; this area constitutes the last segment of the easternmost range of the Andes (the *Cordillera Oriental*). Dr. Pierre Gondard, director of the *Instituto de Investigación para el Desarrollo* (IRD, Institute of Investigation for Development), a French organization in Ecuador, describes it this way:

> On the Ecuadorian side, however, these lower Andes open up like distinct branches and this leads to – first, at the level of vegetation and of plant landscapes, and then, of course, in the use of the soil – a complexity that is not found in the rest of the Ecuadorian Andes. This was a great challenge… The first time that travelled the province I ended up dizzy. I had to take a look at topographic maps in order to know where I was. One finds their self a little lost here, in so many valleys and extensions… This challenge was what gave me the most pleasure… (Gondard 2004:88, my translation).

As a result of the east-west passes and the relatively low height of the Andes in this area, trade winds and other climatic features and flora and fauna are able to pass through the area from the Amazon basin to the Pacific coast and vice-versa. Additionally, it is a region of transition

between the humid mountain forests of the northern Andes and the dry, deciduous forests of the northern Peruvian lowlands. This border region of Ecuador and Peru is one of the earth's most biologically diverse areas and contains a large number of varied microclimates (Bussmann 2002; Bussmann, et al. 2002).

0.2.5 Drought and Desertification

Unfortunately, desertification is approaching from the southwest (Casas-Castañeda and Matallo 2000; Ruilova A. and Zaruma de F. 1982). In a study of the extent and significance of soil erosion in southern Ecuador, Hagedorn (2001) states that "The highest material losses were recorded in the inner-Andean semi-arid basin of Vilcabamba" and that "soil erosion is particularly manifest in dry regions, and under the savannah conditions in the extreme south-west of Ecuador can even lead to the development of badlands or to desertification." The results of a study performed by the Organization of American States in order to manage the water resources of Loja declare that "The most unusual climate feature in Loja province, which distinguishes it from the rest of the country, is the abrupt and chaotic relief and the process of desertification which is advancing from the south" (1994:xxx). This is believed to be caused by a complex interaction of human and natural activity (Dillehay and Kolata 2004). Human activities that have exacerbated the problem include deforestation, fires and various unsustainable farming methods (Aird, et al. 2005; Bussmann 2002; Jørgenson and León-Yánez 1999; Preston and Preston 1996; Valarezo García 1987). Erosion, which here results from a combination of soft and fragile substrate, steep slopes, dry climate, heavy rains and the human activities mentioned above, also contributes to the problem of desertification. This is compounded by the fact that the Andes are a young mountain chain, and therefore levels of erosion are naturally high. According to the

Universidad Nacional de Loja (National University of Loja), almost 80% of Loja province is seriously eroded and suffers heavy losses of flora and fauna (Casas-Castañeda and Matallo 2000); Perez (1984) states that Loja is without doubt one of the areas of Ecuador most affected by erosion. In addition, deforestation, heavy grazing and burning have reduced the water-retaining ability of the soils that remain; these soils are also sterile[7] in many areas, in part because of the overuse of agrochemicals.[8]

When land is stripped of its vegetation (primarily by humans in order to cultivate crops or raise cattle), erosion and desertification ensues. This, in turn, reduces the quality and quantity of water that can be produced. In addition, water absorption is reduced, not only because there is less vegetation to absorb it, but the denuded hillsides, lacking both vegetation and topsoil, cause water to immediately run off the surface, precipitating further erosion as well as sudden and unpredictable flooding (a.k.a. flash flooding). Thus, it is a vicious cycle. In 1994, 42% of Loja province was determined to be severely eroded, including Vilcabamba (where erosion is classified as "severe to very severe"); human activity is cited as the primary cause (Organization of American States 1994). An important factor in regard to human land-use patterns in this area is the fact that most *minifundios* – smallholdings of land under 5 hectares (12.35 acres) – are located on the mountainous slopes, and are important sources of subsistence for their owners; therefore, they are constantly under cultivation. Eighty-six percent of the area of Loja province is hilly and mountainous, with slopes greater than 16˚ (Organization of American States 1994). In actuality, the only lands suited to agriculture in this area are the small valleys (Valarezo

[7] Sterile soil does not contain any organic material, including the micronutrients and organisms that it needs in order to produce.

[8] Agrochemical is a generic term for the various chemical products used in agriculture, and refers to a broad range of pesticides, insecticides, herbicides, and fungicides, as well as synthetic fertilizers, hormones, and other chemical growth agents (Wikipedia). At times the term "pesticide" is used to refer to the variety of agrochemicals; in this dissertation the terms will be used interchangeably.

García 1987). However, this is where most of the larger landholdings are located, and in most cases these landowners cultivate a smaller proportion of these larger farms.

The deficiency of water is one of the most critical problems faced by Loja province, including the valley of Vilcabamba (Apolo B. 1984; Lynch 2001; Organization of American States 1994; Valarezo García 1987). Deforestation exacerbates this problem. The tropical montane forests located in the study area are important water catchments and erosion barriers, and are therefore of great economic and ecological importance (Bussmann 2002). Rainfall is captured by the trees, from which it is precipitated down into aquifers; without the trees, water instead runs off the mountains and thus contributes not only to water deficiency but to erosion as well. Unlike most Andean watersheds (drainage areas), in this area underground springs are replenished by rainwater filtered directly through the forest floor. According to Aird et al., "Though data for scientific analysis are lacking, there is anecdotal evidence that recent forest destruction in rain catchment areas throughout Loja province has seriously reduced both the quantity and the quality of water supplies" (2005:13).

This is where the importance of Podocarpus National Park [PNP] becomes apparent. Established in 1982, the park, which is located to the east of the Vilcabamba valley, consists of 146,200 ha (361,452 acres) extending from the Andes to the Amazon basin (Bussmann, et al. 2002). It contains a portion of the Cordillera Real, *páramo* (high plateau), a series of small Andean lakes, cloud forests, and lowland Amazon rain forest. The cloud forest, especially, is important for water storage and for soil conservation (Lynch 2001). Colby and Keating (1998) have reported that the highlands of PNP receive over 4,000 mm (157.48 in.) of rainfall yearly, which falls on slopes averaging 40˚ to 60˚ (Bussmann, et al. 2002). There are more than 100 small Andean lakes left in glacial depressions within PNP, fed and drained by waterfalls and

streams. The park is critical for watershed management, as four separate watersheds depend on Podocarpus for their moisture and provide water to Ecuador's southernmost region. A primary focus of local stakeholders and government entities is to ensure a permanent and sufficient water supply.

0.2.6 Social and Developmental Milieu of Southern Ecuador

0.2.6.1 Migration

As just discussed, the area has been prone to drought over the years (see also Almeida Durán and Centro Interamericano de Artesanías y Artes Populares 1999; Alvarado Soto, et al. 2003; Casas-Castañeda and Matallo 2000; Lowder 1990; Wunder 2000). Many Lojanos emigrated during a severe drought that began in the late 1920s; so many moved to Lago Agrio[9] that it now carries the name Nueva Loja (New Loja). Toledo Cocíos (2000) states that many people moved to the gold mines of Portovelo, near Zaruma in El Oro province, between 1925 and 1942. After the drought that began in 1967 – one of the worst of the century – 164,183 people (43% of the population) migrated from Loja province (Organization of American States 1994), bound chiefly for Nueva Loja and Santo Domingo de los Colorados (now called Santo Domingo de los Tsáchilas).[10] Many Lojanos have also emigrated to international destinations, especially to Spain (Jokisch and Pribilsky 2002). According to Ecuador's National Institute of Statistics and Census, 6.8% of Ecuador's population resided in Loja province in 1950; this

[9] Lago Agrio means Sour Lake. Lago Agrio/Nueva Loja is an oil town; the name Lago Agrio results from the devastating effects of oil exploration in the area.

[10] Other destinations include Arenillas, Zamora, La Concordia, La Unión, Nambija, Guayaquil, and Quito, as well as international locales (Almeida Durán and Centro Interamericano de Artesanías y Artes Populares 1999; Toledo Cocíos 2000).

number has steadily declined toward the present, in which only 3.3% of Ecuador's population resides in the province of Loja (Instituto Nacional de Estadística y Censos 2001). This population decline has been attributed to the loss of soil productivity, the lack of adequate water resources (including drought), the lack of development initiatives in the region, and the economic problems of the country (Almeida Durán and Centro Interamericano de Artesanías y Artes Populares 1999; Alvarado Soto, et al. 2003; Annessi 2002; Jokisch 2004; Lynch 2001; Pietri-Levy 1993).

In addition, large-scale rural-to-urban migration has served to accentuate the difference between rural and urban spaces, adding to the not only perceived but real isolation of many rural areas. As in other countries where neoliberal policies were implemented in the mid-to-late 20th century, in Ecuador much of the developmental funds and attention were directed toward the cities; it was expected that the advantages would trickle down to the rural areas. In the article *Development Policy an d its Effect on Regional Inequality: The Case of Ecuador*, Lowder (1990:90) states that in Ecuador, "development policies…resulted in a superficial modernity that favoured the few in key locations at the expense of the majority," and that "per capita state capital investment in modern urban activities was 11.3 times greater than in the rural, traditional sector in the early 1970s and was still nearly 4 times as great at the end of it." As a result of this and of land degradation, people migrated temporarily or permanently to urban areas in search of jobs (Castillo Vivanco 2001).

0.2.6.2 Loja Province and Southern Ecuador

It is hoped that new livelihoods and development strategies in the south of Ecuador will forestall this outmigration, as stated by Annessi (2002) and various people with whom I spoke during my research. One major problem repeatedly referred to by my informants and in various

written sources is the isolation and neglect of southern Ecuador (e.g., Almeida Durán and Centro Interamericano de Artesanías y Artes Populares 1999; Annessi 2002; Guerrero Carrión 2002; Jaramillo Alvarado 2002; Lowder 1990; Perez T. 1984; Pietri-Levy 1993; Valarezo García 1987). This is due partly to its geographical isolation from the poles of power, which are the three major cities: Quito, Guayaquil and Cuenca. Cuenca, Ecuador's third largest city, is often considered to be in the south of Ecuador, but one only needs to look closely at a map or venture further south into Ecuador to realize that there is a lot of varied space, territory, towns, and cities between Cuenca and the border with Peru. Three entire Ecuadorian provinces lie below the province of Azuay, in which Cuenca is located: El Oro, Loja and Zamora-Chinchipe (see Figure 7). Loja itself has a surface area of 11,600 km² (4,479 mi²) measured planimetrically (not accounting for topography) and the three provinces combined cover 33,000 km² (12,741 mi²).

Figure 7. Map of Ecuador demonstrating the location of El Oro, Loja, and Zamora-Chinchipe provinces in the south.[11]

[11] Map credit: Instituto Geográfico Militar of Ecuador. Bold lines added via Adobe Photoshop.

In reality, the isolation of an area can either cause it to have an insignificant economic role or enhance its degree of local autonomy (Lowder 1990). Although the effect in Loja has largely been the former, the isolation has in fact caused both of these contradictory processes to occur: Loja declared its independence in 1859 during a civil war, in part predicated on the invasion of Ecuador by Peru; this federalist movement, constituted by Loja, El Oro, and Zamora[12] and referred to as the Federal Government of Loja, lasted until 1861 (Castillo Vivanco 2001; Jaramillo Alvarado 2002; Pineo 2007).[13] Castillo Vivanco states that Loja continues to function like a "federation of cantons" because of the mountainous geography, difficulties of transport, and great distances between the cantons, and therefore each canton maintains its own characteristics and idiosyncrasies (2001). Consequently, not only has Loja not been integrated well into the nation-state, but local integration has also been slow to occur. As we shall see, these factors have socioeconomic and developmental implications for the region.

Lojanos' sense of pride in their province is reflected in the saying displayed on the back of the *Loja Internacional* buses: "*Si Ud. nunca ha ido a Loja…no conoce a mi País*" (If you have never went to Loja, you don't know my country). Loja is also proudly known as the Music Capital of Ecuador and the Garden of Ecuador, and is home to two major universities, the *Universidad Nacional de Loja* (the National University of Loja) and the *Universidad Técnica Particular de Loja* (the Private Technical University of Loja).

Development in southern Ecuador has also been slowed, and its isolation intensified, by a 150-year boundary dispute with Peru.[14] In 1941, at the beginning of World War II, Peru invaded

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[12] Zamora province is now known as Zamora-Chinchipe.

[13] In colonial times the Government of Yaguarzongo, with its nucleus in Loja, had formed in this same area (Caillavet 1996; Castillo Vivanco 2001).

[14] Vickers states that "In 1828-1829, 1904, 1941, 1981, and 1995 the fighting was of sufficient scope and intensity to be called 'war,' though neither nation made formal declarations of war against the

Ecuador, claimed half of the *Oriente* (the Amazon region), and retained that land in the Treaty of Río de Janeiro in 1942. After conflicts in 1985 in the Battle of Paquisha and in 1995 at Tiwintza in the upper Cenepa River valley, Ecuador was able to regain one square kilometer of this territory through the Acta de Brasilia of 1998 (Whitten 2003). Since then, relations between the two countries have become more stable; trade has increased; and the number of military forces along the 1000-mile border between the two countries has been reduced.

The following translation of portions of a story from Loja (Pacheco Ochoa 1990) will help to expound upon and reinforce the historical and ethnographic background to the present study (each paragraph is followed by its English translation):

Cuando las lluvias se fueron: Cuento Lojanísimo
When the rains left: A story very characteristic of Loja

Mucho tiempo no había llovido en la región. Los ríos se fueron secando, lentamente. Los peces que en ellos había por millares de millares, también desaparecieron. Los campos no producían nada para comer, como antes llenaban el corno de la abundancia. Las aves, también emigraron buscando otras campiñas para vivir y para revolotear.

It had not rained in the region for a long time. The rivers were slowly drying up. The fish that had swum by the thousands in these rivers also disappeared. The fields were not producing, when before the supply was endless. The birds left, too, to look for other places to live and fly around.

Las gentes asustadas de tanta calamidad, recordaban a manera de historia y de tradición que, hacía algunos años atrás, habíase visto pasar por el cielo de un valle comarcano, una gigantesca bola de fuego que con su kilométrica cola había pasado quemando los campos y sembríos. Tal vez sería el paso del Cometa Halley, dijeron los entendidos; o tal vez, el paso del Judío Errante, suponían los fanáticos piadosos.

The people worried about the disaster remembered through history and tradition that some years ago they had seen a gigantic ball of fire with its kilometer-long tail pass through the sky of an adjacent valley, burning the fields and plants. Perhaps it was the passing of Halley's Comet, said some, or else the Wandering Jew, suggested the religious ones**.**

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other" (2003:64). Gerlach states that "Violence broke out in 1978, 1981, 1983, and again in 1994, leaving several hundred dead" (2003:126).

Lo cierto era que, la llamada Gran Sequía, en esta vez, era mucho peor que el caballo del bárbaro Atila, después de cuyo paso: "jamás creció la yerba."

The fact is, the so-called Great Drought was much worse than the horse of Attila the Hun, after whose passage nothing ever grew again.

Sucedió, entonces, que: las gentes no teniendo trabajo; no teniendo qué comer; viendo agotados sus recursos para el sustento diario; y antes de ser víctimas de las garras del infortunio y de las necesidades vitales, decidieron emigrar:

What happened then was that the people, not having work or anything to eat, seeing their resources for daily sustenance exhausted, and before falling victim to the clutches of misfortune and out of vital necessity, decided to emigrate:

Unos se marcharon atraídos por el boom bananero de la Costa; otros se fueron en busca de las tierras baldías, palúdicas, húmedas y malsanas donde gobernaba el brujo de los indios Colorados; otros, más corajudos se internaron por las selvas orientales, hasta que llegaron, justo, a donde había estado escondida, en el fondo abismal de la tierra, la sangre negra del diablo; y, otros comarcanos, decididos e igualmente laboriosos, se embarcaron hacia tierras extranjeras.

Some were attracted by the banana boom of the Coast; others left in search of land to cultivate, malaria-infested, humid, unhealthy lands governed by the witch of the Colorado Indians; those more courageous went deep into the eastern jungle, arriving at a point where there was hidden, in the abysmal depths of the earth, the black blood of the devil [oil]; and other compatriots, determined and equally hard-working, left for foreign lands.

Según los antiguos documentos, todos ellos partieron a fundar nuevas ciudades, a rendir culto al trabajo, a sembrar doradas esperanzas, a dar sentido a la vida, a cosechar honor y prosperidad consustanciales a la herencia congénita de sus antepasados.

According to old documents, they all left to found new cities, to work hard, to try to realize their dreams, to give meaning to life, to achieve honor and prosperity, the innate legacy of their ancestors.

Entonces, los campos y aldeas quedaron más tristes y abandonados que nunca. Toda la culpa, dijeron, la tenían las lluvias que no caían, que no refrescaban a los surcos sedientos de agua; culpa de las montañas que habían sido devastadas de sus gigantescos y milenarios árboles; en fin, por culpa de los montes y hontanares que fueron, sistemáticamente, quemados ante la indiferencia irresponsable de los sabios...

Afterwards, the fields and villages remained more sad and abandoned than ever. It was all due, they said, to the fact that the rains didn't fall, that they didn't refresh the thirsty gullies with water; because the mountains had been devastated by the removal of their giant and ancient trees; in the end, because the hills and mountains, from which the water comes, were systematically burned due to the irresponsible indifference of those who should know better…

...Tales eran los cuadros de la Gran Sequía, que jamás conmovieron a los corazones forasteros, sentados a la mesa del banquete burgués, coetáneo de aquellos pretéritos y angustiosos tiempos vividos.

…Such were the scenes of the Great Drought, which never touched the hearts of outsiders, seated at the table of their bourgeois banquet, at the same time that those anguishing times were occurring.

Cuadros de angustia que perdurarían por muchos años, en las delicadas retinas de los ojos que fueron fieles testigos del azote telúrico que golpeó duramente a todo un conglomerado humano, ejemplar y laborioso...

Scenes of anguish that lasted for many years, in the delicate retinas of the eyes of those who were loyal witnesses to the earthly disaster that harshly battered a whole conglomeration of people, exemplary and laborious…

...Apenas el sol canicular se ocultaba tras las montañas de la difusa lejanía tropical, y bajaban las sombras, el vientre misterioso de la noche, en danza macabra, se iluminaba con lenguas de fuego: Eran los incendios innumerables y continuos que, en toda la región provocaban, los ignaros montañeses, creyendo que rozando las alturas había de llover; o eran, la obra siniestra de los rústicos carboneros que, por siglos, han victimado la belleza inefable de la Natura; justificando este delito con la imperdonable cantaleta de que es "la única manera de subsistir"...

…The hot sun barely hid itself behind the mountains in the remote tropical distance, and the shadows fell, the mysterious womb of night, in macabre dance illuminated with tongues of fire: They were the innumerable and continual fires that throughout the region were started by the ignorant highlanders, believing that burning the hills would make it rain; or else they were the sinister work of the charcoal makers that, for centuries, had victimized the ineffable beauty of Nature, justifying this crime with the unpardonable chorus that it is “the only way to survive”…

...Si, valientes compatriotas, al azote de la Gran Sequía, a la cruel desventura del obligado Exodo, se han sumado la fiereza ancestral y absurda del regionalismo antipatria, y, como si aquello fuese poco, el fantasma voraz del centralismo. Esta es la tierra del "nuaynada". ¡Vivimos fritos y refritos! ¡Los dueños de la patria nos han olvidado!...

…Valiant compatriots, the calamity of the Great Drought, and the cruel misfortune of the forced exodus, joined the ancestral and absurd violence of regionalism and antipatriotism, and, as if that were not enough, the voracious specter of centralism. This is the land of “there is nothing”. We have been cheated and exploited! The owners of the country have forgotten us...

...Estando los campesinos, bien atentos, escuchando los discursos y proclamas enardecidas que en la plaza del pueblo se improvisaban, uno de los del tumulto, gritó: ¡Ya, carajo, basta de tanto lerelere!!! ¡Nada sacamos de eso! ¡Ni se come de sólo promesas demagógicas!

…The peasants, being attentive, listening to the impromptu and provocative discourses and proclamations in the plaza, one of those in the commotion yelled: Enough already of this talk! Nothing comes of this! And we don't eat on demagogic promises!

¡*Claro! contestó una señora. ¡Lo que queremos nosotras es tener qué poner en la olla! ¡Porque no hay nada de nada!*

Of course!, answered one woman. What we want is to have something to put in the pot! Because there is nothing of nothing!

¡Bien está! exclamó la acompañante. ¡Ahora, nadie quiere trabajar, como antes, con sacrificio y acrisolada honradez; ahora, todos quieren chauchita!

Well said!, exclaimed her companion. Now, no one wants to work like before, with sacrifice and integrity; now, everyone wants a handout!

¡Sipes! añadió una arrebatada proletaria. ¡Antes, teníamos: trigo para hacer harina; cebada para hacer máchica; arvejas para la mazamorra! ¡Los buenos cuyes! ¡La buena gallina! ¡Los buenos tamales! ¡Las buenas brevas! ¡Los buenos huevos! ¡Los buenos cocos! ¡La buena leche! ¡Los buenos bizcochuelos! ¡Ahora, todo eso se ha perdido, barajo!...

Well then! added an impassioned proletarian. Before we had wheat to make flour, barley to make *máchica*, peas for corn soup! The good *cuyes*, good chickens, good *tamales*, good figs, good eggs, good coconuts, good milk, good *bizcochuelos*! Now all of this is lost...

...Refiere la tradición que, esta pequeña y singular Patria Chica con su nobleza de espíritu, con la hidalguía y calificada preparación de sus hijos aportó, así, y sigue aportando para la estructuración de la Gran Patria de la Cultura ecuatoriana; de esa Gran Patria de la que siempre han hablado, con acento mesiánico, los más insignes de sus pro-hombres que, por fortuna, ha sido prolífica esta tierra.

…Tradition tells us that this small and unique homeland with its noble spirit, with generosity and skilled preparation of its sons has contributed, and continues to contribute to the organization of our great country and Ecuadorian culture, of this country of which they've always talked, with Messianic accent, the most distinguished of her citizens that, fortunately, has made this land prolific.

Patria que vive y palpita agradecida de este modesto pero valioso contingente mestizo y provinciano; cuya huella es ya indestructible y perdurable; y que, sin ser vanidosos, la ostenta como tatuaje luminiscente en el corazón mismo de la nacionalidad.

Homeland that lives and beats, grateful for this modest but valuable *mestizo* and provincial contingent, whose mark is still indestructible and lasting; and that, without being vain, is the sign like a luminescent tattoo on the very heart of the nationality.

Aquí termina el cuento, mejor dicho, un breve relato imaginario de lo acontecido hace muchos años. Pero también comienza la dulce esperanza de un pueblo que fuera

víctima de una pertinaz sequía y testigo de un largo exodo! ¡Pueblo hospitalario, noble, heroico, que: conservando por ancestro su idioma mestizo, dinámico, con acento diáfano e inconfundible; y, teniendo como alma el incomparable sentimiento musical y la poesía, por dentro y por fuera, jamás ha dejado de esperar, todos los días, con paciencia estoica y sublime, el regreso de las lluvias, el retorno del paisano, del amigo, de los hijos ausentes...

Here ends the story, rather, a brief imaginary account of what happened many years ago. But also begins the sweet hope of a people that were the victim of a prolonged drought and witness to a long exodus! Hospitable, noble, heroic people that, conserving for years their *mestizo* language, dynamic, with clear and unmistakable accent; and having like a soul the incomparable musical sentiment and poetry, on the inside and on the outside, never has ceased to hope, every day, with stoic and sublime patience, the return of the rains, the return of fellow countrymen, of friends, of the absent sons…

* * * * * * * * * * * *

This story touches upon a remarkable number of topics relevant to this dissertation, and which remain important to my informants to this day:

- drought
- production
- fire[15]
- deforestation[16]
- lack of work
- challenges of survival
- out-migration and its effects
- oil development
- centralism, regionalism
- isolation and neglect, perceived indifference of the government and those outside Loja
- *Lojano* pride
- people not wanting to work and/or wanting "handouts"
- nostalgia for times gone before

[15] Fire as precipitated by either drought or by human beings, the latter in the sense that fire is used as a (controversial) land-clearing strategy and forms part of the nexus of natural and anthropogenic factors that contribute to climate change.

[16] Deforestation is due to clearing land, logging, and fires.

0.3 PRELIMINARY PREPARATIONS AND FIELDWORK IN VILCABAMBA

Preliminary research and preparation for fieldwork were carried out during the summers of 2002-2004. During these periods, I learned much about the area and the people who live there. I began to do informal interviews and to develop relationships with individuals autochthonous to the area and with immigrants. Early on, I began to observe that people frequently talked about the weather and the climate, and that the topic was discussed among people of different backgrounds and interests. I later realized that there were three major groups of individuals residing there: Ecuadorians; expatriates of long standing in the community; and more recent immigrants. This latter group had begun to arrive in Vilcabamba during the real estate boom which began in the mid-1990s.

Many changes were taking place from one year to the next. Certainly, things seem to change fast everywhere, but the pace was even more accelerated in Vilcabamba. The climate, however, continued to be a focus of conversation, and I began to investigate why. Through all the changes that were taking place, and despite all of the social differences among people, the climate was something that they had in common, and talk of climate often branched off into other related topics, such as culture change and livelihood strategies. Thus, this was an ideal way to examine social dynamics, including the relationships between immigrants and Ecuadorians. As elaborated by Scoones (1998), livelihoods entail more than the satisfaction of basic needs through paying jobs. The livelihoods approach draws on ties beyond the household unit and requires consideration of social networks and institutions, human health and capabilities, knowledge and competences, and environmental resources and services (Roncoli, et al. 2009). It therefore goes beyond the idea of employment in the economic sense in order to consider other factors that are relevant to making a living.

Observations and field notes from this and other background research led to the following questions, which were used to guide my dissertation research:

1) What cultural and climate changes have taken place? How have the valley residents responded to them, and how have these factors affected their livelihood strategies?

2) What can we learn about the relationship between immigrants and autochthonous people through their conversations, and through written materials, interviews, and participant observation? What impacts does this relationship have on processes of development?

3) How do valley residents perceive climate change? In other words, how do they think the climate has changed, and why? What effects do these perceptions and beliefs have on their behavior, attitudes, and livelihoods?

The answers to these questions would not only be enlightening in terms of the present case study, but could have more general implications in terms of sustainable development, climate change, livelihoods, and globalization.

0.3.1 Methodology

With funding provided by the Institute of International Education (IIE) Fulbright, the main portion of my fieldwork was completed in 2006-2007. It began with general rapport-building, living in the community, and participant observation involving local people and organizations, during which I had many informal conversations with people. I also utilized relevant written materials, such as books, newspapers, and pamphlets. These activities helped me to gain a greater understanding of the distinctive elements of life and relationships in the valley and to further refine the research problem, understand its antecedents, and elaborate the various aspects that would be crucial to its investigation.

After two months in the field, I began to do unstructured interviews with individuals in order to fill in gaps in my knowledge. Eventually, with the help of native Spanish speakers, I developed and refined a set of questions that were used as an interview guide during semi-structured interviews, which I completed with 64 individuals who varied in age, place of birth, and livelihood (see Table 2 for basic data).

Table 2. Basic data on those formally interviewed

GENDER	*AGE*	*OCCUPATION*	
38 males	Under 25: 2	agronomists	farmers
26 females	25 to 35: 6	technicians	domestic workers
	36 to 45: 17	business owners	construction workers
	46 to 55: 19	taxi drivers	veterinarian
	56 to 65: 8	tour guides	village officials
	66 to 75: 8	students	administrators
	76 and up: 4	development workers	priest, teachers
		conservationists	healers
		artisans	

0.4 THE LAYOUT OF THE DISSERTATION

In first chapter of this dissertation, I outline the theoretical influences on my research, which include anthropological approaches to human-nature interactions, theories of development in Latin America, and the newer and frequently discussed concept of sustainable development. Chapter 2 discusses rural development in Ecuador and the political-economic and historical circumstances leading up to the current situation. Although some ethnographic data is presented in Chapter 2, more substantial amounts of this information are presented in Chapters 3 through 6, where I discuss the main findings of this dissertation research. The final three chapters consider my findings and conclusions and discuss the contributions of this project to theory, further research, and current debates about climate change and development. The text is followed by a glossary of pertinent terms.

1.0 THEORETICAL INFLUENCES

This research addresses the need for anthropological studies to focus more attention on contributing to mid-range theories rather than macro-level analyses or, at the other end of the spectrum, research activities that solely focus descriptions at the local level and sometimes offer insufficient explanations. In doing so, it answers the call of Vayda and others (e.g., Clammer 2000; McGuire 1997; Sheridan 1995; Vayda 1983, 1996, 2004) in not determining a priori what our explanations should be, which sometimes happens with unwieldy macro theories such as globalization that gloss over significant local variations. Local people everywhere are affected by a range of factors, including history, political-economic influences, sociocultural patterns, and ecology. Environmental problems, including human influences on land degradation and climate change, are the result of complex, long-term human-environment interactions, and researchers need to appreciate both the biophysical 'reality' of environmental change as well as numerous ways in which this may pose problems for different cultures or social groups (Batterbury, et al. 1997). I concur with Clammer (2000) that the frame in which development issues are usually posed is self-limiting, and instead have used a cultural and historical ecology framework based on ethnographic and historical research to address the issues that are pertinent to this study. Since it is generally agreed that humans are transforming nature, it is important to know how, and why. This, in turn, will inform us about the path to sustainable development.

The scientific constructions of changing climate often differ from people's perceptions, and if we are to reconcile the two or understand why humans act as they do, then we need to examine how both the biophysical and sociocultural aspects of climate are interwoven in the daily existence of individuals. Furthermore, the ways in which people perceive their natural environment are diverse; they change and vary according to different patterns of use and adaptation (Sælemyr 2004). Research that avoids facile explanations, such as blaming the farmer or condemning rich people in the North, has to take into account how dynamic social, ecological, technological, developmental, and other processes interact in different ways according to local settings. In the past it has all-too-frequently been assumed or asserted that "modernization" is the answer to people's problems, often arriving in the form of technological solutions and "expertise" that create further problems. Simple blueprints or technological fixes developed in one place do not necessarily work elsewhere and often create further problems – hence, the necessity of understanding resilience and (mal)adaptation in their cultural, economic, sociopolitical and ecological context.

1.1 ANTHROPOLOGICAL APPROACHES TO HUMAN-NATURE INTERACTIONS

1.1.1 Cultural Ecology

The framework of cultural ecology examines the importance of culture mediations in ecological processes. The approach acknowledges that culture is not merely an unimportant or irrelevant

social fact, nor is it simply an adaptive tool. Rather, culture is important both to development and to human-environment relations. The classic work of cultural ecologists has revealed the varieties of human adaptation to the environment and the importance of indigenous technical knowledge worldwide and through the ages. Their work has also challenged prevailing ideas about the suitability of modernist technical interventions in agriculture and the appropriateness of large scale interventions by the state or international agencies in rural areas, and has revealed the repercussions of the decline of traditional land use systems (Batterbury 2004). In regard to the present study, the environmental degradation in the area of study can be linked both to the patterns of development in the region as well as human relations with and use of the environment.

According to Kay Milton, "it is the combined understanding of the material impact of human populations on their environments (and vice versa), and of how people think and why they act as they do, that is seen as the proper goal of ecological anthropology" (Milton 1997:484). The terms cultural ecology and ecological anthropology are often used interchangeably, as they will be in this dissertation, although the theoretical focus is slightly different: The earlier cultural ecology used culture as its analytic unit,[17] while ecological anthropology focuses on a group of people and how they utilize culture as a means of adapting to their environment (Kottak 1999). Milton's definition combines earlier, more materialist explanations of human-nature relations with later work that also includes human "impacts" on their ecosystem as well as human thought processes and their relation to behavior, an approach that Rappaport advocated in his later work (Rappaport 1993, 1999; Wolf 1999).

[17] This focus on culture as an analytic unit implied a bounded entity or a closed system; thus, cultural ecology was criticized for not considering the influence of outside factors.

Many ecological anthropologists are known for their affinity for both natural and social sciences, and believe that humans are an integral part of, and have various effects on, their environments. In this way ecological anthropologists bridge the "Great Divide" between the scientists and humanists and between the natural and social sciences (Orlove 1980; Snow 1959). However, ecologists have been reluctant to take humans into account in their investigation of ecosystems. This partially accounts for the discord and lack of communication between natural and social scientists. In addition, policy makers have traditionally relied heavily on the biological and physical sciences to the exclusion of the social sciences, which has at times resulted in misguided or failed policy (see, e.g., Thompson 1993). This is finally beginning to change, since it has become important to consider human impacts on the environment and in relation to resource management (Berkes 2004; Hayashida 2005). As Kottak (1999:28) conveys, "One research and development role for today's ecological anthropologist is to assess the extent and nature of ecological awareness and activity in various groups and to harness parts of ethnoecological models to enhance environmental preservation and amelioration." These findings, in turn, will contribute to our understanding of sustainable development and will help us to refine our strategies in this area. The questions we ask today and the problems we face require holistic and interdisciplinary answers. It ought to be possible, especially considering that science and technology in themselves have not panned out well as answers to the world's problems.

1.1.2 Historical Ecology

Historical ecology has been variously defined as "the multiscalar and multitemporal study of the dynamic relations between people and the physical environment" (Marquardt 1994:204) and as

"that branch of ecology that focuses on the production of space (or "nature") and the activities, technologies, informing ideas and values, and social relations of that production, [and] intrinsically addresses the spatiotemporal and its relation to the social" (Biersack 1999:9). There is still a lot of debate over what exactly historical ecology is and how to define it (Balée 1998a, 1998b; Winterhalder 1994). A satisfactory definition may be the interdisciplinary study of how human societies and the environment interact and transform each other through time, important in this case because we are considering climate change and variability over time. By considering this perspective in the present research, the influential historical component is made explicit, where social and environmental history are intertwined and where culture plays a significant part in human-environment relationships.

The idea that humans affect the environment just as the environment affects humans is an important one. As Biersack states: "the relationship between humans and the environment is actually dialectical, for, in the course of reshaping nature, society gradually reshapes itself" (1999:9). Similarly, Headland has stated that "Historical ecologists emphasize not only that environments have a history but that the dichotomy between "natural" and human-influenced landscapes is a false one" (1997:5). In order to study the interactions of humans and their environments, it is necessary to break down the nature/society (or nature/culture or nature/human, etc.) dualism. This dichotomy and others date back to the Enlightenment philosophy of Newton and Descartes (Berkes, et al. 1998). Many anthropologists have since begun to look at different views of history and forms of social differentiation as antidotes to simple dichotomies such as traditional and modern, native and Western, etc..

The earlier view, in which humans were considered apart from nature and in which ecosystem processes were thought of as linear and in equilibria – and therefore predictable and

controllable – was closely related to the Age of Enlightenment ideal of "mastery over nature" (Berkes, et al. 1998:413). Sheridan expounds upon this:

> For most of human history, nature was a collection of forces to be propitiated and feared. Two centuries ago, however, the relationship began to change as Western industrial civilization harnessed steam, electricity, fossil fuels, and vaccines. People boasted about triumphing over nature as distances were collapsed and the terrifying threats of floods, drought, and pestilence were reduced. Today, we even contemplate the "End of Nature," confident of our ability to control natural forces and convert them into commodities. ...During the last decade and a half, that illusion of freedom from the natural has seeped into cultural anthropology as well. (1995:41-42)

The contemporary concerns of natural disasters, climate (and other environmental) change, and global warming, along with the problems of modernization and development, have brought these assumptions into question. It is now acknowledged that humans impact the environment in various ways, though to what extent and under what conditions is still under investigation and is a matter of sometimes heated debate. Therefore, humans should be considered as part of the ecosystem, not separate from it. Societies and ecosystems influence one another; however, these systems are regarded as interacting and autopoietic, not deterministic, and neither can be explained solely through this interaction (Haberl, et al. 2001). Both the social and natural sciences have begun to reassess the human-environment relationship; the disciplines involved include (but are not limited to) anthropology, geography, economics, geology, biology, ecology, and history.

In order for anthropology and other social sciences to be effective and relevant in the lives of human beings, it is important to engage issues that contribute to the understanding and betterment of the human condition, which is part of the intent of this dissertation. This was also the crux of a special issue of *Futures* entitled “What Futures for Social Science?” In this edition, Lee asserts that the social sciences are suffering from a crisis of credibility partly of their own

making, and that this has translated to a lack of influence in the area of policy (2003). Although the internal and external critique and deconstruction that anthropology has experienced has been healthy and beneficial in some ways, after a point this has become detrimental to the discipline because if nothing can be known for sure, if social science theories have no integrity, and if there are no values that are more or less ethical than others, then anthropology has rendered itself ineffective, and with no way to advance the knowledge and skill of the field. Manicas urges us to return to the ideal of working to contribute to the amelioration of societal problems, which was part of the justification for the social sciences in the first place, and to develop models that are connected to reality (2003; see also Rappaport 1993).

Economics, on the other hand, does present a set of tools – which are used extensively in policy making – even though those methodologies "discount the future and exclude non-monetary concerns and [include] an economic paradigm that cannot address obligations to future generations..." (Tonn 2003:547). Economic models cannot take into account intangibles or items that have no monetary value, such as the role of values and beliefs or the hidden costs of ecological impacts. Instead, measures of economic development focus chiefly on numeric indicators such as GDP – the material welfare of humankind – but are not able to inform us about human or environmental well-being. According to Manfred Max-Neef:

> There are two separate languages now - the language of economics and the language of ecology, and they do not converge. The language of economics is attractive, and remains so, because it is politically appealing. It offers promises. It is precise, authoritative, aesthetically pleasing. Policy-makers apply the models, and if they don't work there is a tendency to conclude that it is reality that is playing tricks. The assumption is not that the models are wrong but that they must be applied with greater rigour... While the many deficiencies and limitations of the theory that supports the old paradigm must be overcome (mechanistic interpretations and inadequate indicators of well-being, among others), a theoretical body for the new paradigm must still be constructed. (1983)

Accordingly, various research efforts are presently working to integrate disciplines in order to help us face current challenges in the areas of development, climate change, and human-environment relations.

1.1.3 Climate Anthropology

In addition to cultural ecology (or ecological anthropology) and its subfield of historical ecology, there is one more subfield that is tied in with the theoretical perspective used in this research: There is now a subfield called "climate anthropology" (Brown 1999; Crate and Nuttall 2009; Finan 2003). As elaborated by Strauss and Orlove (2003), climate change or climate variability is generally associated with the temporal interval of generation (rather than, for example, the time interval of days, which corresponds to the weather). This time interval tends to highlight the connection between individual experience and collective conversation, typically resulting in public discussions of changing climate, as observed in the present field site. In addition, accounts of cultural or moral change tend to be associated with narratives of changing climate and vice versa. Rayner claims that "Climate change has become a prominent site of disputation about competing social values and epistemologies" (2003:278); for example, it sometimes invites discourse surrounding what or who is at fault for the changes at hand and what knowledge can be used to address it. Thus, these issues were examined in the present study through the lens of climate change.

These theoretical insights combine well with both cultural and historical ecology's focus on the relations between nature and culture. Hulme states that

> The story about climate change is a story about the meeting of Nature and Culture, about how humans are central actors in both of these realms, and about how we are continually creating and recreating both Nature and Culture

> (2009:xxviii). …I adopt a capitalization for the nouns 'Nature' and 'Culture' … to signify that I am treating them as unique entities rather than as a class of entities. Although there are many cultures, the idea of Culture is singular. Similarly, while we may recognise many different natures around us, the constructed idea of Nature is singular (2009:xxviii, n. 2).

In addition, as aptly described by Milton, "Cultural perspectives provide the knowledge, assumptions, values, goals and rationales which guide human activity. This activity, in turn, yields experiences and perceptions which shape people's understanding of the world. The process is not unidirectional, but dialectical." (1997:491). Rayner refers to this as a process of coproduction and describes how it might be reflected in language and communication:

> That is to say, for example, that conditions of aridity will lead the inhabitants of a region to focus on precipitation and temperature, but the particular way in which they express that focus will be culturally shaped and that both processes are tightly linked in mutually reinforcing iterative loops. …[for example,] aridity leads farmers to focus on the weather in Arizona, Burkina Faso, and Tanzania (2003:287).

Similarly, Julian Steward, a pioneer of cultural ecology, discussed how, in a drought-prone region, great concern over rainfall patterns meant this became central to everyday life (1955).

In regard to the present research, the migration of Ecuadorians out of the area, and immigrants into it, is also a factor in the human-environment relationships in Vilcabamba. According to Colinas Verdes, a conservation and development organization in San Pedro de Vilcabamba, 25.46% of men and 21.68% of women left the area to work or study. Moran predicts that migration, rather than fertility and mortality, will soon be the key link between population and environment (2000). It is therefore important to examine how people from different ecosystems adapt to or change the environment they migrate to. Of course, migration is increasingly international in nature; this will obviously affect the ethnic and economic composition of populations, which will in turn affect the flow of capital and ideas, resulting in landscape modification (Entwistle, et al. 1998; Moran 2000). Some researchers have already

begun to examine this phenomenon (Colloredo-Mansfeld 1994; Jokisch 2002; Jokisch 1998; Preston, et al. 1997; Taylor 2003).

According to Kottak (1999:26), every society has its own *ethnoecology*, its "traditional set of environmental perceptions – that is, its cultural model of the environment and its relation to people and society." Before the onset of globalization, it was more feasible to explore these local ethnoecologies as bounded units. Now, however, these ethnoecologies are being transformed and challenged through the interconnectedness of today's world. Every conceptualization mirrors a certain world view or belief system, including the way in which we perceive and systematize 'nature.' This diversity of perceptions of nature creates favorable conditions for the growth of different, even conflicting, approaches towards assuring conservation of the natural environment. In Vilcabamba, as in many other areas of the world, foreign ideas arrive to confront local cultural models which themselves have been shaped by particular national, regional, and local forces, including history and tradition. Therefore, the impact of these external forces is not universal or unidirectional (Kottak 1999, 2006; Kottak and Costa 1993). The result is cultural negotiation.

Two originally Euro-American ideas that are now widespread and challenge traditional ethnoecologies are developmentalism and environmentalism (Kottak 1999, 2006; Kottak and Costa 1993), which are quite distinct from more culturally specific and place-based ethnoecologies. Both developmentalism and environmentalism are rather homogeneous, one-size-fits-all ways of thinking that can benefit from more nuanced ethnographic information. A newer, possibly mediating, ethnoecological model - sustainable development - has resulted from the clash of these imported ways of thinking with local ones, as the latter respond to changing circumstances. Ideally, sustainable development requires an understanding of the culture,

ecology, and livelihoods of specific sites, incorporating local knowledge and participation, paying attention to gender and grassroots, locally-based strategies, which often prove more suitable in terms of culture, economics, and sustainability. In this way it attempts to reconcile traditional local ethnoecology with environmentalism and developmentalism. This dissertation will explain how this is happening in Vilcabamba, Ecuador.

In conclusion, the perspectives of cultural ecology, along with the closely related perspectives of historical ecology and climate anthropology, have been useful as a way to analyze the human-environment-development matrix in Vilcabamba. Clearly, there are many factors at work and it would be very difficult to delineate the exact contributions of human vs. environmental factors to the desertification that is occurring; however, the ethnographic data provides an interesting case study of how and why humans relate to the environment in the way that they do in this particular area, where effects of sociocultural, political-economic, and climate change are prompting the adoption of different subsistence and local economic strategies. An examination of these ecological and social relationships, combined with other case studies, not only improves the theoretical base of cultural ecology but informs the cultural change of humanity towards sustainability.

1.2 THEORIES OF DEVELOPMENT IN LATIN AMERICA

1.2.1 Modernization

In the past most development in Latin America focused on the involvement of Western governments in fostering economic growth and trade, with the intent of raising standards of

living, through foreign-assistance programs within less-developed countries. However, most early forms of development were based on the theory of modernization, which posited that societies could only hope to develop or "progress," often assumed to occur in a linear fashion, through adopting Western beliefs, practices, and institutions (Black 2005; Parpart, et al. 2000; Stern 1988). Developmental literature from this period is replete with ethnocentric references to helping "backward" people enter into the "modern" world (Starn 1991; Thompson, et al. 2007; Wilson 2002). Development planners, in a paternalistic manner, often considered culture as a "thing" to be defined and manipulated in order to bring its members into modernity. The fact that culture is created by social forces has often been overlooked; instead, culture has been viewed as equivalent to (unchanging) traditions (Harper 2002). This ethnocentric bias, along with the fact that development assistance was at times ultimately used to promote Western political and economic objectives, has been extensively criticized and questioned by social scientists and others (e.g., Escobar 1995; Hobart 1993). Escobar and others (e.g., Escobar 1988; 1991; Shiva 1989; Starn 1994) have argued that development is simply one of the more recent modes of domination of the Third World by Western countries, likening it to colonialism and imperialism.

1.2.2 Dependency Theory

A critique of modernization theory was put forth by dependency theory (Evans 1979; Gunder Frank 1969; Santos 1970; Stern 1988). Instead of assuming the diffusion of technology and cultural traits from "modern" to "traditional" societies, as in modernization theory, dependency theory focused instead upon the unequal power relations between two societies, making one country dependent on another and subject to its rules and whims. In the view of the *dependistas*

(dependency theorists), societies could not develop while their wealth was being transferred to a more powerful nation within the capitalist system, causing a loss of local autonomy, and this was only intensified by neoliberal economic reforms. Though modernization theory tended to view underdevelopment or lack of development as the result of local failure, dependency theory instead claimed that development was distorted by the exploitation and colonialism of the Third World by First World powers.[18]

Modernization or development has not been what some thought would be the inevitable product of the forward march of progress, since one of the most troubling aspects of life in Latin America today is the increasing poverty experienced by the overwhelming majority of citizens, which can be contrasted with the increasing wealth of a very small portion of the population. The modernization model was focused on rapid industrialization, technology transfer, increasing exports, and government investment in infrastructure. This sort of development is biased against agricultural and rural development, but it was assumed that the benefits of this mode of development would trickle down or diffuse outward spatially from the core cities where the initial investments were made. However, this did not happen. Among other negative effects, the emphasis placed on industrialization, intensive export agriculture, and the needs of the urban sectors devastated smaller and local commodity producers who were primarily rural. Unintended and unanticipated results included worsening rural poverty and massive rural-to-urban migration in search of wage labor.

[18] The closely-related world-system theory is a direct outgrowth of dependency theory (see the various writings of Wallerstein, beginning in 1974).

1.2.3 Import Substitution Industrialization and Structural Adjustment

Early development models entailed strict attention to economics. From the 1940s to 1960s in Latin America, development policies first focused on state-led industrialization (ISI, import substitution industrialization) and modernization policies and then in the early 1980s on neoliberal structural adjustment policies (SAPs).[19] Part of the rationale for the implementation of ISI was to reduce dependence upon imported industrial products and, in this way, foster progress within the nation-state. In order to create more of an internal market for these products, however, it was necessary to bring the marginalized and rural population into this market. This sector of the population at the time had no buying power; it was thought that one way of doing this was to promote agrarian reform, which was implemented under an incomplete model and therefore did not produce the desired results.[20] The continued lack of income of a large segment of the population, principally those in the rural and informal sectors, prohibited their needs for basic goods from being converted into market demand (Lefeber 2003).

Ecuador and other Latin American countries borrowed enormous amounts of money from international lenders in order to fund industrialization and the infrastructure that it required. However, when the world economy went into recession in the 1970s and 1980s, Latin American countries were not able to pay these debts, leading to what some have called the Lost Decade of the 1980s or the Latin American Debt Crisis. Subsequently, through the encouragement of international financial institutions, Ecuador and other countries implemented structural

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[19] Finan (1997) has made the important distinction that structural adjustment reform did not constitute "development," per se, but was imposed as one of the conditions under which development assistance would be granted by international lenders.

[20] The issue of agrarian reform will be discussed in more detail later, as it had considerable impact upon the population of Ecuador and on the research for this dissertation.

adjustment policies (SAPs) in order to help them make payments on these loans. SAPs require programs and policies to support the free market, liberalization, privatization, deregulation, and austerity measures such as cuts in state spending for social services (e.g., education, public health), infrastructure, and locally oriented production. These SAPs were implemented without any accompanying support policies for the rural and agricultural sector and led to even deeper social inequalities. In a study of the effects of the implementation of neoliberal policies on the Andean countries, Martínez Valle (2003) found harsh social, economic and ecological consequences triggered by price instability, lack of credit, decreases in spending for public programs, and the abandonment of agrarian reform (see also Bebbington 2001; Carroll and Bebbington 2000). The standards of living of the majority, especially those in the countryside, deteriorated significantly. Moreover, in terms of agriculture, both the ISI and SAP development models served to benefit the large capitalist producers on the haciendas who had already gained market power during the 19th century agricultural export expansion booms (North 2003).

1.2.4 Anthropological critiques of development

Anthropologists and others have raised a number of concerns about many aspects of development, including the thinking behind it, the techniques used, and the impacts of development programs on people and places. One overarching critique of development has been its focus on economics to the exclusion of social and environmental factors. Many development projects have been based on a blueprint model, where it is assumed that a strategy or idea that worked in one place will work in another, without taking other important factors into account, such as livelihoods, culture, and local ecology. Another problem has been the fact that not only have locally perceived needs, local knowledge, and technology not been considered, but in many

cases they have been deemed obstacles to progress – Western notions of progress, that is. Instead, top-down approaches[21] have focused on 'efficiency' and the transfer of technology, triggering the associated problems of paternalism, dependency, and lack of local fit or control. As a result, in many cases these programs and approaches have not been sustainable either in terms of sociocultural factors, the environment, or their long-term continuance.

Many academics balk at the baggage carried by the word, and indeed the whole concept of "development." However, one purpose of this dissertation is to demonstrate possible areas of improvement by means of a case study and by delineating how the current trend within development circles, sustainable development, may work in practice. The general idea of development—the improvement of the human condition—retains its value. However, as Veteto and Lockyer state, "development has become synonymous with a certain kind of development, one based on distinctly Euro-American, socio-cultural, and political economic models and one driven by the dictates of global capital" (2008:56, n. 1). Some have even questioned whether there should be any development at all, citing, for instance, the inevitable power relationships, intervention, and hubris that the idea implies (e.g., Escobar 1988, 1995; Hart 2001; Hobart 1993). However, as Finan articulately states:

> If by *development,* one means an industrial First World conspiracy to subjugate powerless Third World communities into a role of self-effacing cultural and economic inferiority, let the endeavor be ceased and the concept exorcized. If, on the other hand, development means directed change toward the minimization of poverty and the expansion of opportunity, then it becomes not only desirable but essential in a globalizing world. (Finan 1997:84)

Despite the many and varied critiques that have been aimed at the idea, process, and effects of development and of specific projects, it is frequently the case that our critiques of

[21] Top-down approaches refer to either the process of implementation (e.g., from bureaucrats to technicians on down to the people the projects are supposed to benefit) or beginning internationally, or at least in metropolitan areas, with the intention to 'trickle-down' and outward to rural areas.

approaches to development are unaccompanied by viable solutions (Veteto and Lockyer 2008). In addition, even the more contemporary and idealized version of development, sustainable development, is often ill-defined and may work in theory, but much less often in practice.

1.3 SUSTAINABLE DEVELOPMENT

Climate change and environmental degradation further challenge the development paradigms of the recent past. The form of development that is presently in vogue is termed sustainable development, which is most commonly defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987:43). In general, sustainable development is presumed to involve a consideration of economic, social, and environmental factors. However, as previously mentioned, it has turned out to be much easier to talk about sustainable development than it is to implement it in practice, and the term is often overused, ill-defined, and even at times used as a form of greenwashing.

The major potential impacts of climate change generally are assumed to include temperature rise, increased and decreased precipitation, sea level rise, intensification of ultraviolet-ß radiation, and increased frequency and force of extreme weather events (Swaminathan 2000:105). The most adverse impacts will be experienced by developing countries, where populations are more vulnerable and can less easily adapt. In developed countries, there has been a considerable amount of focus on mitigation, or doing what's possible to lessen the effects of climate change (e.g., efforts to reduce emissions, using carbon sinks to

absorb carbon dioxide in the air). It is also important, however, to design strategies for adaptation and resilience. Ideally, sustainable development aims at culturally appropriate, ecologically sensitive, and self-regenerating change. Accomplishing this is much easier said than done.

1.3.1 Climate change, human beings, and how they inform our understanding of sustainable development

Sustainable development and climate change are interlinked issues, and policies pursuing both sustainable development and climate change adaptation and mitigation should be mutually reinforcing. According to Füssel and Klein, "Mitigation refers to limiting global climate change through reducing the emissions of greenhouse gases (GHGs) and enhancing their sinks. Adaptation primarily aims at moderating the adverse effects of unavoided climate change through a wide range of actions that are targeted at the vulnerable system." (2006:303). Thus, mitigation refers to reducing the change process, while adaptation aims to increase the ability of both social systems and ecosystems to adjust to the impacts of ecosystem change.

Climate change significantly affects the economic, social and environmental dimensions of sustainable development, and vice versa; one can affect the other, positively or negatively, in various ways (see Figure 8). Therefore, it is important to design integrated strategies that can address both environmental and developmental needs at the same time. Clearly these issues and strategies should involve people.

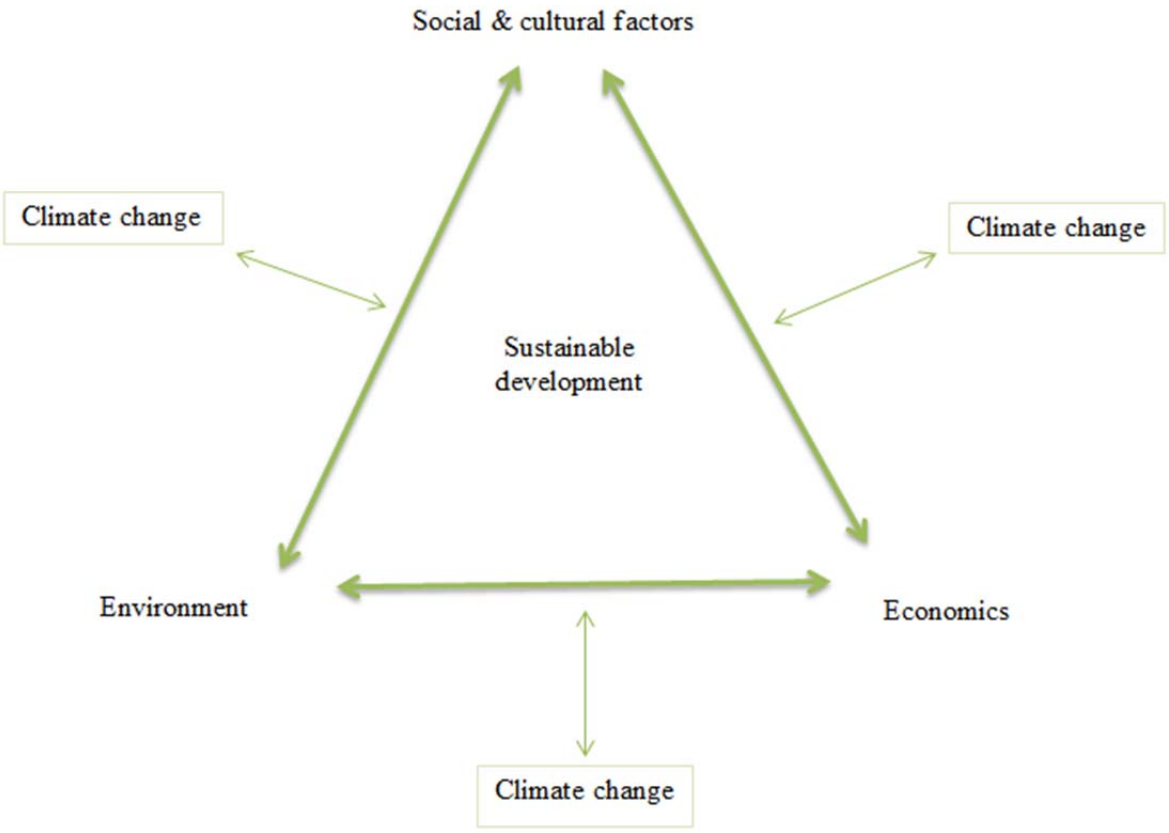

Figure 8. Interactions between climate change and aspects of sustainable development

It is one thing to think about climate variability or cycles and the forecasts for long-term climate change, but considering how humans are and can be a factor is something a little different. As stated earlier, adaptation generally takes place at the local level; therefore, by understanding local people's awareness, perceptions, and beliefs about climate and the environment, and their knowledge of human impacts, we can better comprehend how they will behave and adapt to climate change, and why (Pyke, et al. 2008). Since climates have both physical reality and cultural meaning, the idea of climate can only be fully understood if we

attempt to discover how these physical and cultural dimensions interact and mutually shape each other.

Some facets of climate we obviously cannot control, but on the other hand it is important to help people adapt to climate change and to avoid, as far as possible, human activities that have negative impacts on climate. In these ways, climate change can be a stimulus for innovation and societal adaptation. Rather than viewing climate change simply as a threat that needs to be dealt with, perhaps we can think of ways that addressing climate change proactively can ultimately encourage the resilience[22] and adaptation of local societies and institutions (Hulme 2009).

It is necessary for climate change and development issues to be approached, understood, and addressed within their context, considering various local stressors. Local people can define the risks and best describe what they are experiencing, because their assessments of climate variation are established in localized contexts and processes of livelihood adaptation (Roncoli, et al. 2009). This will help us to fill the current gap between scientific knowledge and practitioners' needs in addressing climate adaptation and mitigation (Robinson, et al. 2007). In sum, by examining the links between climate change and development, we can learn how climate change responses might be better integrated into emerging sustainable development strategies, especially through the adoption of new subsistence and livelihood strategies.

[22] Here I am referring to social resilience, which Adger (2000:347) defines as "the ability of groups or communities to cope with external stresses and disturbances as a result of social, political, and environmental change." Ecological resilience, on the other hand, is a characteristic of ecosystems to maintain themselves in the face of disturbance. According to Adger, there is a clear link between social and ecological resilience, especially for social groups or communities that are dependent on ecological and environmental resources for their livelihoods.

2.0 RURAL DEVELOPMENT IN ECUADOR

2.1 LAND REDISTRIBUTION

Ecuador's agrarian reform officially began in 1964 with the objectives of expanding the agricultural frontier (and thereby increasing production in order to feed those in the cities and to support industrialization and exports), defusing the social pressures that were the result of skewed land distribution, and further developing the export sector of the economy. Accordingly, the goals of agrarian reform consisted of land reform and agricultural modernization (Abbott 2005; Zamosc 1994). Land reform was partly in response to growing pressure on the part of *campesinos*[23] for access to land that was largely in the hands of the *hacendados* (owners of large *haciendas* or ranches). The agrarian reform laws of 1964 and 1973 allowed for some of this land to be redistributed, first through the outright transfer of title to tenant farmers, *huasipungueros* who had worked the land for the *hacendados*.[24] Later, *hacienda* land was seized by the *Instituto Ecuatoriano para la Re forma Agraria y Colonización* (IERAC), the state's land reallocation agency, and sold to landless peasants. Land that was seized was that considered to be unproductive "waste lands" (*tierras baldías*); this included land in the relatively uninhabited

[23] A *campesino* is a peasant; a person who lives in the countryside and/or who makes their living from the land.

[24] In the *huasipungo* system, an agricultural worker (often an Indian) and his family were bound to a landowner. In exchange for working on the hacienda, the worker (*huasipunguero*) had access to a small plot of land on which to live and farm. The arrangement usually resulted in the Indian becoming indebted to the landowner. The term may also refer to the plot of land used by the worker.

Amazonian region. Land with 80% forest cover was considered unproductive or useless and could be occupied and appropriated (Granda 2006). Essentially, those who did not own land could apply for title to land that was not in use. These agrarian reform laws therefore encouraged the colonization of uninhabited and unused land, spread ownership amongst more people, and extended human activity over a much greater land area than before (Aird, et al. 2005). Unfortunately, as described below, they also encouraged the "utilization" of land.

According to Jorge Mendieta: "*Las personas que vivían en el pueblo, salían a trabajar en el campo, porque había una cl áusula totalmente criminal, que error del gobierno… Yo no sé Dios, como pensaría en ese mo mento calificarlo a esa persona. ¿Sabe cómo era la clausula? Era finca no trabajada, finca quitada. ¿Qué hacía el propietario? Talaba un poco e n la parte baja, le metía fuego cuando ya estaba seco, y eso se quemaba. Por qui nce, hasta por un mes. Nadie se apagaba ese fuego. Ahí en ese tiem po, más o me nos del '64, '68, '70, acabaron con flora y fauna pero sin límite. No tiene calificativ o. Fue la exterminación de todo en este sector de la provincia de Loja. Y ha venido la sequía. Todo el mundo emigró a Nueva Loja -- Lago Agrio – y a Santo Domingo de los Colorados.* (The people who lived in town left to work in the country, because there was a clause that was totally criminal, what an error of the government… I don't know, God, how you thought in that moment to qualify this person. Do you know what the clause was? It was farm not worked, farm taken. What did the owner do? He cut down a little in the lower part, set fire when it was dry, and this burned. For 15 [days], up to a month. No one put out the fire. In that time, around '64, '68, '70, it was the end of flora and fauna without limit. There is no way to describe it. It was the extermination of everything in this

sector of the province of Loja. And then came the drought.[25] Everyone emigrated to Nueva Loja[26] and to Santo Domingo de los Colorados [now Santo Domingo de los Tsáchilas])." Other informants, too, pointed to the use of fire to make it appear that land was being utilized, so that it would not be taken away. In some ways, this is a continuation of the use of slash-and-burn agricultural techniques, but in a destructive and dangerous form. The use of fire to clear land in the valley of Vilcabamba continues today, and is a source of conflict among residents because it is often used indiscriminately and leads to fires that burn out of control, especially in the dry season.

Frequently, land that was sold or allocated to the *campesinos* was of inferior quality compared to that retained by the *hacendados*: The *hacendados* kept the most fertile and low-lying land for themselves, while the *campesinos* received small plots of land of lower agricultural value (e.g., steeply sloped, dry, less fertile) (Almeida Durán and Centro Interamericano de Artesanías y Artes Populares 1999; Castillo Vivanco 2001; Chiriboga Vega 1988; Valarezo García 1987; Zamosc 1994). The majority of the land obtained through colonization, after 1964, was acquired by new enterprises devoted to the exploitation of lumber, livestock, or agro-industrial production and exportation (Suárez-Torres, et al. 1997). In Loja province in particular, landowners tried to anticipate land reform by selling parcels of land ahead of time, seeking to maximize prices by encouraging competition to buy the land among merchants, bureaucrats, doctors, and lawyers (Almeida Durán and Centro Interamericano de

[25] Other informants also made connections between the increased use of fire during this time and the subsequent drought. To what extent the fires provoked the drought of course cannot be known, since droughts have periodically occured in the region, but the fact that people draw connections between the two is interesting nonetheless.

[26] It should be noted that there are two reasons that Vilcabambeños emigrated to Nueva Loja: The first, discussed here, resulted from the fact that the government encouraged the colonization of the Amazon region; the second is the result of oil development there, which began in the late 1960s and generated employment opportunities.

Artesanías y Artes Populares 1999; Zamosc 1994). In actuality, land distribution in Ecuador has changed very little since 1954 (see Table 3): In that year, 44.4% of the land was owned by 2.1% of the landowners; in 2000, 42.5% of the land was owned by 2.3% of the landowners (Viteri Díaz 2007:37). An unanticipated effect of the agrarian reform laws is that it actually increased migration, most often to the cities in order to find work, because peasants did not actually gain much access to land, and because of the conversion of large-estate production from traditional food crops to livestock raising or other forms of industry that required less manual labor, which in turn had a devastating impact on rural employment (North 2003).

Table 3. Land distribution in Ecuador

	1954		***1974***		***2000***	
SIZE OF LANDHOLDING	owners	area	owners	area	owners	area
(hectares)	%	%	%	%	%	%
less than 5	73.1	7.2	66.9	6.8	63.5	6.3
between 5 and 10	10.5	4.5	10.6	4.8	12.0	5.6
between 10 and 100	14.3	43.9	20.4	40.6	22.2	45.6
100 or more	2.1	44.4	2.1	47.8	2.3	42.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

2.2 AGRICULTURAL MODERNIZATION

The main purpose of the second goal of agrarian reform, agricultural modernization, was to increase production in order to meet the growing demands for food in the cities as well as to increase exports to foreign markets (Keese 1998; North and Cameron 2003). However, agricultural development policies, including subsidies that emphasized the commodification and commercialization of food, benefitted large producers, the export sector on the coast, and urban consumers while neglecting the smaller farm sector (Keese 1998; Lefeber 2003), although this segment consists of the largest number of producers by far. The rural sector rapidly became characterized by a sharp division between a small elite sector of large-scale agribusiness that produced for world markets and an immense peasant sector that was rapidly being driven out of agricultural production all together (Martínez Valle 2003). Essentially, economists' new "big push" and "trickle down" theories of economic development (discussed in the last chapter) emphasized investment in the urban industrial sector, infrastructure, and mechanical farming, rather than rural development.

The agricultural sector was further liberalized in the early 1990s. In particular, the 1994 *Ley de Desarrollo Agrario* (Law of Agrarian Development) brought redistributive land reform to an end and instead emphasized land markets (Martínez V. 1998). The World Bank, in particular, argued that if small-scale producers are more efficient than large-scale producers with respect to the volume of production per hectare, they should be able to obtain more land through the market. This line of reasoning stems from the assertion that, all things being considered, small farms are more productive and efficient than large farms, and that labor intensity and productivity are inversely proportional to the size of landholding (e.g., Ellis and Biggs 2001; Lefeber 2003; Pretty 1999; Pretty and Hine 2001; Pretty and Smith 2004; Sen 1999; Thompson,

et al. 2007). However, this policy emphasizing land markets did not consider two important points: 1) the highly restricted capacity of small-scale peasant producers to access credit and to purchase land through the market; 2) the lack of willingness of large landholders to a) cultivate their land more intensively so that they would need less of it and b) to sell their surplus land to peasants (Martínez Valle 2003): Control of land in the Andes is not only a source of wealth but also of social and political power.

The 1994 Law of Agrarian Development also paved the way for the free importation of supplies and seeds and the liberalization of their distribution (Shimizu 2003). The *Proyecto de Modernización de los S ervicios Agrícolas* (The Project to Modernize Agricultural Services, PROMSA), financed by the World Bank and the Inter-American Development Bank (IDB), became the center of agricultural sector reform. Through PROMSA, the Ecuadorian state worked in conjunction with private businesses to disseminate agricultural extension services and technology to the agriculturalists who paid for these services. According to Martínez Valle (2003:87):

> Sectoral policies were...aimed at strengthening a highly competitive private sector on the basis of scientific management, high-yielding varieties, and industrial inputs (Whitaker 1996:32) – a strategy that consisted of little more than combining a market approach with green revolution technology. What is perhaps most objectionable is that the advocates of this model also presented it as an environmentally sustainable alternative to peasant production, which, they argued, was characterized by exploitation by poor, small-scale farmers lacking appropriate scientific and technical knowledge.

Part of the irony in all of this, as later chapters demonstrate, is that it is this approach that has turned out to be environmentally, socially, and economically unsustainable. The technologies promoted by agricultural extension agents included a wide range of new processes and materials. Among these were high-yielding, modern seed varieties that responded well to irrigation and

industrially produced, water-soluble fertilizers when monocropped. The promotion of these new technologies was often bundled with economic incentives such as access to credit to buy these farming inputs, and such programs persist today, providing a strong incentive for the continuing adoption of modern varieties (Abbott 2005; Yapa 1993). Especially as regards the marginal farm sector, such inputs and modern technology may not be justified economically, and causes paternalism and dependence (Keese 1998). Agricultural modernization in Ecuador has resulted in dramatic agroecological and socioeconomic transformations (Keese 1998; Suárez-Torres, et al. 1997) (see Section 3.3 for more information).

Prior to agrarian reform, two main broad production systems existed in Ecuador: the large *haciendas* and the vast number of smaller farm units dedicated to a wide range of traditional crops. A great deal of the *hacienda* land was used to pasture livestock, and a smaller area was dedicated to crops. This allowed for crop rotation as well as long fallow periods; both techniques are extremely beneficial for the health of soil and thus, plant health. By the middle of the 20th century, some agrochemicals and new crop varieties were introduced as part of agricultural modernization. Thus, many *campesinos* first experienced modern technology on the *haciendas*, or in sharecropping arrangements (where a portion of crops are given as rent) (Bebbington 1993).

The second production system was based upon small plots of land on which families grew their food and perhaps raised some surplus for the market. Pesticides were rarely used; instead, they utilized the manure from animals kept on the *hacienda's* pasture lands for fertilizer. However, this agroecologically sound practice ended with land redistribution. In addition, as population increased, land was further subdivided and fallow periods reduced, either due to owning less land or trying to get the land to produce constantly (Keese 1998). The use of

chemical fertilizers and pesticides has increased with their greater availability, allowing production from crops weakened by poorer soils. However, this has secondary (and further) effects as well, since the remains of crops that are sprayed with chemicals cannot be used as fodder for livestock. Similarly, the traditional and more agroecologically sound practice of planting beans and squash with corn is no longer done because the herbicides used on the corn will kill the other plants (Gondard 2004).

A large-scale example of rural development in Ecuador is PRONADER (*Programa Nacional de Desarrollo Rural* , National Program of Rural Development), a state-administered program intended to reduce poverty and promote socioeconomic development, in effect from 1990-2000 and funded largely by a loan from the World Bank. Although not implemented south of Azuay (and therefore not in Loja province), the program failed to achieve positive results in terms of livelihoods and living conditions in seven out of the 12 rural areas in which it was carried out. The main reason for this is that it did not incorporate a holistic understanding of the problems faced by the peasant economy that were created by Ecuador's macroeconomic and agricultural policy framework, especially the lack of access to credit and markets. Neither did it recognize the potential importance of endogenous peasant initiatives, which have the capacity to create employment and generate income. In addition, because of its top-down and paternalistic approach, local peasant organizations were not able to assume control over the projects when PRONADER support ended (Martínez Valle 2003). According to the World Bank (2001), "the project outcome was unsatisfactory, sustainability unlikely, and institutional development impacts negligible."

In short, due to the problematic nature of the development models that were implemented, along with inadequate agrarian reform, there has been a failure to develop a broad-

based program for rural development in Ecuador, and this has had a significant social and environmental cost (Lefeber 2003). Ecuador's rural areas display uneven development patterns characterized by noticeable historic, economic, and social differences (Keese 1998).

2.3 THE IMPACT OF ECUADOR'S DOLLARIZATION

The Ecuadorian economy expanded greatly in the 1960s and 1970s, largely due to oil exports. However, as mentioned previously, the country began to experience a severe recession in the "lost decade" of the 1980s. The implementation of structural adjustment policies resulted in a withdrawal of public subsidies for agricultural loans: Interest rates for these loans were changed from fixed to floating rates, after which interest rates skyrocketed, and agriculturalists were no longer able to repay the loans. In addition, it became almost impossible for *campesinos* to access credit. Poverty increased significantly throughout the 1990s.

The General Law of Financial Institutions went into effect the same year as the Law of Agrarian Development (1994). This IFI-mandated financial deregulation basically left the private banking system to supervise itself, leading to outrageous corruption and intensifying the economic crisis (North and Cameron 2003). In early 2000, in an effort to stop inflation and the devaluation of the national currency (the *sucre*), the Ecuadorian government decided to dollarize the economy: One dollar was fixed at 25,000 sucres. In macroeconomic terms, dollarization helped to stabilize the economy, and the government acted to protect and promote the interests of, for example, the large exporters of bananas and cut flowers (Carroll and Bebbington 2000). However, it had very unfortunate effects on people's lives: They had less buying power,

incomes deteriorated, poverty increased, and there was an overall negative impact on well-being (Fishlocke 2005).

Pancho Wachisaca, age 52, an agronomist and employee of PREDESUR, the regional development organization of El Oro, Loja, and Zamora-Chinchipe provinces, describes the situation of agriculturalists this way: "*No hay protección del estado para los agricultores. Están desmotivados, desprotegidos. El verdadero agricu ltor no recibe nada. Se muere. Es presa el agricultor. ... La dolarización ha creado más problemas. Los países vecinos se quedaron con su moneda. Pero con la dolarización, un dólar no vale nada. Había una crisis total para el pequeño agricultor. Los agricultores Peruanos vinieron, trajeron aquí sus productos. Era abismal para el agricultor. El prim er año de dolarización el agricultor preguntaba "¿para qué producir panela?" Café también. Sólo el ganado era un respaldo.* (There is no protection from the state for farmers. They are discouraged, vulnerable. The true agriculturalist doesn't receive anything. He dies. He is a victim. …Dollarization created more problems. Neighboring countries took your money. With dollarization, a dollar was worth nothing. It was a total crisis for the small producer. Peruvian farmers came, bringing their products here. It was abysmal for the agriculturalist. In the first year of dollarization the farmer asked, "Why produce *panela*?" Coffee, too. Only cattle were a back-up.)"

Bates (2007) discusses how the agricultural crisis in Ecuador has resulted from the combination of environmental degradation and the adverse financial context of structural adjustment. She argues that the two nearly-simultaneous circumstances, especially the withdrawal of subsidies for agricultural loans and productivity declines associated with land degradation, have resulted in people having little choice but to migrate.

In the Amazonian region, the combination of soil exhaustion along with the increased presence of pests is referred to as the *barbecho* (fallow land) crisis (Bates 2007). This situation is identical to that experienced in the Vilcabamba valley and other areas of Ecuador. Normally, fallow land is only being left to recover while one utilizes other plots of land, but in this case, the barbecho crisis refers to large areas of land being left uncultivated indefinitely. Although structural adjustment policies did not directly cause this crisis, they did make it virtually impossible for the rural economy to absorb or rebound from declines in agricultural production.

Migration is also a very prominent fact of life throughout Ecuador. Unfortunately, however, it is a vicious cycle: Ecuadorian families, and the nation itself, have come to depend on the remittances that result from migration, which enforces the pattern of migration and at the same time provides no or few economic opportunities for residents. The two main effects of remittances on the Ecuadorian economy are temporarily stabilizing a normally unstable economy, and more fully integrating Ecuador into the global economy (Pribilsky 2009). One might think that this could have a positive effect on rural development, but as discussed elsewhere in this dissertation, and has also been found to be the case in Mexico, dependence on remittances only hampers rural development (Bates 2007).

3.0 "NO PODEMOS COMER BILLETES": LIVELIHOODS AND FOOD SECURITY

3.1 LIVELIHOODS AND MIGRATION

As discussed in the introductory chapter, livelihoods are more than paying jobs; they also include other factors that are relevant to making a living. These include the social relationships that are involved, human health and capabilities, satisfaction, and well-being; in other words, how they make a living and how they make it meaningful. The concept incorporates strategies other than agriculture, which is important because contemporary rural families often combine assets and activities to form their livelihoods, of which farming is only a part. When Ecuadorians discuss livelihoods, it is clear that livelihoods have changed a great deal and are continuing to change.

Ecuadorians now need money more than ever and many are forced to find jobs (in the strictly economic sense) outside their home communities. Some think that this is simply part and parcel of modernization, and along with this, many don't want to claim that they live in the countryside, and definitely not that they're farmers. It is also true, however, that due to various political-economic factors, farming in many cases is not a profitable business to be in. Add to this the problems of land degradation, pests, and climate change, and it is clear why there are not nearly as many people raising food anymore. This has a detrimental effect on food security, or access to sufficient and diverse foods that make up a healthy diet.

"*Hay menos agricultores. Ya hay 60% agricultores, antes estaba 90%. Para diversificar es una posibilidad (con brócoli, to mate de árbol, coliflor, col, etc.) Les gusta ser albañiles, choferes, poner negocios, otras actividades. Todos ellos antes serían agricultores y ahora ya no. No quieren volver el campo porque el clima no es seguro. Antes habían ciclos regulares de lluvia. Ahora no hay confianza. Antes decía la agricultura 'mañana llueve' y ya sabía llovía el otro día, pero ya no. El problema es verdadero. Hay que ganar más, y más seguro porque allá [en agricultura] invierten y pierden. Pierde trabajo y dinero. Aquí [en construcción] por lo menos no pierden nada. ...Hay un problema del mercado también.* (There are fewer agriculturalists. Now there are 60% agriculturalists, before there were 90%. To diversify is a possibility (with broccoli, tree tomatoes, cauliflower, cabbage, etc.). They like to be bricklayers, chauffeurs, run businesses, other activities. All of them were farmers before, now they're not. They don't want to return to the farms because the climate is not reliable. Before there were regular cycles of rain. Now there is no confidence. Before the farmer would say 'tomorrow it will rain,' and you would know that it would rain the next day, but not now. The problem is real. You have to earn more, and more securely because in agriculture you invest and lose. You lose work and money. Here [in construction] at least you don't lose anything. There is the problem of the market, too.)" ~ Eduardo Vargas, age 60.

This quote by a man who was once a farmer and is now primarily a businessman encompasses various problems that Vilcabambeños are encountering in their political-economic, social, and natural environment with work and with the weather and climate. Other research participants echoed the same concerns and observations about the hard work, risk, and loss involved in agriculture, the problems with and lack of support of the market, and the unpredictability of the weather. According to Santiago Arris, age 52, owner of a restaurant and

bar: "*La dolarización, migración, desertización de la tierra, y cambio climático se acabaron la mano de obra del campo.* (The dollarization, migration, desertification of the land, and climate change have brought to an end the work force of the agriculturalists.)" These factors have resulted in lands being left uncultivated. "*En el pasado el uso de la tierra y la producción tenían importancia. Ya no le sirve. Ya no le da de comer. No le sirve para nada. Ya no tiene fe en la tierra. Ya mucha gente tiene apatía.* (In the past the use of the land and production had importance. Now it doesn't serve you. Now it doesn't feed you. It doesn't serve for anything. Now [the people] don't have faith in the land. Many people feel apathetic)," said Pancho Wachisaca.

Similarly, Melania Carrión, age 47, said that "*Hay poca agricultura. La gente ya no se arriesga por medio de no saca ningún producto. La gente ya no trabaja, quiere tocar la guitarra y bailar. Esa gente so lo consume, ya no produce nada. La gente no le gusta trabajar, quiere migrar a otro país. No avanzan las personas, no avanzan los fréjoles para todo. Todo está bien caro. La vida es caprichosa. Solo el intermediario gana. La tierra no ayuda, ya no es muy fértil por tanto químico. La mayoría de la gente no produce nada. El año pasado sembraba fréjol y maíz y se cortó todo. Invertí $50 y no coseché ni $10. No hay bastantes legumbres y son caros. Ahora la tierra ya no la apreciamos mucho, preferimos ponerle un buen precio y ya vendimos. Es mejor asolearse, sin esperando la lluvia. Ya hay más gasto en él y no me produce. La gente gasta y no cosecha.* (There is little agriculture. People don't take the risk because they don't get any product. People don't work now, they want to play the guitar and dance. Those people only consume, they don't produce anything. They don't like to work; they want to migrate to another country. The people can't move forward, there aren't enough beans

for everyone. Everything is really expensive. Life is capricious. Only the intermediary wins.[27] The land doesn't help [us], now it is infertile because of so many chemicals. The majority of people don't produce anything. Last year I planted beans and corn and lost everything. I invested $50 and didn't even harvest $10 [worth]. There aren't enough vegetables and they're expensive. Now we don't appreciate the land, we prefer to put a good price on it and sell it. It is better to sunbathe, instead of waiting on the rain. Now there is more expense in working the land and it doesn't produce for me. People spend and aren't able to harvest.)" The part about sunbathing instead of waiting on the rain to arrive is interesting and illuminating: They might as well take advantage of the abundant sun, rather than wait in vain on the rain.

The themes contained in this quotation were confirmed by others. These themes include how people "don't want to work;" they "just want to party;" they can't get ahead; there is no production, and people only consume; lack of food security; only the intermediary wins and other problems with the market; people-land relationships; desertification; the effects of agrochemicals; risk and uncertainty; the changeability and unpredictability of life; the weather and the climate; the repercussions of Ecuador's dollarization and other economic policies; and migration and remittances. The picture as a whole helps us to understand how subtle (and not so subtle) changes in the political-economic, cultural, and ecological environment can lead to instability, and further highlights the importance of adaptation and resilience.

In regard to people not wanting to work, one informant put it this way: "*Sólo la gente de 45 años y más quiere trabajar. Son alimentados de afuera.* (Only the people over 45 years old want to work. They are fed from outside.)" The statement that literally translates as "fed from outside" refers to the remittances that are sent home from those who have migrated. Remittances

[27] According to the Ecuador's Agricultural Census of 2000, 82.8% of commercial agricultural produce was purchased by intermediaries (Viteri Díaz 2007).

constitute the second largest source of foreign revenue; petroleum exports are the first (Jokisch and Pribilsky 2002; Whitten 2003, 2004). Earlier in this decade the amount of revenue from remittances totaled $1.41 billion (Bates 2007; Jokisch and Pribilsky 2002:90).

Most of these remittances are directed toward household expenses, new buildings, cars, and forms of conspicuous consumption, which seems to be a common pattern in Ecuador: Jokisch and Pribilsky have described how remittance money sent to families in south-central Azuay (the province to the north of Loja) is generally not dedicated to productive ventures and therefore has not led to sustained development of communities (2002). Many households who receive remittances have suspended agriculture altogether (cf. Pribilsky 2009). Instead, remittances are dedicated to canceling debt, purchasing land, perpetuating international migration, and building 'modern' (usually concrete) houses (Jokisch 2002; 1998). Although it does provide much-needed cash to rural communities, Reichert (1981) has called this dependence on international migration "the migrant syndrome" because it leads to inflation in land prices, reduced investment in production, and more migration, all of which have taken place in the present context.

The effects of migration are reflected in the following statement by Inez Ocampo: "*Los jóvenes han salido. Ya quedan viejitos y no cultivan*. (The young people have left. The old ones are still here but they don't cultivate.)" And according to Santiago Arris, "*Hay una falta de producción de la tierra agrícola. Está 90% abandonado el campo en la comida. La caña no comes. Es un fenómeno*. (There is a lack of production of the agricultural land. The countryside is 90% abandoned in terms of raising food. The sugar cane you don't eat. It's a phenomenon.)" His use of the term "phenomenon" indicates that it is something both observable and extraordinary.

The above statements of Santiago Arris, Pancho Wachisaca, Melania Carrión, Inez Ocampo, and others are indicative of changing people-land relations and livelihood strategies. Martínez Valle (2003) also discusses how structural adjustment programs have resulted in decreased connections to land. People no longer derive their income from their property; they are more likely to migrate (especially to the cities, which are far from home) or to sell their labor. These changes stem from Ecuadorian economic and development patterns, globalization, migration, climate change, and the fact that land in Vilcabamba is valuable. In addition, land is being subdivided due to sales or to inheritance.

3.2 REAL ESTATE

In 2007 land in Vilcabamba was generally more expensive than property in the surrounding valleys even though, for instance, the adjacent valley of Malacatos is also quite beautiful and temperate. In July 2007 I visited the *Oficina de Avalúos y Catastros* (Office of Valuation and Property Tax) in the town hall of Loja in order to verify land prices. In the center of the town of Vilcabamba, prices averaged $57 to $63/m², whereas in Yamburara Alto, located on the eastern side of the valley, land was priced at $15/m², and in Cucanamá and Santorun, on the western side, $11/m². Generally, the further away a property is from town, the lower the price; however, within this general trend, land with a view (located higher up on the mountains) is typically preferred by foreigners and therefore commands a higher price.[28] For example, Yamburara Alto and Cucanamá and Santorun are roughly the same distance from town, but Yamburara Alto is

[28] Obviously, land without services, such as road access, water, or electricity, is also offered at a cheaper price than land without such services.

generally preferred because of its scenery. There is more vegetation in Yamburara Alto, it offers good views, and the attractive Yambala River passes through the area, bringing water from Podocarpus National Park (see Figure 9 for a map of the area, showing the locations mentioned).

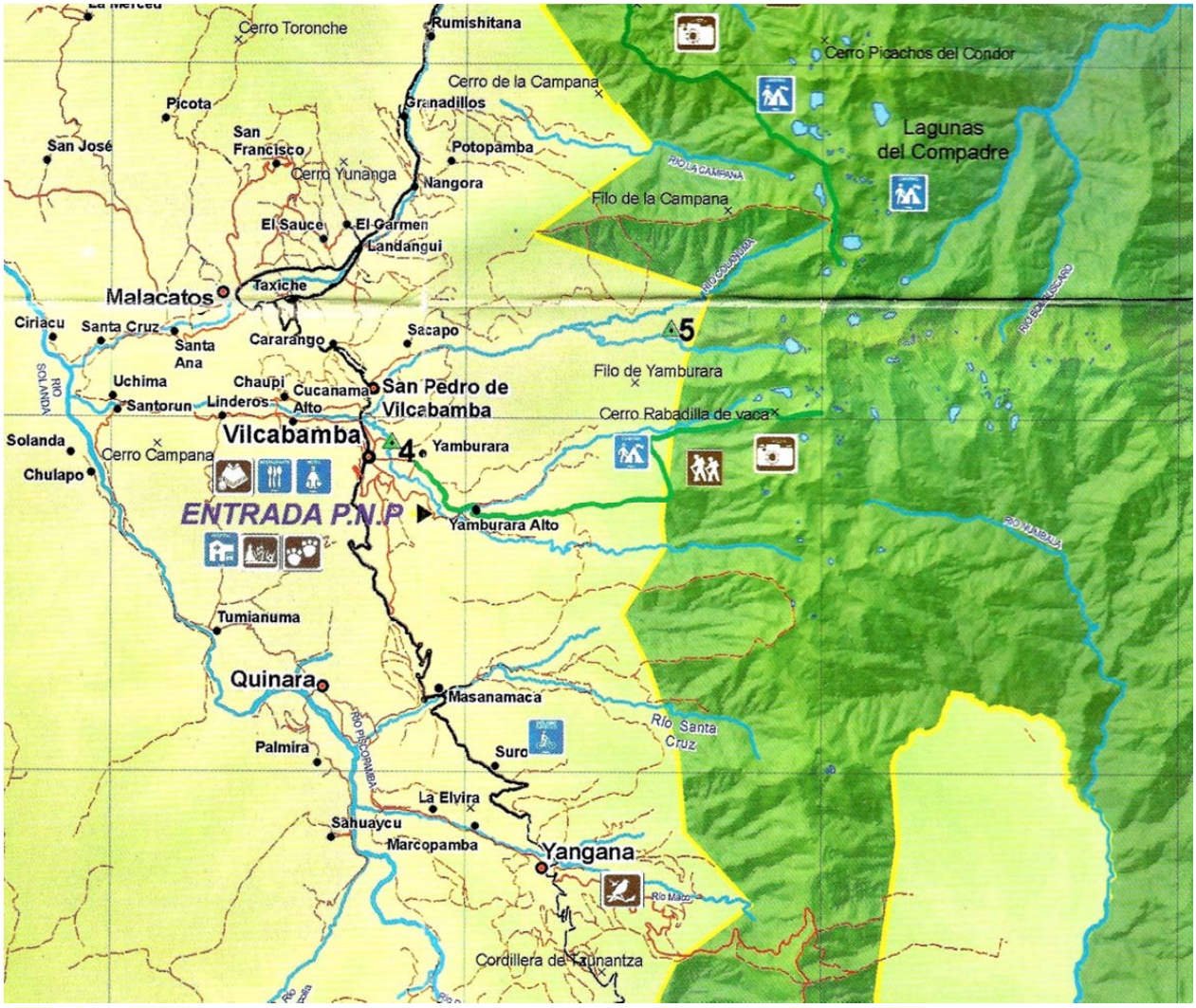

Figure 9. Map of the Vilcabamba region, including locations mentioned in the text. Podocarpus National Park (PNP) is represented by the dark green area.

It should be pointed out that although the price of land in the valley has escalated considerably, and this is mainly blamed on foreigners, in other areas of Ecuador land prices are also rising significantly. Other factors to consider in regard to this phenomenon include macroeconomic factors such as dollarization as well as migration. For instance, according to Gondard (2004:106), those who have not migrated do not have access to land. He uses an example from Cañar province, north of Azuay, in which the price of a hectare of ground values $10,000 or more, and asserts that agriculture cannot be profitable on a piece of land so expensive. Similarly, Pribilsky discusses how, despite the fact that the flow of remittances into Azuay and Cañar provinces has done little to provide incentives to improve and develop agriculture, land has become a highly valued commodity, with migrants owning on average twice as much land as non-migrant households (2009). [See the next chapter for more information on real estate in Vilcabamba.]

3.3 CLIMATE CHANGE AND AGROCHEMICALS

Questions about whether or why the climate has changed brought forth interesting points about the nexus of humans, culture change, nature, land, subsistence, food, and development. For example, when asked *¿Por qué cree Ud. que ha cambiado [el clima]?* (Why do you think the climate has changed?), Hernán González stated: "*Básicamente por actividades humanos, por ejemplo la actividad industria y las comodidades que tenemos en esta vida, pero al costo de que. También por las pesticidas. Ese es uno de los grandes problemas que nosotros hemos tenido acá – sobre todo del desarrollo agrícola. En los años '50 empezó la revolución agrícola, con*

máquinas y sobre todo con los ag roquímicos y las pesticidas, y empezaron de establecerse los monocultivos. Enton ces, todos sabemos que cu ando hay u n monocultivo, las plagas son más. ...Entonces, dijeron, si tienes una plaga, aquí tienes este vene no, que no se llam aba veneno, mucho más se llamaba remedio la pesticida. (Basically because of human activities, for example industrial activity and the conveniences that we have, but at what cost? Also because of pesticides. That is one of the biggest problems that we have had here – in all of agricultural development. In the 1950s began the Green Revolution, with machines and above all with agrochemicals and pesticides, and they started to establish monocultures. Then, everyone knows that when there is monoculture, there are more plagues. So [those who were selling the agrochemicals] said, if you have pests, here is this poison, but instead of calling it a poison they more often called it a remedy.)"[29] In this particular quote, Hernán González, an agronomist who works at Colinas Verdes, specifically refers to the Green Revolution and the vision of development that it entailed. In this vision, typical of Euro-American developmentalism, the solution to problems is perceived in terms of technology and the capital that it requires.

Even though during the semi-structured interviews there was no specific question that mentioned agrochemicals, 67 percent of the interviewees talked about them at different points during the interviews. This demonstrates the salience and importance of the topic among valley residents, especially in relation to climate change and livelihoods. At first, it seemed like their mention must be an anomaly, or at least something that would be cited only by agriculturalists. However, over time and as the interviews proceeded, it was clear that it was a concern among many in the community, and I soon realized that it was indeed directly related to issues of development, livelihoods, and climate change. Through further investigation of the literature on

[29] For a similar account, see Campbell 2006:265.

pesticides and agricultural development, it became clear that in many ways, what my informants were saying was right. It was a cultural model that they had developed, and their explanations clearly fit into this model. Although in some cases some of their lines of reasoning did not include all of the intervening factors, their associations were often correct; in other words, they were at times right but not for the reasons that they thought (see Sections 3.3.2.1 and 6.1.3).

According to various research participants, salesmen for the agrochemical companies actually went into the countryside to sell their products, and to show through example what can be produced through the use of high-yielding, modern seed varieties along with their accompanying chemicals – the *paquete tecnológico* (technological packet) – and people got very excited. "*No es ético, es económico* (It's not ethical, it's economical)," quipped one agriculturalist (see also Campbell 2006). People were amazed by the size, quantity, and flawless appearance of the crops that were produced. At the time, it seemed like a "silver bullet" – the answer to their problems. However, since then, various problems associated with their use have become more evident:

1. this technological packet, as it is called, requires that one spend more, because in addition to the high-yielding or genetically-engineered seeds, one also has to purchase synthetic fossil-fuel-based fertilizers and pesticides, without which they will not grow;
2. these seeds may contaminate other seeds (for example, when they travel with the wind, they can impact traditional varieties);
3. they require a lot of water;
4. they are more vulnerable to pests and disease than locally adapted varieties;

5. unlike traditional seeds, these seeds cannot be saved and planted again; instead, for the following planting, new seeds have to be purchased, along with their respective pesticides;
6. the following year, more of the agrochemical has to be applied for the same effect, or else a stronger one has to be used (which is due in part to the adaptation of the pests to the chemicals);
7. once agrochemicals are used, one has to continue using them, and the soil loses even beneficial insects and nutrients;
8. the associated practice of planting large stands of one crop (monoculture) produces even more plagues, since they are not minimized by the more traditional and ecologically beneficial practice of planting a variety of crops together.

People complain that they were never warned about all of the problems associated with the use of agrochemicals, even when they went to the local stores to buy it. For the most part, pesticides are supplied without accompanying technological support. At one point, the agrochemical companies were advertising on the radio (Ecuasur and Radio Cariamanga), claiming that the pesticides only kill the bad bugs, not the good ones. This is of course not true: Pesticides do cause the destruction of nontarget populations. Also, in Ecuador, as in other parts of the developing world, several agrochemicals are sold that are prohibited elsewhere, such as DDT. Frequently used pesticides in Ecuador include carbofuran, methamidophos, and dithiocarbamate (Crissman, et al. 1998).

According to Yapa (1993), when hybrids were first introduced, it was not known that they were vulnerable to a variety of pests and diseases. However, it was soon evident that genetically uniform varieties grown in monocultural stands were vulnerable to pests and

pathogens, a fact that was dramatically demonstrated in 1970 when some 15 percent of the U.S. corn crop was lost to leaf blight. The Irish potato famine of the mid-1800s is an example of how a lack of biodiversity in crop systems can result in enormous losses to both human lives and agricultural production (Fraser 2003; Veteto and Skarbø 2009).

It is now known that traditional varieties, also known as local varieties or landraces, are much more suited to local ecological and climatic conditions, and therefore more resistant to pests and diseases.[30] Pests that were previously of minor importance can become much more of a menace to introduced varieties. However, to complicate the problem, intensive monocropping of genetically uniform varieties has made production more susceptible to environmental stresses and shocks, and crop diseases encouraged by the practice of monoculture have actually been aggravated by pesticide use (Conway and Barbier 1990; Yapa 1993). One field consultant stated philosophically: "*Los químicos y la tecnología distorsionan mucho*" (Chemicals and technology distort a lot of things).

The indiscriminate and widespread use of pesticides destroys the pests' natural enemies, while the pests themselves genetically evolve into more pesticide-resistant forms, which in turn necessitates the use of new and more powerful pesticides. Some Vilcabambeños refer to this technological packet as a trap, because it becomes a vicious circle. The increasing dependence on pesticides has been described as the "pesticide treadmill" (Nicholls and Altieri 1997; Yapa 1993). Likewise, the long-term use of chemical fertilizer, accompanied by a reduced use of organic matter, has adversely affected soil quality and has increased soil erosion (Montgomery 2007a; National Research Council 1989; Pimentel 2006). To counteract the consequent decline

[30] Many of the problems associated with the nexus of agrochemicals, agriculture, and climate change are eloquently demonstrated in a film entitled *Big Spuds, Little Spuds* (Corves and Castiñeira 1999), which compares potato growing in Idaho and Peru.

in yields, farmers are forced to apply more synthetic fertilizer, in what Merrill has called the "vicious cycle of chemical agriculture" (1976). In short, it is becoming more and more difficult to keep producing the same amount, let alone increase crop yields; more and more agrochemicals are needed to produce the same effect.

The exaggerated use of pesticides is partly to blame; several Ecuadorians referred to the fact that some people think that to use more is better or that a stronger chemical will assure the desired result. One shop owner who sells agrochemicals stated that "*El agricultor maneja [los agroquímicos] en una forma indi scriminada y exagerada. No están utilizados para manejarlo bien y éste es el problem a. Hay una resistencia del bicho en la zona.* (The farmer manages the agrochemicals in an indiscriminate and exaggerated form. They aren't utilized or managed well and this is the problem. There is a resistance of the insects in the area.)"

The varied effects of pesticides are too complicated to pursue further in this work, but suffice it to say that the use of agrochemicals does actually lead to more pests and disease problems. The use of chemical fertilizers and sprays makes plants more attractive and more vulnerable not only to insects, but also to bacteria, fungi and viruses, all of which is exacerbated by the practice of monocropping (Chaboussou 2005).

3.3.1 Human and Environmental Health

Human health problems associated with agrochemicals include genetic mutations, cancer, skin problems, neurological damage (Proaño and Sherwood 2006), and impairment of the nervous system (Cole, et al. 1998; Hawkes and Ruel 2006).[31] Many people are sick from coming into

[31] According to the IAASTD, "the main chronic effects caused by chemical pesticides include

contact with the chemicals or from using them without the appropriate gear, such as masks and gloves. There were several deaths attributed to the use of pesticides during my fieldwork.[32] Eduardo Vargas said that "*Los químicos esterilizan la tierra y causan cáncers. Matan el hombre porque son venenos muy fuertes. Hay un químico se llama Arrasador. En verdad arrasa con todo. ¡Arrasa con las personas! Es un problema sumamente serio* (The chemicals sterilize the ground and cause cancer. They kill people because they're very strong poisons. There is a chemical called Arrasador (destroyer). In truth it destroys everything; it destroys people! It's an extremely serious problem)." Another interviewee stated that "*El mismo químico atrae más plagas. Es solo por el momento. El otro año tiene que fumigar con un químico más fuerte. Las plagas vienen más resistentes. Es sólo un negoc io para [las compañias de] los químicos. Los químicos están intoxicando la gente, lentamente hace daño.* (The chemical itself attracts more plagues. It's only for the moment. The next year you have to fumigate with a stronger chemical. The plagues become more resistant. It's just a business for the chemical companies. The chemicals are poisoning people, slowly they cause damage)."[33]

Other human health impacts include the fact that family subsistence has come to depend upon a salary and the acquisition of inexpensive commercialized food (Suárez-Torres, et al. 1997). Much of this food is of little nutritional value, consisting of such items as rice, noodles,

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cerebral lesions and lesions of the nervous system in general, such as peripheral polyneuropathies and Parkinson's disease;… cardiovascular diseases; kidney and liver disorders; cancer;…genetic mutations; teratogenesis (congenital functional malformations or abnormalities);…endocrine or hormonal problems; reproductive problems (sterility, impotence, abortions, stillborn children, development problems in offspring);…and suppression of the immune system" (2009:61).

[32] Among potato growers in Carchi, in the north of Ecuador, pesticide poisoning is the second largest cause of death for men (19 percent) and fourth for women (13 percent) (Hawkes and Ruel 2006).

[33] According to the Millennium Ecosystem Assessment (2005), human and environmental health are also negatively impacted by the resulting loss of ecosystem services, including fresh water; food; timber, fiber, and fuel; biological products; nutrient and waste management., processing and detoxification (recycling and distribution of nutrients); regulation of infectious disease; cultural, spiritual, and recreational services; and climate regulation.

gelatin, and soda pop. "*Salchipapas*" (hot dogs with french fries) is a popular meal in the towns of the Vilcabamba valley, especially for kids. I was told by an informant that this, combined with the fact that fewer people are growing food, is the reason that my research is important: "*¡Porque no podemos comer billetes!*" (Because we can't eat dollars!). In other words, who is going to produce the food?

As stated previously, agrochemicals can be referred to as *veneno* (poison) or as a *remedio* (remedy). Although these two are clearly contradictory, this helps to explain the paradox involved in their use; agrochemicals can be referred to either way. They affect the health of both the land and the people of Vilcabamba, which is another contradiction, since the area is referred to as the Valley of Longevity and people often speak of the climate and the water as *saludable* (healthy). There is also the widespread perception that clear water is clean water, and that nice looking vegetables are healthy and better for you. This perception is emblematic of the cosmetic approach of the Productionist paradigm that has been prevalent during the last half-century. The Productionist paradigm also focuses on quantity over quality, homogeneous products, and low cost of the final product.

The Productionist paradigm is embodied in agricultural modernization programs in various countries. As discussed in the last chapter, in Ecuador, this modernization was promoted through agrarian reform, which consisted of two major state-led activities: Land reform and dissemination of new agricultural technology. The latter was deployed top-down through development programs and consisted of high-yielding, modern seed varieties and the agrochemicals that they require. These modern varieties (MVs), as they are called, produce a larger quantity of one product that matures at one time and can thus be marketed more efficiently. As discussed in the next section, the technology has been promoted through

subsidies and economic incentives such as easy access to low-interest and no-interest loans in order to help ensure adoption by farmers. Later in this dissertation we will further examine the implications of this for a broader and more integrated conception of development and of sustainability.

3.3.2 Other Effects of Agricultural Modernization

A case study from the Vilcabamba valley illustrates this phenomenon. The *Asociación de Productores Autónomos de Fréjol para Semilla* (APAFS – Association of Autonomous Bean Seed Producers) is a cooperative formed through the *Proyecto Regional de Fréjol para la Zona Andina* (PROFRIZA – Regional Bean Project for the Andean Zone) with the intention of reproducing modern bean seeds that are disease-free and pest-resistant (Abbott 2001, 2005; 2002). Abbott found that the perks offered by the agricultural extension program, which included free seed, chemicals, and access to interest-free loans, was extremely appealing to the farmers involved, who otherwise lacked resources (2005). However, although it was not a goal of PROFRIZA to replace landrace varieties[34] with modern ones, this was in fact the outcome. In effect, through the interaction among nationally regulated socioeconomic factors, the conservation of locally adapted bean varieties, and therefore of biodiversity, was actually discouraged.

Efforts to generate cash income led farmers to state-led agricultural extension programs that favor and emphasize modern crop varieties. Abbott found that those who are most in need of cash income are those who are indebted as a result of land purchases. Interestingly, those with

[34] Sauer defines landraces as "crop varieties resulting from local folk domestication and stewardship" (Abbott 2005:198).

more secure land ownership were more likely to grow landrace varieties, which farmers describe using a host of favorable attributes, including healthful, flavorful, inexpensive, less taxing on soil health, and adapted to local ecological conditions. Subsistence producers have not abandoned landrace varieties as extensively as those who produce for the market. However, neither farmers nor extension agents recognize the economic value of landrace varieties, even though these varieties are sold in the city of Loja for two to three times the price of modern varieties. Thus, Abbott asserts that there is a clear contradiction between the acknowledged social values for landraces and producer assertions of their poor marketability (2005:210), and concludes that economies of scale may be the reason that markets have not translated consumer demand into producer profits. He asserts that if locally produced, socially valued landraces were to become available in quantity, larger markets may be able to support their sustainable production. I would add that these varieties could also be sold in smaller quantities in local markets.

According to my research, in addition to the need for cash income and the dictates of the market, there are also other related reasons why some farmers do not favor growing landraces and instead use modern varieties. They say that "*ya somos más modernos"* (now we're more modern), which indicates both their pride in being modern along with what some have termed "technological rationality" (Carolan 2006) – their faith in technology, experts, and scientific authority. Agronomists, engineers, and technicians are plentiful in Ecuador, and many farmers place great faith in their expertise and scientific backgrounds; according to Preston and Preston (1996), the general reverence of modernization is an Ecuadorian ideology. I will later argue that it is the training of these specialists, which stems from the development milieu in which they were trained, that is part of the problem. That farmers consider themselves more modern, combined with both the fact that many of them don't practice agriculture like they did before, if

at all, and the detrimental effects of migration and development on farmer knowledge transfer and attainment, only strengthens the tendency to move toward modern (also called conventional or industrial) agriculture.

The social theory of the Green Revolution came out of the work of modernization theorists and their associated ideas of progress. The modernization of agriculture spawned a whole new vocabulary that included terms and expressions such as "progressive farmers" and "betting on the fittest" (Yapa 1993). Industrial farmers with access to large areas of irrigated land who could purchase the expensive inputs were culturally and linguistically transformed into "progressive farmers." Poor farmers who could not afford to respond and intelligent farmers who actively rejected the new seeds for ecological or other reasons were transformed into "backward farmers" or into "laggards." As an example of this sort of thinking, Lakshman Yapa, who helped to introduce hybrid maize in Karnataka, India, states that

> Since hybrid maize gave yields superior to those of traditional varieties, we assumed that the adoption of the new was rational and, conversely, that nonadoption meant a lack of awareness or resistance to new ideas. Despite visible evidence to the contrary, we also proceeded with the common assumption that potential adopters belong to a relatively homogeneous class of farmers. (Yapa 1993:259)

This approach is emblematic of the top-down, reductionist, oversimplified, blueprint model, transfer of technology approach to development characteristic of that time, and which to an extent continues today.

3.3.2.1 Effects on farmer knowledge

Unfortunately, agricultural modernization itself has also contributed to the underdevelopment of or lack of transfer of knowledge concerning more sustainable methods of agriculture. For example, the practice of applying synthetic nitrogen fertilizer, which is

industrially produced, fossil-fuel dependent, and often subsidized (which makes it cheaper for farmers to purchase), has served to both reduce the supply of naturally available organic nitrogen as well as to underdevelop knowledge of these natural sources of nitrogen. Biological sources of nitrogen result from adding agricultural and plant remains back into the soil, including animal manure. Other sources of nitrogen are supplied by cultural methods which alter the environment by making it less suitable for pests and serve to enhance production as well. Examples of these methods include crop rotation, multiple cropping, companion planting, and incorporating nitrogen-rich legumes (Gliessman 2007; Yapa 1993). A classic example is the Native American tradition of planting corn, beans, and squash (the Three Sisters) together, a form of companion planting which serves a variety of important functions for plant, soil, and ecological health and functioning.

Sir Albert Howard, famous for his book *An Agricultural Testament* (1973[1940]), was one of the first[35] to articulate the biological principles of food production. He was highly trained in natural science, but after moving to India to work for the Institute for Plant Industry, he spent considerable time there with peasant farmers, and found that he also learned a great deal from them and from being in the field. This influenced him to reorient his science to accommodate their knowledge, time-tested field results, and the constraints of markets. In essence, he realized the importance of producing results that they could incorporate under *their* conditions and for *their* markets (Jamison and Perkins 2010). Unfortunately this sort of give-and-take interaction is not the norm among technicians, development workers, and farmers.

Holt-Giménez et al. (2006) state that the use of pesticides in agriculture has increased precipitously worldwide in the last 50 years; current usage amounts to more than 2.56 billion

[35] After Franklin King, who published *Farmers of Forty Centuries: or Permanent Agriculture in China, Korea and Japan* (1973[1911]).

kg/yr. However, the increase in pest outbreaks has amplified just as rapidly. It is a similar situation with weeds: Studies show that the application of herbicides to weeds is becoming less effective, while the weeds themselves are spreading and becoming more resistant (e.g., Weed Science 59(3)).

Despite the assertion of the agrochemical companies that at one point claimed that the pesticides only kill the bad bugs,

> Pesticides cause the large-scale destruction of nontarget populations, the genetic evolution of pesticide-resistant organisms, the contamination of water and agricultural produce, the reduction of soil organisms that maintain the quality of humus in the soil; moreover, they pose health risks to agricultural workers. Apart from what are very serious environmental hazards, chemicals are also expensive, their use has increased the dependence of Third World farmers on international capital, and their continued use over time has increased the demand for these products. (Yapa 1993:263)

The evidence is therefore overwhelming that the agriculturalists with whom I worked knew what they were talking about when they claimed that there are more pests and plagues because of monoculture, that the soil loses its fertility through the use of agrochemicals, that the land won't produce anymore, that they invest in seeds, fertilizers, herbicides, and pesticides and lose money, and that you have to keep using use more and more chemicals – the "pesticide treadmill" and the "vicious cycle of chemical agriculture" that was discussed earlier. Some also claimed that the agrochemicals dry the soil, but what in fact dries the soil is the whole process of modern agriculture, including the modern varieties, agrochemicals, and the resulting reduction in ecosystem services (see note 33 for a description of ecosystem services).

In addition to the near complete change in the way agriculture is conducted and the lack of transfer of indigenous knowledge, there are other ways that agricultural modernization has contributed to the underdevelopment of knowledge concerning more sustainable methods of agriculture. The intense focus on the research, development, and marketing of agrochemicals

and hybrid seeds has had the effect of curbing the advancement of knowledge of alternative and traditional practices. Indeed, of all the techniques mentioned, those that have had the most support are the chemical ones, because they create the most exchange value (Yapa 1993).[36] Since many alternative and traditional methods work with natural cycles in the ecosystem by taking advantage of biological processes, they represent little cost to the user, although their development can be expensive because more sophisticated biocontrol requires much skill and funds. In addition, the process of teaching farmers about these alternative techniques is information-intensive relative to conventional production, and requires well-trained individuals who are proactive and holistic in their management strategies (Melone 2006).

The process of implementing conventional agriculture, on the other hand, has been quite different:

> From rich-country professionals and urban-based professionals in the third world countries right down to the lowliest extension workers it is a common assumption that the modern scientific knowledge of the centre is sophisticated, advanced and valid, and conversely, that whatever rural people may know will be unsystematic, imprecise, superficial and often plain wrong. Development then entails disseminating this modern, scientific and sophisticated knowledge to inform and uplift the rural masses. Knowledge flows in one direction only - downwards - from those who are strong, educated and enlightened, towards those who are weak, ignorant and in darkness. (Chambers 1983:76; cited in Yapa 1993)

The traditional way of farming in the valley includes the *huerto*, a mixed garden in which there are multiple strata of different trees and plants (Aird, et al. 2005; Almeida Durán and

[36] Adding even further support to this assertion, and to the arguments against the use and maintenance of MVs in general, Yapa (1993:270) states that "The long-run maintenance of the quality of improved seeds involves a continuous process of research in crop breeding, involving use of germplasm from wild ancestors of the plants or from traditionally grown varieties. The rapid diffusion of improved varieties causes the disappearance of traditional varieties [read: loss of biodiversity], thus necessitating the maintenance of germplasm in a worldwide system of gene banks. Among the problems with that strategy are incomplete collections, isolation from evolutionary processes, and high costs of administering the system."

Centro Interamericano de Artesanías y Artes Populares 1999; Gondard 2004). The *huerto* provides a range of benefits. The diversity of organisms provides distinct advantages for individual components and for the system as a whole; it allows for a range of life forms, both beneficial and not beneficial, to coexist and self-regulate and control. This is the pantry of the family, containing such plants as yucca, sugar cane, corn, vegetable plants, bananas, coffee, medicinal and foliage plants, and avocado, guava, and citrus trees. Other benefits of the *huerto* include shade (e.g., for coffee), autoregulation, enriched soil, beneficial insects, and fodder for feeding animals (See Table 4 for a listing of foods commonly grown in Vilcabamba.) The *huerto* is a form of mixed cropping, or polyculture. Worldwide, many combinations of annuals, perennials, herbaceous, and arboreal species have been documented ethnographically, as has the folk knowledge of what crops make good companions for others, according to local ecology (Pearsall 2004).

In the Vilcabamba valley, this way of farming has declined with the focus on growing foods for the market, although many families still maintain *huertos* for household use. Hernán states that "*La agricultura tradicional de la gente es un freno a ese paquete tecnológico. La gente ya tiene demasiada fe en el paquete tecnológico. También ellos piensan que los productos lindos son sanos.* (The traditional agriculture of the people is a check on this technological packet. The people have too much faith in it. They also think that pretty vegetables are healthy vegetables)." This latter statement refers to the common perception that vegetables and fruits grown with agrochemicals are healthier because they are healthier *looking* – they don't contain bugs or cosmetic flaws.

Table 4. A list of the food items most commonly grown in Vilcabamba

FRUITS	pomarrosa	MISCELLANEOUS
papaya		coffee
lemons (different varieties)	VEGETABLES	sugar cane
guava	corn (different varieties)	tobacco
grapefruit	beans (several varieties)	medicinal plants
oranges (different varieties)	zambo[37]	forage crops
avocadoes	carrots (white and orange)	
chirimoya (custard apples)	yucca	ANIMALS
cantaloupe	beets	guinea pigs
watermelon	garlic	cattle
banana	onion	hogs
blackberries	cauliflower	goats
vine & tree tomatoes	green peppers	chickens (eggs)
granadilla	spinach	
mangoes	squash	
passion fruit	lettuce	

In a country where so much of the population has depended on agriculture, either for household consumption or for commercial production, and considering the importance of agriculture as a poverty reduction tool, it is in some ways surprising that there has not been more

[37] A kind of squash, *Cucurbita ficifolia*, or fig-leaf gourd.

attention devoted to this problem. This is a general trend in less developed countries, where both domestic and international policy environments have displayed an urban bias. There has also been an increasing neglect of agriculture in both development theory and economic research, despite the strong case that's been made for agriculture-led development strategies (Bezemer and Headey 2006, 2008; Thompson, et al. 2007). Bezemer and Headey (2006) refer to this importance, but neglect, of agriculture as the Agricultural Paradox, and attribute this to the shift in development paradigms since 1980. The focus has instead been on large-scale producers, fomenting industrialization, and the needs of the urban sector. As a result, many *campesinos* have left farming to search for wage labor, which often requires either seasonal or permanent migration. With agricultural modernization, however, there is not a large need for laborers, and the pay is minimal. Thus, large-scale migration to urban areas, as well as a marked increase in international migration, has been a result. Forestalling outmigration has become an important goal in many communities, including Vilcabamba.

This section has demonstrated how the use of agrochemicals and other facets of modern agriculture have contributed to both land degradation and climate change, two principal reasons why *campesinos* have left farming and are in search of other livelihood strategies. The impact of these two interrelated processes should not be underestimated. Climate change is in part due to human influence, and human influences are, in turn, ultimately affected by development or the lack thereof.

Referring to the current aspirations of the Alliance for a Green Revolution in Africa (AGRA), Holt-Giménez et al. (2006:4) state that:

> Without addressing structural inequities in the market and political systems, approaches relying on high input technologies fail. The growing hunger in Africa is largely due to the increased impoverishment of the very rural peoples who once grew food, but who have now left farming. Today's African farmers could easily

> produce far more food than they do, but they don't because they cannot get credit to cover production costs, nor can they find buyers or obtain fair prices to give them a minimal profit margin. Under such circumstances, what difference will a new "technology package" make? Without addressing the causes of why African farmers leave farming—or why they under-produce—AGRA will have little impact on this trend.

In fact, this exact same situation exists in Ecuador. Many people have left farming and for some of the very same reasons, including the fact that they cannot get credit, nor find buyers, nor gain fair prices for their products. This research has determined that they have also left farming for the following additional historical, political-economic, cultural, and ecological reasons: Climate change; land degradation; migration; sale of their land; jobs in construction and the service industry; dollarization; and lack of work force, in the sense that farmers have a hard time finding people to work in their fields, especially when they can earn more money elsewhere. These factors have a negative impact on food security and livelihoods, and are symptoms and consequences of the lack of adequate and appropriate development in Ecuador.

The policy-driven collapse of peasant agriculture in Ecuador has resulted from top-down development schemes and macroeconomic policies that have favored industry and commercial agriculture over rural development and small-scale agriculture in particular (Lefeber 2003; Martínez Valle 2003; North 2003). With AGRA, this type of development will likely continue in Africa:

> AGRA's 'alliance' does not allow peasant farmers to be the principal actors in agricultural improvement. The Rockefeller and Gates Foundations consulted with the world's largest seed and fertilizer companies, with big philanthropy, and with multilateral development agencies, but have yet to let peasant farmer organizations give their views on the kind of agricultural development they believe will most benefit them. (Holt-Giménez et al. 2006:7-8)

With this development model, agricultural producers have lost autonomy and have come to depend on an economic and technological complex that is out of their control (Suárez-Torres,

et al. 1997). They are locked into the cycle of using these costly, unsustainable, exogenous inputs without being educated or trained on how to use them, and they often don't know what the alternatives are (cf. Campbell 2006; Hawkes and Ruel 2006).

4.0 DEVELOPMENT DIFFERENTIALS: OLD-TIMERS, NEWCOMERS, AND THEIR INFLUENCES ON DEVELOPMENT AND SOCIAL RELATIONS IN VILCABAMBA

In the Vilcabamba valley, the scales of consciousness of the different groups of people vary. This has an impact on their respective worldviews and on the interaction between them. In general, the immigrants to Vilcabamba, as well as Ecuadorians who have emigrated and returned, tend to have more of a global view, able to see more of how the world is changing and how everything is interconnected. Referring to Ecuadorian emigrants who have returned, Toledo Cocíos (2000:24) states that "*De estos emigrantes algunos han hecho fortuna y otros han retornado desilusionados sin saber a ciencia cierta cuál es el verdadero origen de su fortuna y si en él impera lo físico o lo intelectual*. (Of these emigrants some have made money and others have returned disillusioned, without knowing for sure what is the true origin of their fortune, whether it can be found in the physical or in the intellectual.)"

This experience can lead to more open-mindedness but also to oversimplified views of the world. However, there are important differences between the two groups of immigrants, distinguished generally by those who arrived earlier to the valley compared to those who arrived later. They react to the forces of development in very different ways. Therefore, the aim of comparing and contrasting these two groups of immigrants, along with their respective interactions with autochthonous individuals, is to highlight what I call the "development

differentials" of the two groups; in other words, to examine their effects on sociocultural relations and developmental trends in the area.

Old-timers – going with the line drawn by local Ecuadorians, immigrants who arrived before 1995 (to be discussed in Section 4.3.4) – serve as a kind of bridge between the newer arrivals and the community. They are more likely to understand the views of both, and some become very defensive of Ecuadorians, their lifeways, and sympathetic to their predicaments. They can appreciate new ideas, but at the same time they have a tendency to want to reexamine old ways of doing things in Vilcabamba for their present utility, having the attitude that, rather than 'throwing the baby out with the bathwater,' perhaps some of the more traditional ways of thinking and doing things are useful and valuable. What would be considered in some circles as "backward", they might consider "appropriate" to the local context or to local realities. In some cases, this can be contrasted with some of the Ecuadorians who idealize being 'modern.' Some have even been accused of being "more Ecuadorian than the Ecuadorians are."

Many of these long-termers came to Vilcabamba as part of the counterculture movement of the mid- to late-20th century. In essence, they rejected parts of their home cultures, such as industrialism, overconsumption, individualism, detachment, and narrow ideas of progress and religion. In some senses, then, they share some of the characteristics of the more recent arrivals, but yet they differ in important ways. In many respects, for instance, they reject Euro-American developmentalism and even environmentalism. These expatriates resemble the back-to-the-landers in the United States: They gave up the comforts and conveniences of modern-day life in order to search for something they felt was missing or for alternative ways of being in the world. In many cases, this meant a decrease in their material standard of living. Others intended to

simply pass through or spend some time in the valley but instead of continuing their travels through Ecuador or South America or returning home, they decided to stay.

In many cases, these foreigners became well-integrated with Ecuadorians: They learned Spanish and other aspects of Ecuadorian culture; they became involved in the community; they adopted children and married Ecuadorians; they exchanged ideas and knowledge with them; some became Ecuadorian citizens. In essence, these long-term residents blur the lines between Western and indigenous.

More recent arrivals to the valley are more stereotypically Western. Generally, they form part of the movement that wishes to retire outside their home country, in a cheap but beautiful place, and hope to transplant themselves from one place to another as seamlessly as possible. They search for enclaves of "like-minded individuals" who speak a common language (usually English). Many strive to live like they did before, or better, with all of the conveniences and comforts of home, which may include a large house, a pool, a guest house, and the employment of an Ecuadorian maid and a caretaker for the house and property. In essence, one's money goes farther in Ecuador than in a more developed nation. To them, the "forward march of progress" is inevitable, and their conscience is eased by, for example, knowing that part of the fee that they pay monthly is given to a local Ecuadorian community, or they may donate money to send an Ecuadorian child to school, whom they may or may not have met face to face. They are worldly, yet insular. They are aware, yet not aware.

These newer immigrants are inclined to think of the world in terms of how it is globalizing, especially in the sense that people are moving all over the world, in their view bringing about homogenization and political-economic integration. They often assume that they are the enlightened ones and/or that everyone wants to be like them. In general they have a

cosmopolitan demeanor in the sense that they think of themselves as sophisticated citizens of the world. This internationalism can turn into paternalism. Some seem to fully believe that their impact is purely a good one or that it is neutral; many don't realize how their effect matters or makes a difference, how it's relevant, or why it's important.

The present trend, to put it succinctly, is toward *real estate* development, which includes the involvement of venture capitalists. As one of my field consultants pointed out, "There are small houses with big families and big houses with practically no one living in them" and that "The area is becoming gringo-gentrified, or gentry from Loja."[38] The small houses with big families by and large belong to Ecuadorians, while the large houses with practically no one living in them usually belong to immigrants.

4.1 LONG-TERM IMMIGRANTS

4.1.1 Joy and Curtis Hofmann

Joy Horton moved to Ecuador to join her mother in 1974. She is a feisty, light-skinned redhead but has been described by both gringos and Ecuadorians as "more Ecuadorian than the Ecuadorians are." She has raised her family in Ecuador, and she has been so much a part of the

[38] A *gringo* is a foreigner, and generally refers to a person from a non-Spanish speaking country. In Vilcabamba, the term usually signifies a person from outside of Ecuador. The word is sometimes used in a disparaging fashion: Reference.com states that "The usages of gringo sometimes are derogatory, paternalistic, and condescendingly endearing, especially when a foreigner condescends to the people and culture he or she is visiting."

community of San Pedro de Vilcabamba[39] that perhaps she *should* be considered an Ecuadorian. She is fiercely defensive of the residents of San Pedro, and is not fond of being referred to as an immigrant.

One subject that has come up repeatedly in conversations with Joy is the issue of paternalism. She states that it is difficult to have equal relationships with people in the area, and believes that this is due to the fact that hierarchies have been such a prominent facet of life in the area for so long, going back not only to Spanish but to Inca rule. Local people tend to want to put the gringo in a leadership position. Even if they are really good at something, she says, they want to take a back seat to someone that they feel is or should be in charge. They seem to want it that way, and they want to be told that they have done a "good job." This, in her opinion, is a remnant of the relationship between the *hacendado* (hacienda owner) or *patrón* (employer) and the *huasipungueros* (those who worked the land for the *hacendados*) under their control. I would add, too, that this tendency is reinforced by the fact that Ecuador is a highly stratified society, and this ordering is symbolic as well as socioeconomic and political. Unfortunately, the simple fact that Joy is white, not to mention the fact that she is a gringa, in many cases gives her more clout than someone who is not. The issue of paternalism continues to permeate life in Ecuador, as the government and various development agencies and projects often operate in a paternalistic manner, and I will argue that this is part of the reason that some projects fail.

While talking with the president of *Aliagro* (which stands for *Alianza de Agricultores Orgánicos*, the Alliance of Organic Agriculturalists), I asked him why the organization was not currently meeting or functioning. Interestingly, the reason he gave me was because Joy, who is

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[39] Hereafter referred to as San Pedro. San Pedro de Vilcabamba is a village located just over a mile from the town of Vilcabamba, with a population of 1,268 (Instituto Nacional de Estadística y Censos 2005).

their secretary, wasn't around at the time (she was in the U.S.). Clearly an organization involving 35 individuals can function without one of them being present, but this is an example of what she was referring to when she said that they look to her for guidance and feel that they cannot (or should not) act when she is not there.

Joy may occupy a liminal position in the social life of the valley. In other words, she may be in an ambiguous position between two different states: She may be considered neither gringa nor Ecuadorian. She has often reiterated the statement that "you can't be a prophet in your own pueblo," referring to the fact that she has had one idea or another that would never take hold, but a stranger might come in with the same suggestion and be able to achieve positive action.

Joy is very interested in fruit and vegetable crops, trees and other plants, and has planted different varieties at her home in San Pedro and in *El Bosque* (the Forest)[40], her family's 2,123-hectare (5,246-acre) property that contains the sources of water for the Uchima River and adjoins Podocarpus National Park. She works with these plants not only for her own benefit, but in the interest of the other residents of San Pedro, who could become interested in utilizing some of these plants.

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[40] "Hacienda El Bosque," as it was called previously, had been somewhat abandoned by its owner, an aging lawyer. This lawyer offered an American couple a very good deal to buy the hacienda. This couple had sold a small juice company in the U.S. and wanted to buy land with a secure water source, but since they didn't want to put their entire nest egg into the land, they included four other buyers, including Joy and her mother Bee. The couple paid the down payment and the other buyers had 3 years to pay the rest. At the time, Bee and Joy were teachers at the university, and Joy had sold 49,000 mango seeds to a nursery in the states to complete her part. That was in 1976, and she and Curtis married in 1980. Later, Joy's brother bought the shares of two of the owners, and Joy inherited two. Technically, then, she and Curtis own three shares.

In 1993 *El Bosque* was designated as a protected reserve and is part of the *Red de Bosques Privados del Sur del Ecuador* (Network of Private Reserves in Southern Ecuador – BOPRISUR).

When asked about how she would classify her occupation, she states that she is a *promotor comunitario*, a community promoter or developer. Joy and her husband Curtis, along with seven other individuals from San Pedro, founded the *Fundación para Conservación y Desarrollo Colinas Verdes* (Foundation for Conservation and Development Verdant Ranges) (see Section 5.1.2.2 for more information). When talking with Joy about how everything has worked out, she states that "sometimes we are doing what we are doing or are where we are not because of any grand plan or strategy but rather from a series of many very small and sometimes seemingly insignificant events and circumstances." This is the way things have often progressed in Vilcabamba: With people making what might appear to be small differences or steps, but they all add up. Some of this involves simply taking advantage of opportunities as they arise. This was even the case when *Colinas Verdes* was founded. This is how she describes it:

> It all started when my brother and his Dutchborn Canadian wife came down to visit us. He brought a VCR home video of the kiddies and in those days, 1990ish, we didn't have a VCR (they were rare in Vilcabamba) so we went to the Hostal Madre Tierra video room. A Dutch girl, Dr. Toot Oostveen, was in the video room to see a movie but kindly let us put our video first. She watched and recognized Dutch being spoken in the background which was the mum of my sister-in-law. So Toot and my sister-in-law started to talk and made friends. Turns out that Toot was a specialist in natural park management. She visited our property *El Bosque* and said we really should have a management plan for our property and one way to do it would be for a student to do it as a thesis project. She said she'd post a note on the university bulletin board in Wageningen when she returned to Holland in 6 months. We figured she'd forget. She didn't.
>
> A Wageningen biology student, Wil Panman, saw the notice and proposed this project to us and to his professors: "Management Plan of *El Bosque* Reserve Based on Habitat Requirements of the Spectacled Bear," 1992.
>
> He recommended that we get the community involved in protection to guarantee its sustainability, and also that we form a legal organization so other students could continue to do studies because it was very hard to have the professors approve projects with a "Hofmann Family" but easier if linked to a foundation.

> A work friend of Wil's, Marc Scheppers and his wife Madelein Garretson, visited Vilcabamba while Wil was doing his fieldwork for his thesis. They visited *El Bosque* reserve and were inspired to do something.
>
> At that time there was only one functioning ecology ONG in Loja Province: *Gama*. It was doing a wretched environmental education program, preaching to the farmers about how bad they were for destroying nature in their farming practices, burning land to plant corn, etc. But *Gama* didn't offer any alternatives. "Hello. We are *Gama*. Birds are our friends...see my tee-shirt. You farmers are bad bad bad…goodbye."
>
> Marc, Wil, Madelein, and a couple of others formed our sister foundation in Holland, *Montañas Verdes*, while simultaneously Curtis and I and several local sympathizers and visionaries got together and formed *Fundación para Conservation y Desarrollo Colinas Verdes*.

According to Joy, the people that formed *Montañas Verdes* were in one way or another responsible for some of the early funding that *Colinas Verdes* received. Not only did they apply for and receive funding to directly contribute to the work of *Colinas Verdes*, but their affiliation with *Colinas Verdes* as their "technical advisors" gave more credibility to the efforts of *Colinas Verdes* itself. Although *Montañas Verdes* is now defunct, its sister organization is not.

The first major project that she, Curtis and other members of *Colinas Verdes* worked on was *Proyecto Toronche* (Toronche Project), a conservation and ecological agriculture drip irrigation project that benefitted 28 families. The project also involved planting 21 hectares (52 acres) of agroecological *huertos*, aspects of soil conservation, production of plants in a nursery, and capacitation in the form of learning how to manage natural resources, including the protection of water sources. The total project value was $156,000 financed by the European Community for three years, with a smaller two-year extension funded by a couple of Dutch organizations, ICCO (The Interchurch Organization for Development Co-operation) and SSR (Stiching Steun door Rabobanken). To this, Joy says "Not bad for a first project for greenhorns."

On the wall of *Colinas Verdes* is a plaque that reads: "*Proyecto Toronche "Proto". Las familias participantes del Proyecto Toronche "Proto" de la Parroquia San Pedro de Vilcabamba agradecen a la Fundación para Co nservación y Desarrollo Colinas V erdes por la ayuda brindada para la ejecución del proyecto de agr icultura ecológica Toronche "Proto", en especial al Sr. Curtis Hofmann, Director Ejecutivo de la misma.* (Project Toronche "Proto". The families who participated in the Project Toronche "Proto" of the parish of San Pedro de Vilcabamba wish to thank the Foundation for Conservation and Development Colinas Verdes for the help provided in the execution of the ecological agriculture project Toronche "Proto", especially Mr. Curtis Hofmann, the Executive Director [of Colinas Verdes])." This statement is followed by the names of 28 families who benefitted from this endeavor. (See Section 5.1.2.1 for more information on this project.)

Curtis describes how he was elected to the board of directors of the water committee in 1985, before *Colinas Verdes* was formed. He had lived in San Pedro for five years, and to be elected to this special group of people who were considered as town leaders was quite an honor as well as a tangible sign of his acceptance in the community. The water committee consists of five directors and five neighborhood representatives (one person from each of five neighborhoods who will represent their locality in the water committee, and who are responsible for keeping track of all the households in each that use water). The directors, on the other hand, manage the water system and set up directives for making improvements to it. This involves efforts to acquire government money so as to make these improvements as well as political leveraging in order to make things happen for the community.

Curtis' post in the directorship was as its secretary. Initially, he was given a ledger book, a box of receipts, and some money that had been paid by households in the community (each

family paid a small monthly charge to use the water system). However, the ledger book was disorganized: It was simply set up with one item on each line. In other words, one line would read "Segundo Guamán paid 20 sucres for the period July through October"; the following, "paid out 25 sucres for tubing"; and the next "Eduardo Lanche paid 10 sucres for August and September". In order to improve this system, Curtis began to build a database of households that used the system using an Apple 2C computer (which was later replaced by an Intel 386, to which the records were moved). He also began to sort through receipts, and asked each neighborhood representative to take the list of users for their locality and make sure it was complete and up to date. Ultimately, and significantly, this process led to more accountability and transparency, and thus, a stronger organization. It was a success both for the town and for Curtis personally. It allowed him to gain confidence: Not only was he able to serve the community, but he was able to do it in a way that they could appreciate. The residents of San Pedro now felt that the system was fair, and Curtis was reelected to that committee several times. The strengthening of the organization eventually helped them to secure a large grant from the government to install a large, complete water system.

While I was there doing fieldwork in 2006 and 2007, the infrastructure for this water project was being installed, and water was being piped from *El Bosque*[41] down to 350 families in Chaupi, San Pedro, and Cavianga. The work was being done through *mingas*[42] consisting of groups of workers from the areas that would benefit from the project, titled *El Proyecto Regional Chaupi*. The *mingas* required that each family that was to benefit from the piped water

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[41] In Figure 9, the number "5" represents *El Bosque*.

[42] *Minga* is a Quichua word meaning reciprocal work group. These were common in prehispanic times and in some forms still persist today. In Ecuador, a person may be required to contribute a certain number of days or hours to participate in, e.g., the building of a school or some other community project. Today, in some cases, individuals are permitted to pay someone else to perform their work for them.

contribute a certain number of hours to working on the project. If no one in the family was able to perform the work, the family was responsible for finding someone to hire to take their place. Especially during the first phases of the project, several hours of walking were required daily in order to reach the heights of the forest in order to do the work. San Pedro now has one of the best water systems in the south of Ecuador.

Colinas Verdes, *Proyecto Toronche*, the strengthening of the water committee, and the new water system in San Pedro clearly bring various benefits to the community, and are examples of ways that in their roles as community developers, Curtis and Joy have been successful.

Joy's mother, Bee, also still lives in San Pedro in a house close to Joy and Curtis. She raises dachshund dogs, and is the source of the various dachshunds that can be spotted in San Pedro and Vilcabamba. Now in her mid-80s, she intends to stay in the valley. Even though she has family in the States, including her son and grandchildren, she states that, every time she goes there to visit, she doesn't feel well or gets sick. Therefore, if her family wants to see her, she says, they can come to Ecuador.

It brings a smile to my face when Bee says that when she returns to the States, she gets sick. I have heard many people say that when they come to the states from Vilcabamba, they don't feel as well. It is an interesting phenomenon, especially considering the valley's reputation as the Valley of Longevity. The air feels crisp and clean, and some have said and continue to say that electromagnetic activity in the valley, including the prevalence of negative ions, contributes to well-being. Virtually everyone says that when they come to the States, they don't feel as well and that they gain weight. I, too, feel better when I am in Vilcabamba. Joy and I have had discussions about this and about the food that we eat here in the States. We believe that it's not

so much the fact that we eat *too much* food here, it is that they are higher-calorie and more processed foods, and that we get less exercise, but that it is also due to the fact that the food here contains more additives, including hormones, antibiotics, pesticides, etc.

Curtis and Joy have three children. One of these is an Ecuadorian child who was orphaned in infancy. Joy was breast-feeding her son at the time; she and Curtis took in the baby girl, and at times would breastfeed them both at the same time. Their children are now adults, and they returned with their father to the U.S. a few years ago so that they could attend college here. Curtis is working at a full-time job in order to help them to accomplish this. For now, Joy is moving back and forth between the two places: While in Ecuador, she works at *Colinas Verdes* and spends time with her mother and her extended Ecuadorian "family"; when in the U.S., she works and lives with her husband and children in California. Joy and Curtis plan to return to San Pedro to live when everyone finishes college and the student loans are paid off.

4.1.2 Martha Menefee and Glenn Clayton

Thirty-two years ago, Martha came to South America and planned to stay for six months. She has a bachelor's degree in education but has never taught school beyond the student teaching that she did in order to receive her degree. While she was in San Agustín, Colombia, she met Glenn, who had planned on staying in South America for two weeks. They liked San Agustín so much that Glenn was thinking about purchasing land there. However, they needed to leave Colombia for a time in order to settle visa issues, so they went to Quito, where Glenn bought a guitar that he liked, and then to Otavalo, where someone told them about Vilcabamba, "the place where the sun shines a lot." They went to Vilcabamba to visit and liked it so much that they went back to Colombia to retrieve their belongings. On their return to Vilcabamba, they moved into a house

in Yamburara[43] that Martha says was "more like a cave," which they lived in for six months. Glenn refers to Vilcabamba as "the perfect place between the desert and the tropics." They did not return to the States for eight years. Since then, there was a period of eighteen years where neither one of them came to the U.S.

Like Joy and Curtis, Martha and Glenn raised their family in Vilcabamba…and also adopted an Ecuadorian daughter, whose name is Marisol. Three of their children came to the U.S. to go to college and are still here, while Marisol is still living with her parents in Vilcabamba. They live frugally in Yamburara Alto[44] in a round house on the mountainside, which is covered with trees, mixed gardens, and paths. In order to get there from the nearest road, one has to cross the bridge over the river and walk along a pleasant, winding path up to the house. Martha and Glen do not own a vehicle, but Glen has a bicycle that he rides into town. Their household is laid-back, and it is enjoyable to be there. Martha owns chickens, goats (which she milks), and a parrot that flies around freely. He loves Martha and often perches on her shoulder.

Martha is probably the most admired gringa in the town of Vilcabamba. She is extraordinarily kind, patient, down-to-earth, and has a warm personality. She rents a room in town that she stays in one or two nights a week when she is delivering her goods in Vilcabamba and in Loja. She is an avid Ecuadorian soccer fan, and always invites interested friends to her house on the mountain or her little room in town to watch the games, depending on where she is at that day. The picture on the small television is not that good, but the important thing is to be able to see what you can and know what is going on in the game!

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[43] Yamburara, which in Quichua means "where the day first breaks," is located on the eastern side of the valley of Vilcabamba, and is therefore higher in altitude than the town itself.

[44] Alto means "high" in Spanish; Yamburara Alto is higher in altitude than Yamburara (i.e., Yamburara Bajo, or lower Yamburara).

Martha designates her occupation as an artisan; she and her Ecuadorian helpers make and sell fresh and natural food and herbs under the name *Productos Los Huilcos.* The *huilco* is an old sacred tree and is widely believed to be part of the reason for the name of Vilcabamba (see p. 6). Her products include green salt, packaged as *Sal con Vegetales* (salt with vegetables or plants), which is made with organic herbs and sesame salt. She began to make this product many years ago when she ran out of her supply of Spike, a well-known veggie salt. Some restaurants in Vilcabamba have the *sal de Martha* (Martha's salt) available for customers to use.

Martha also makes and sells *pan integral* (whole grain bread), banana bread (bananas are abundant in Vilcabamba), cookies, and granola. In addition, she makes natural herbal and sugar cane vinegar, which she learned how to make from Micaela Quesada when she was over 100 years old. Micaela was also a wool-spinner and lived to be 104; according to Martha, Micaela said she lived to be so old because she never married and so there wasn't a man bothering her all the time.

Martha is interested in and knowledgeable about nutrition and healthy foods, and not just Ecuadorian ones. She describes that the mixture of three kinds of vinegar (herb, banana, sugar cane) is a good remedy, while each, individually, are good remedies for other things. For example, vinegar made from bananas and from the plant *cola de caballo* (horsetail) is used for inflammation, breathing, indigestion, purifying the blood, and is a natural antibiotic. In many countries, she says, it is suggested to use natural vinegar to get the calcium out of bones when you're cooking them. Additionally, she abides by the Chinese rule which states that a person needs the five flavors sweet, sour, bitter, pungent, and salty in the diet every day.

Two or three women go to Martha's house on Monday to harvest the herbs that they will use in the salt. These include oregano, parsley, cilantro, celery, basil, cumin, consuelda, alfalfa,

dill, rosemary, gotu kola, carrot, onion, and chaya. These herbs are washed in the clear river below (see Figure 10), from which Martha also hauls her drinking water, and then laid out to dry on cookie sheets, or sometimes in the oven, after which they are removed from their stalks and later mixed into the salt and other ingredients. Normally on Tuesday, Wednesday and Thursday, one to three women will come to perform the other various tasks associated with Martha's products (Figure 11). Martha usually goes to town to deliver the products later in the day on Thursday and stays until Friday evening or into Saturday. This is also when she makes her trip to Loja to deliver her wares.

Figure 10. Martha with Lastenia and Piedad, washing the herbs

Figure 11. Grima, Marina, and Inez making cookies

Martha pays her helpers 80 cents per hour and subtracts from this amount any goods that she gives to them, according to their individual needs. These supplies can range from milk, *balanceado* (animal feed, in this case usually for chickens), cheese, garlic, onions, and cooking oil to toothpaste, soap, toilet paper, etc. This practice is akin to the older custom of *canje* or *trueque*, in which items or work are traded, substituted, or exchanged instead of money being paid.

Martha also cooks and serves them lunch, which usually includes the standard of *horchata*, soup, and main dish. *Horchata* is a delicious herbal tea common in this region and made with a mixture of 28 herbs; it can be served hot or cold. Some of the women's chores are not only related to making items to sell; they also help out with certain aspects of making lunch. Sometimes, for instance, one of Martha's chickens is slaughtered, or one of her workers will bring a live chicken in a sack to be cooked for lunch. The chicken is given some *trago* or *punta* (sugar cane alcohol) in order to calm it before its throat is cut. This not only helps to calm the chicken but also helps to prevent the adrenaline and other negative effects of being upset from affecting the meat. The whole process creates existential dilemmas for the people involved, more so for some of the women than others; a couple of them consider it a sheer fact of life while others, including Martha, have a more difficult time with it. Martha eats very little meat, and sometimes, she says, she wonders how she eats any at all.

As is generally the case throughout Vilcabamba, as little as possible is wasted in cooking or in the making of Martha's products. For instance, when they make *humitas*, every part of the corn husk is used. A *humita* is a delicious corn cake-like food made from fresh ground corn off the cob, grated cheese, eggs, butter, and a little sugar, mixed together and inserted into a corn husk wrapping and then steamed. Even the corn silk is saved, as it makes a tea that is especially good for men to drink because it aids the prostate. Any leftover corn husks are fed to the goats.

After lunch, the women wash their own dishes at the outside sink. Although the women obviously get work done, the day is also a very social one for the women, who joke, tell stories, and relate the latest news from their lives. Men are involved as well. For instance, Pepe, the husband of Inez (who works for Martha), does gardening work for Martha, and comes to the house to eat lunch. I never left Martha's empty-handed, and her helpers were generous as well.

On one walk down the mountain with Grima, we stopped at her house and I left with oregano, corn on the cob, and fresh eggs (which were very difficult to get home without breaking).

4.1.3 Orlando and Alicia Falco

Orlando Falco is an Argentinean who, during and after receiving his degree in zoology at the University of Florida, worked in the Galapagos Islands as a naturalist guide for 15 years. One of those years was spent as a guide in the Amazon region. His wife Alicia, also from Argentina, has her master's degree in biology from an Argentinean university and was a guide in the Galapagos for two years. In 1991, they moved to Vilcabamba and, though they don't have anywhere near the income in Vilcabamba that they did in the Galapagos, they love living there. They are raising three children in the valley and are invested in conservation and ecotourism. They operate the *Rumi Wilco* Ecolodge and Nature Reserve just outside the town of Vilcabamba. The Falcos and a group of neighbors pooled their tracts of land in order to form an area of nearly 40 hectares (99 acres), which they planned not only to conserve but to work toward increasing the biological diversity already present. They collectively worked to get support from the Ecuadorian government to achieve *Bosque y Vegetación Protectores* (Protected Forest and Vegetation) status for the reserve, which occurred in 2000. So far, 118 species of birds and approximately 500 plants have been identified within *Rumi Wilco*. As of 2005, the reserve contains interpretive signs and a self-guided trail system, and one can enter by placing $2.00 into the drop box located at the entrance. The project is also supported through the lodging that is available next to the reserve.

Orlando and Alicia believe that it is imperative to implement alternative models for livelihoods and environmental protection. They believe that the problem of land degradation

stems, among other things, from the insignificant value of ecosystems within the present economy. Orlando has said that "Here, land is regarded as a source of water, food, income, and medicine. Crude and simple. The land is employed in practical concerns, not for beauty. There is no sense of the religious, sacredness, or mystical qualities of the earth. We are in Dark Ages now. People are not curious." To the Falcos and others, the top priority is to stop the burning and other forms of environmental degradation through education and demonstrating other uses for land and ways of maintaining it. They believe that this will encourage people to appreciate and value the ecosystem, monetarily and otherwise, so that these ecosystems can in turn be protected and supported. To Orlando and Alicia, though, the answer to the problem of environmental degradation lies in protection, not cultivation, per se, and thus they believe that ecotourism is the most effective way of rehabilitating or saving the environment. They also believe that if local people see that others value the ecosystem and its services, they will start to think and behave similarly; thus, they lead by example.

Orlando is usually not at all hesitant to voice his opinions. He believes that science and scientists are over-rated, and that we place too much faith in them to solve our problems: "Science is good for cars and bridges and rockets. Part of the problem with science is that perception occurs not just from the neck up. Maybe we need to stop *thinking* so much. …Western minds are taught to be rational thinkers," he states, "but we need to use our *hearts* and have *passion*."

Orlando does not want more people to move to Vilcabamba, and he makes this very clear. For example, an Iranian fellow who had come to town to do a documentary on Vilcabamba was confronted by Orlando, who requested that he not do it because it might encourage other people to move to the valley. When I said, "But Orlando, what about the

tourists that come to *Rumi Wilco*?", he replied "But *they* leave!" Obviously there is the chance that tourists who come to the valley will stay, or that someday they will return and remain there permanently. In fact, this has happened. It is interesting that someone who is from another country can feel (or can feel entitled to feel) something resembling a sense of ownership over a place, but Orlando has lived in the area for quite a long time and has worked hard to foster awareness and change. Even though he comes across as wanting to exclude other people, it seems to be more a matter of wanting to save the (what he terms "sensitive") valley from the negative influences of population growth and real estate development.

4.1.4 Sue Mann

Sue Mann was originally from the U.S., later lived in Spain for several years, and has lived in Ecuador for 19 years. For 15 years, she has made and sold tempeh, which is made from partially cooked and fermented soybeans. Most of her market for this product is in Vilcabamba, where she sells to both individuals and restaurants. Several local restaurants have been purchasing the tempeh for some time: It is a popular menu choice among tourists – especially vegetarians – and some local people have begun to enjoy the healthy, high-protein food as well. Within the last couple of years, Sue has taught a young couple from Vilcabamba how to make the tempeh and to begin to develop their own customer base in Vilcabamba and in Loja (see Section 5.1.2.4 for more information). I have heard several Ecuadorians say that Sue "*es buena mujer*," meaning that she is a good woman. Other contributions she has made to the community include her attempts to increase understanding between individuals; in some cases, she has acted as a mediator between two parties who are having disagreements.

Sue is also involved in a housing cooperative, the *Cooperativa Praderas del Mandango* (Meadows of Mandango Cooperative), which will include 280 families, nearly all of whom are Ecuadorian. Even though the intent is for it to be an eco-cooperative, the only thing that is mentioned at the meetings is the planting of trees. It is still very typical in the region for the prefix *eco-* to be first and foremost, and often exclusively, associated with trees. This can likely be attributed to the reforestation projects that have taken place throughout Ecuador, and the reasons given for these projects. Sue is working with the possibilities of incorporating more eco-friendly concepts into the cooperative, such as gray water recycling and composting.

4.1.5 Bernarda Bravo and Samuel DuBois

Samuel DuBois, originally from the U.S., has lived in Ecuador for 38 years. His wife Bernarda Bravo is originally from the city of Loja, and they live in Taxiche. Sam terms his occupation a development communicator, and Bernarda is a development consultant. The two are involved in organic agriculture, composting (including composting toilets), reforestation, soil fertility, alternative natural health care, water management, recycling and waste management, and beekeeping. They are also concerned with the three interrelated topics of environmental education, curbing outmigration, and helping people to stay in the countryside. The two key ideas that they say are indispensable for long-term accomplishments and progress in terms of development in the area are *persistence* and *communication*.

In talking with Bernarda and Sam, the two repeatedly talk about the problem of the quality of education in the area (see Figure 12 for the education levels of agriculturalists in

Ecuador[45]). In addition, children are basically taught to abandon rural areas: Rather than tailored to the requirements of farming, practical pursuits, or toward the type of knowledge that is most relevant to the resolution of the country's primary problems, it is modeled after what is taught in advanced industrial countries (Lefeber 2003). Pribilsky also points out that many Andean parents treat children as "in development," considering that their best resources are education to work in the cities or to migrate rather than agricultural knowledge (2009).

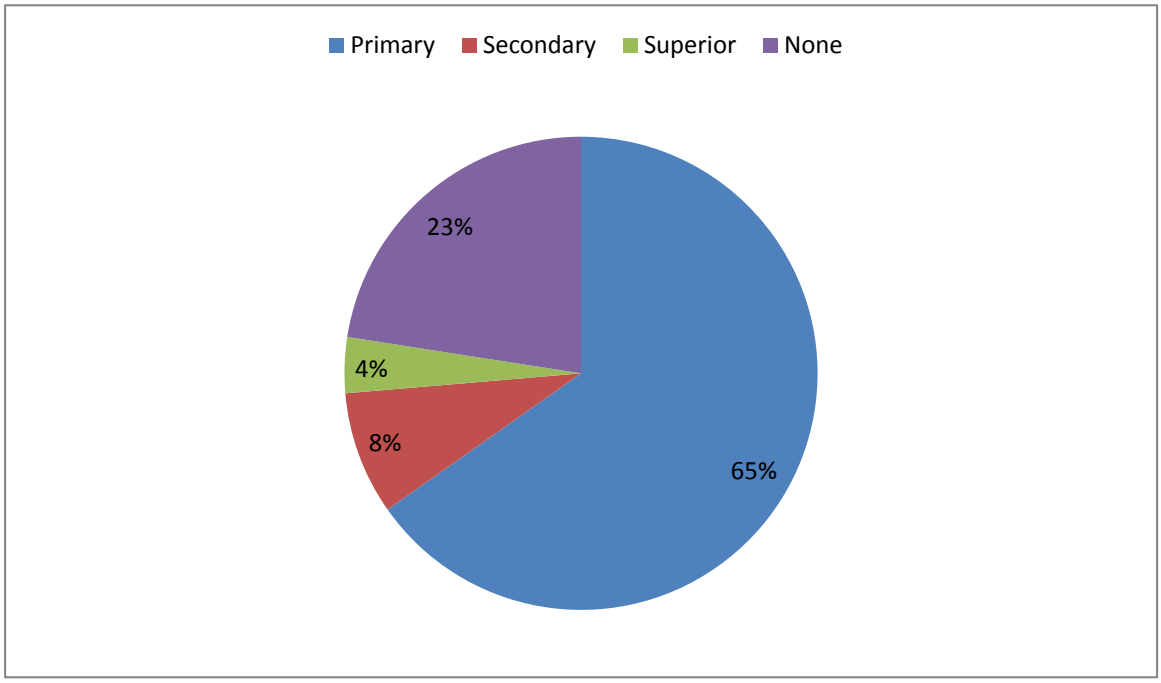

Figure 12. The levels of education of agriculturalists in Ecuador

According to Bernarda, "the people don't *know* that they don't have to use chemicals in agriculture…they don't *know* how much damage the chemicals do…they don't *know* that they

[45] Source: Viteri Díaz 2007 and Ecuadorian Agricultural Census 2000.

don't have to burn." Referring to the natural world, Sam states: "All they need is for someone to teach them how not to ruin it." This all sounds very simple, and people *are* beginning to understand that these chemicals and so on are evil. However, Bernarda and Sam stress that people don't realize *how* problematic they are. According to Sam, "They think they can run with the devil for a while and then confess and start over clean."

Bernarda and Sam have written and published a series of lessons to be used in education, with "*el fin de mejorar nuestra vida en el campo – entender mejor, para vivir mejor*" (in order to better our life in the countryside – to understand better, in order to live better). For example, Unit 3 of the series is entitled *El Huevo Gratuito* (The Free Egg) (Bravo and DuBois 2006) and discusses, among other topics, how to raise chickens without depending on purchased supplies. Above all, as a matter of course in the area, these supplies usually include growth hormones and other chemicals, as many people assume that this is a necessity.

Bernarda and I discussed how, in 2004, a Participatory Appraisal of Competitive Advantage (PACA) exercise was undertaken in Vilcabamba (see mesopartner Partnerschaft 2005). PACA is an approach to local and regional economic development that involves local stakeholders. The PACA methodology, which requires approximately four months to complete, can identify ways to increase the competitiveness of local economic activities and help to implement these actions. One of the problems that became apparent during the process was the common belief among residents that "*El gobierno debe soluci onar nuestros problemas*" (The government should solve our problems) and that "*La población está acostumbrada al paternalismo*" (The population is used to paternalism), which reinforces their dependence on the

government.[46] These statements, especially the latter, echo what I repeatedly found and heard during my fieldwork. There is, and has been, a problem of paternalism in Ecuador. This stems from the manner in which the country has been governed, in a fatherly manner but without the population having adequate access, rights, and responsibilities, and also refers to the way that development projects have been carried out (discussed in other parts of this dissertation).

In reference to the agricultural sector, the findings of PACA indicate that the agriculturalists are not trained in new agricultural technologies or in organic production; that there are a number of intermediaries, which cause higher prices; and that the producers use a lot of agrochemicals. All of these findings are corroborated by my research, as well.

In the end, very few of the recommendations offered by the process have been carried out. I was given various reasons for this, e.g., the leader quit the project; there were few telephones in Vilcabamba, so people could not communicate; and some business owners could not work together. As stated on the webpage for PACA, "LED [local economic development] only works if it is owned by local stakeholders" (mesopartner Partnerschaft 2005), and this is where the process fell apart. This is unfortunate, yet not at all surprising, considering the cultural tendency to be really gung-ho about something at the beginning, after which the enthusiasm evaporates and plans fall by the wayside.

[46] The results of the PACA methodology were shared with me by Bernarda Bravo, who represented Colinas Verdes during the PACA evaluation.

4.2 THE PACE AND FACE OF CHANGE

A brief description of the rapid changes in Vilcabamba is instructive here. Foreigners began to arrive to the valley toward the end of the 1960s. In 1998, there were reportedly 64 immigrants living in Vilcabamba, most of whom were from the U.S., Canada, Germany, and France (Vivanco Hidalgo 2000:27). Now there are approximately 250 expatriates living in the valley. According to one interviewee, Vilcabamba was a very different place in 1972: "There were chickens and pigs everywhere, even in the streets; they cleaned up the garbage. There were always a lot of old people around the church; approximately 15 to 20 people over 100 years old. It took 3 ½ to 4 hours to get to Loja and it was a dirt road. In Cajanuma there were landslides, which would at times keep you from going where you wanted to go. People on horseback would spend the night there. The only bus that went to Loja at that time was the *Sur Oriente*, and they were *mixtos*[47] . …Twenty-five years ago there was a gravel road to Loja; just sixteen years ago [in 1991], they paved the road to Loja." Previous to 1982, the road to Loja was a dirt road.

It is now mandatory for school-age children in Ecuador to attend school until the 6th grade. However, all of my informants who were in their late 60s and older either did not attend school or attended classes only briefly on the haciendas that they lived on while they were growing up. For various reasons, many individuals still do not attend school beyond the 6th grade. These reasons include the cost of attending school, which entails the expense of books and uniforms, and the fact that the children are often needed to perform chores around the house or farm and fields. The problem of the lack of and quality of education was mentioned as a concern by many individuals. Even for those children who are able to attend school, the public

[47] *Mixtos*= mixed. These buses transported both humans and animals.

school system suffers from a shortage of funding and support, which is reflected in, among other things, the lack of class materials and qualified teachers, while the teachers that they do have are underpaid. A few families who are able to afford it – either on their own or with the help of a benefactor – are able to send their children to the private bilingual school in town. In this school, classes are mostly taught in Spanish, with English classes ranging from 50 minutes for the youngest students to 1 hour 20 minutes for older students.

In 1983, there were four cars in the town of Vilcabamba. Today, according to Milton Ruilova, the administrator of the bus terminal and the market in Vilcabamba, there are 25 taxis[48] involved in the *Cooperativa de Transporte Mixt o Terminal Terrestre Vilcabamba* (Cooperative of Mixed Transport at the Land Terminal of Vilcabamba); 22 taxis at the park in the center of town, belonging to the *Compañia Transporte Vilcamixto* (Company of Mixed Transport); 21 taxis in the *Taxi Ruta 11 de Mayo* (Taxi Route May 11) that go to and from Loja; and 16 smaller buses that run from Vilcabamba to Loja (the *Vilcabambaturis*). In addition, there are other bus lines that run north and south through the valley. Most people do not own cars, so they use all of these forms of transport.

When I first arrived in the valley in 2002, very few people had telephones in their homes, and there was one public telephone office in town. In this office, there were three pay phones that were not dependable because they were often out of service or because the high amount of telephone traffic, especially on the weekends, would prevent calls from going through. The people who wanted to install land lines were on waiting lists, and they would often wait for years before that line was installed, if it ever was at all. At that time a few of the more fortunate taxi

[48] In Vilcabamba, the taxis are trucks; the taxis that run back and forth from Loja are small cars.

drivers had portable radios. By my fourth trip to Vilcabamba in 2006, many people owned cell phones.

The prevalence of televisions nearly mirrors that of telephones. More than one informant related how television has caused a lot of changes in the valley. In the past, some people would (maybe) think about tomorrow but now they hear about all of the problems abroad, about accidents, wars, etc., and it is depressing and causes stress. In addition, they are bombarded with advertisements for things to buy. In this way, they have in a short amount of time gone from a more frugal lifestyle, and one in which their concerns and perceived needs were more basic, to a more "modern" one. This modernization, along with contact with foreigners, has given them knowledge of great wealth, opportunity, and privilege, but only very limited avenues by which to acquire these things.

Many also say that they were healthier before there was a hospital in Vilcabamba. This hospital, *Hospital Hokishi Otani*, is named after a Japanese doctor who arrived to the valley in 1977 and subsequently recovered from a heart condition. Some people say that when they get sick, now they can just take a pill or go to the hospital, where before, for example, they used medicinal plants or natural cures. It is also true, however, that in the past their diet was more conducive to good health, as was the physical labor and activity that they performed. For instance, instead of growing their own food, they can now go to buy it in a store, and the food that they purchase is usually less healthy food.

The change in Vilcabamba is palpable. There were once several little stores that sold inexpensive handicrafts to sell to the backpackers coming through town; now there is an actual art gallery, which is owned and run buy an affluent foreigner. Most, if not all, of this more expensive merchandise is purchased by foreigners.

This brief description of some of the transformations that have taken place in Vilcabamba supplements the other explanations of changes that have occurred, as discussed in other sections of this dissertation. These factors include development (or lack thereof) and socio-cultural, political-economic, and ecological factors such as agrarian reform, climate change, and the presence of foreigners. Together these details will form a comprehensive picture of the state of affairs in the valley.

A central argument of this dissertation is that these conditions describe and have resulted in essentially three kinds of development in this locale: That offered through the state and national and international NGOs; that forged by the partnership between well-integrated immigrants of long-standing in the community and autochthonous individuals; and the more recent influx of immigrants looking for a beautiful place to retire where the cost of living is low and where other gringos are settling, which in many ways has caused conflict between various individuals in the community.

4.3 MORE RECENT IMMIGRANTS

4.3.1 The Hacienda

One individual purchased a 663-acre ranch, *Hacienda San Joaquín*, and is selling lots in order to form an "extraordinary community of like-minded individuals." "Generally speaking,"

according to the website[49], "our owners, successful and intelligent, seek a way of life that transcends in multiple ways much of the commercially driven over-priced nonsense and associated problems common and growing in the world." So far, 47 properties have been sold to people from the U.S. (California, Florida, Colorado, Maryland, Arizona, and New Mexico), Canada, the United Kingdom, Germany, Hungary, Czechoslovakia, Switzerland, Russia, Australia, China, Taiwan and South Korea. A couple from Loja has also purchased one of the lots, which are priced very high for land in Ecuador. Deed restrictions allow one main house, one guest house, and one caretaker house per property. Some owners are spending millions on houses and property. It is a gated community with an equestrian and hiking center, trails, stables, an organic store and café, and a river park. Presently, an "elegant" four-star mountain-top hotel and pool with "upscale Ecuadorian hacienda architecture" and a riverfront spa are being constructed. Some buyers have become disgruntled because some lots have been subdivided, and more lots are being carved out of the property than was originally planned.

At times, up to 300 workers, most of them Ecuadorian but some of whom are Peruvian, have been employed at one time at the hacienda. Most of these are men working in construction, but there are also people who work as grounds keepers or as domestic workers (usually women who cook, clean, and wash clothes). This is substantial, and employment is likely to continue for a number of these individuals for some time. It is also true that because of this, it is very difficult for farmers to find people willing to work in their fields. Frankly, working in construction, at the hacienda in particular, often pays better and is easier. Some workers say there is little supervision.

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[49] http://www.vilcabambahomes.com/glimpses/gl052.html

Among the monthly fees for the residents of *Hacienda San Joaquín*, $10.00 per lot is charged for the Community Assistance Fund, which is used to aid people in the adjacent Chaupi and Vilcabamba area neighborhoods. They also have an annual fund raiser to support community assistance projects. Some of the foreigners also donate money to other causes, but may not ever meet the child they are sponsoring or be in any way involved in the organization or activity that they have made a contribution to. Thus, there is no face-to-face interaction. Of course, donating to a good cause is commendable, but the point is that these expatriates live within a rather closed group, interacting among themselves in their cliques but otherwise nearly shut off from their chosen society, although they are able to feel redeemed by donating money to one or more various causes. This community is one among a few examples of this sort of arrangement in the valley today.

4.3.2 The Arts and New Science

Some expatriates that have arrived in more recent times are interested in esoteric, mystical, or, quite literally, otherworldly issues. There is the "center for peace, sustainability, the arts and new science" and the Cosmos Conference Centre. International conferences have been held at these places with people from all over the world who are interested in these issues, although you won't see any Ecuadorians there.

One of the newer residents stated the following at an international conference for Project Camelot[50] in Vilcabamba, which was attended by 70 individuals: "We were like the second

[50] According to the webpage of Project Camelot (http://www.projectcamelot.org): "Our focus is an investigation into (but is not limited to) the following: extraterrestrial visitation and contact, time

visible gringo [*sic*] to move here. By visible I mean not wanting to go, let's say, into the woodwork and just stay there. Because we're still actively...many of us now in this room are very much actively involved in interacting with the culture. But we were basically the second. And that was four and half years ago." This quote is from January 2009. Not only is it inaccurate that the man and his wife were the second gringos to move to Vilcabamba who did not disappear into the woodwork, but it is also misleading to say that they are actively involved in interacting with the culture (*and* that others are not). They do employ some Ecuadorians in service and construction work; however, it is safe to say that the majority of Ecuadorians think of them as snobs and do not know or understand what they are involved in. Later in the same speech, he said that one of his main concerns is the "overdevelopment" of Vilcabamba -- although he brings people there for conferences and retreats at he and his wife's "center for peace, sustainability, the arts and new science." The couple does commonly engage in showing real estate to those who visit through both advertising and word of mouth, although they do believe that Vilcabamba should "develop slowly and ecologically or don't develop at all".[51]

4.3.3 *La Bruja* (The Witch)

One more recent immigrant purchased a house and a hotel in Vilcabamba and immediately set out to make major – and unpopular – changes. Among them, she demanded that all of the

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travel, mind control, classified advanced technology, free energy, possible coming earth changes, and revealing plans that exist to control the human race."

[51] As stated in "An Open Letter to International Living" in which he laments their marketing tactics to "land-grabbers and retirees insensitive to the environment".
http://brianoleary.info/An%20Open%20Letter%20to%20International%20Living.html
International Living is a website and magazine "helping people live, travel, and prosper overseas since 1979."

Ecuadorian staff learn English so that they could speak to her (and obviously, to the clients of the hotel who speak English), and that they come to English classes during their time off work. She began to build a large wall and entrance gate around the grounds of the house that she purchased and forbade the Ecuadorian children that used to visit the previous owners to enter. The self-proclaimed peace activist bought neighborhood dogs – deals which could not be turned down by their poor owners, who often could not afford even to feed them – because she did not like to hear them bark and sent them off to be killed, unbeknownst to their owners. She set to meddle in the affairs of a people and a place she hardly knew, throwing her weight around and using the support of her wealth to back her up. In every sense of the word, she was a true Ugly American (in the negative sense that the term has taken on). Ecuadorians claimed that she believed herself to be or wanted to be "*La Reina del Pueblo*" (the Queen of the Town). With this particular woman, it was not only her actions that aggravated people – Ecuadorians and long-term immigrants alike – but the way she went about everything. She was referred to as "*La Bruja*" (the witch) not just because of her appearance, but also due to her character and behavior.

The following was written on the blog of a traveler who stayed at her hotel in 2007[52]: "Then the five of them sat around discussing how to change the town in any way they possibly could, implying and even stating flatly that the local folks weren't intelligent enough to effect change themselves. One could reasonably infer that the citizens of Vilcabamba were waiting patiently in their cribs until their five gringo leaders returned and told them what to do, and breast-fed them, and rocked them to sleep." One of the five present was the owner herself. She has also been quoted in a published document as saying "I believe I am the mother of all children and all plants and animals, some way or another I feel like that. When I look in the mirror I see

[52] Aaron Hotfelder, http://www.gadling.com/2008/08/05/us-retirees-changing-the-face-of-central-and-south-american-comm/#comments

on the outside a body of an American woman and on the inside the body of a native from Vilcabamba, very Ecuadorian." The image that she projected for the world to see was quite different than the one experienced by local people.

She strove to place her image as one of concern for the young and the old people of Vilcabamba, along with the "conservation" of the valley. She purchased a 17-hectare (42-acre) piece of property across from her hotel in order to "protect [it] from development," and she said she would to continue to run the sugar cane mill present on the property for the benefit of the old people. However, the sugar cane on the property itself was sold for $30,000, and no one knows what happened to the money. The land is currently for sale at approximately $200,000 per lot.

Selling real estate actually became a little dangerous for her because many people – buyers and sellers alike, gringo or Ecuadorian – realized that she was out to make a lot of money from land and house sales. Consequently, many people learned not to trust her. However, she continued to promote land sales to her hotel clients, asserting that she and only she knew about all of the property that was for sale; that they would get ripped off if they searched for property through anyone else. She fired employees who had been found to talk directly with clients about land that they knew was for sale. Even acquaintances who came to Vilcabamba through her in order to look for land have ended up in unfortunate circumstances: For example, one group of individuals bought an entire farm and afterwards realized that there was no water supply and no right of entry from the only nearby road. She is currently involved in litigation with several individuals, and since the time of my fieldwork she has been forced out of Vilcabamba. However, before she left, Ecuadorians would spit behind her – signaling their contempt for her – as she rode through town on one of her expensive *paso fino* horses. The image that she tried so hard to convey was nothing more than a façade, and the Ecuadorians knew it.

4.3.4 The Backlash

It is situations like this that have aggravated the uncertain relationship between immigrants and autochthonous individuals. There are some Vilcabambeños who are employed by, and/or who have had good experiences with, foreigners and consequently look at them for the most part in a positive light. They may admire, for example, their honesty, generosity, integrity, work ethic, or punctuality, or even simply how they look, that they have money, or that they are from a Western country. However, there is another set of individuals and families that believe that the influence of foreigners is all together negative and that they should all leave. Between these two ends of the continuum lie the unsure and tentative folks whom I would characterize as at times having an ambivalent or love-hate relationship with foreigners. They have heard all the gossip about the tourists who come and go and about the immigrants living there; they've seen things on television (a relatively new thing in Vilcabamba) that seem so outlandish and unfamiliar to them; they don't understand how tourists can take time off work and travel around the world[53] (and where do they get the money to do this?) or how foreigners can come there, build a house (sometimes a big, fancy one, or two or more), hire Ecuadorians, and not work (i.e., have no, or at least appear to have no income).[54] This doesn't seem fair to them, when they themselves perhaps cannot even find a job or feed their family. They wonder about where these people's families are. Isn't family important to them? If so, how can they just go away and leave them?

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[53] According to the tourist information office, Vilcabamba receives approximately 700 tourists per month; the height of the tourist season is the months of July, August, and September. A large number of tourists come from Israel; other countries of origin include Germany, England, Holland, the U.S., France, Switzerland, Sweden, Australia, New Zealand, Canada, other South American countries, etc.

[54] One field consultant had made the assumption that not many people in my country work for a living. He also presumed that people who work, work in offices, and that it's not possible to keep horses in places like the U.S. (the latter idea may be due to the fact that tourists often rent horses, and many immigrants – especially relatively affluent ones – own horses).

"*Nosotros somos más afectivos* (We are more sensitive [than them])," one field consultant related to me. And why can they so freely come to my country when I can't go to theirs? In some cases, this creates a form of resentment that is difficult to overcome, especially without communication, interaction, learning, and increased understanding. Thus, on one hand, tourists and immigrants bring certain benefits, such as income, but they are also a double-edged sword.

The following letter is reflective of the very negative attitude of some Vilcabambeños toward some of the immigrants, who received this under their door (English translation follows):

PUEBLO DE VILCABAMBA

Nos reunimos pobladores, padres de familia, pr ofesores, agricultores, comerciantes, dueños de tiendas, basares, hostelerías, etc. para analizar la situación actual de Vilcabamba.

Resolviendo por unanimidad:

PRIMERO: Dado el alto índice de dr ogadicción, causada por la presencia de extranjeros radicados en el valle. Se so licita a todos los ci udadanos, poner mano dura y denunciar a las autoridades, la venta y consume de drogas como: mariguana, sanpedrillo y otras, que están causando estragos negativos en la juventud de nuestro pueblo. Habrá respaldo total para los denunciantes.

SEGUNDO: Se analizó la presencia de extranjeros que se hallan radicados desde el año 1995, los mismos que están causando daños a la población, con sus negocios, costumbres y sobre todo encareciendo la vida de los poblador es, pagando altos precios por tierras y casas, haciendo imposible la adquisición de bienes para la gente del lugar.

Vilcabamba es un lugar muy rico en costum bres, cultura, música, comida y longevidad, que no se encuentran en ningún lugar. No podemos permitir qu e nos impongan formas negativas de vida arrebatándonos lo nuestro.

Tenemos que actuar drásticamente como lo han hecho en otros lugares como: Baños de Ambato, Misahuallí, Galápagos, Mindo, etc. cer rando las puertas a los que quieren adueñarse de nuestras tierras, no vender nuestras casas, no comprar en sus negocios, no permitir el manejo del turismo. Lo nuestro debe ser manejado por nacionales, ya que solo nosotros podemos forjar los beneficios para nuestros hijos y generaciones futuras.

Los extranjeros radicados en Vilcabamba y sus alrededores, desde el año 1995, deberán salir del valle en un plazo máximo de 30 días, a partir de la fecha de circulación de esta resolución patriótica y moral de los pobladores. Si no lo hacen, actuar emos de manera más dura, perderán sus bienes y tendrán grandes problemas. Tenemos una lista de sus nombres.

HOMBRES Y MUJERES DE VILCABAMBA, NO PERMITAS QUE UN EXTRANJERO TE ARREBATE LA VIDA CON LAS DR OGAS, TE CAMBIE LAS COSTUMBRES, TU CULTURA O TE IMPIDA TRABAJAR.

LO NUESTRO MANEJAMOS NOSOTROS

TODO TURISTA NACIONAL O EXTRANJ ERO SERÁ RECIBIDO DE LA MEJOR MANERA, como siem pre lo hemos hecho, pero, N O PERMITIREMOS QUE LOS EXTRANJEROS SE RADIQUEN EN NUESTRO VALLE.

EL PUEBLO UNIDO JAMÁS SERÁ VENCIDO

POR UN FUTURO MEJOR, LIBRE DE EXTRANJEROS EXPLOTADORES

"UNION TOTAL"

* * * * * * * * * * * *

PEOPLE OF VILCABAMBA

The people of Vilcabamba, fathers, teachers, farmers, merchants, owners of food and hardware stores, hotels, etc., have met in order to analyze the present situation of Vilcabamba.

Resolving unanimously:

FIRST: Due to the high rate of drug addiction, caused by the presence of foreigners located in the valley. We request of all the citizens to use a strong hand and denounce to the authorities the sale and consumption of drugs such as marijuana, San Pedro and others, that are wreaking havoc with the young people of our town. You will have our total support for the denunciations.

SECOND: We have analyzed the presence of foreigners that have settled here since 1995,[55] the ones that are causing harm to the population with their businesses, customs and above all raising the cost of living of the townspeople, paying high prices for land and houses, making impossible the acquisition of goods for the local people.

Vilcabamba is a place very rich in customs, culture, music, food and longevity that cannot be found anywhere else. We cannot permit that negative forms of life are imposed upon us, taking ours from us.

We have to act drastically like they have in other places like Baños de Ambato, Misahuallí, Galápagos, Mindo, etc., closing the doors to those who want to become owners of our lands, not selling our houses, not buying in their businesses, not permitting their operation of tourism. What is ours ought to be managed by nationals, because only we can build up the benefits for our children and future generations.

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[55] It is important to note that this letter is directed toward foreigners who settled in the area since 1995. By doing this, the petitioners are clearly separating the two different groups of immigrants.

The foreigners who have settled in Vilcabamba and its surroundings since 1995 should leave the valley within a maximum time of 30 days after the date of circulation of this patriotic and moral resolution of the citizens. If you don't do this, we will act in a firmer manner, and you will lose your property and have considerable problems. We have a list of your names.

MEN AND WOMEN OF VILCABAMBA, DON'T PERMIT A FOREIGNER TO TAKE AWAY YOUR LIFE WITH DRUGS, CHANGE YOUR CUSTOMS, YOUR CULTURE, OR IMPEDE YOU FROM WORKING.

LET'S TAKE CHARGE OF WHAT'S OURS

ALL FOREIGN AND NATIONAL TOURISTS WILL BE RECEIVED IN THE BEST MANNER, as we have always done, but WE WILL NOT PERMIT FOREIGNERS TO SETTLE IN OUR VALLEY.

A PEOPLE UNITED WILL NEVER BE DEFEATED

FOR A BETTER FUTURE, FREE FROM EXPLOITATIVE FOREIGNERS

"TOTAL UNION"

* * * * * * * * * * * *

An Ecuadorian wrote the following response (English translation follows):

MEAR CONTRA EL VIENTO ES LO MISMO QUE ESCUPIR PARA ARRIBA

Tontos y bobos los que lo hacen. Bien dicen que peor peca el bruto por bruto que por malo. Quién de nosotros no sabe del benefici o económico y cultural que hemos recibido de estos extranjeros que dejaron sus países para vivir con noso tros. Las plantas de agua, las nuevas ideas en cultivos y negocios que anterio rmente no teníamos, el incremento en lo s negocios de todos, Estrelina, Nelly, Gaona y t odos los demás que hoy tienen camionetas para transporte que saben trabajar, todos ganan con los turistas y residentes extranjeros.

Bobos que escriben y derraman su envidia con malicia y pretenden hablar por todos los Vilcabambeños, a Dios gracias son tan pocos Uds. amargados que tratan de contagiarnos con sus enfermizas ideas egoistas. Que no se dan cuenta que el 70% de este bello lugar hoy vive gracias a la influencia de extranjeros, mochileros, lindos gringuitos que vienen a gastar su dinero para el beneficio de todos en Vilcabamba. Acaso nosotros pagamos para alquilar caballos, son ellos y con eso damos de comer a nuestras familias. ¿Cuántos negocios de hoy fueron iniciados por personas de afuera que vinieron a residir entre nosotros? Tontos están ciegos, están escupiendo para arriba, meando contra el viento. Pretenciosos engreídos, no hablan por nosotros, sabemos quienes son Uds., los mismos amargados celosos de siempre. Los gringuitos no son sus enemigos, Uds. mismos son sus peores enemigos, miren como despojaron a Vilcabamba de turistas, mataran a la gallina que pone los huevos, huevones. ¿Es esto lo que quieren? Si lo logran, se tendrán que comer sus camisas, por que no llegarán los extranjeros.

Las tierras que hoy tienen buenos precios es bueno para la mayoría, pues con trabajo tenemos terrenos. No es como antes cuando los sapos pagaban lo que querían por nuestras tierras, hoy valen por que vinieron gentes que supieron apreciarlas. Los que quieran comprar terrenos, que paguen lo que vale o que se vayan a España a trabajar.

¿Tan pronto olvidaron que no había trabajo en Vilcabamba, que nuestros hijos salían a Quito a estudiar y trabajar? Ya no. Ya no, por que vienen turistas, mochileros y deja su platita aquí y dan trabajo, pagando bien, mejor que nosotros. Que hay de malo en esto, tontos. Hoy, Uds. que tiraron la primera piedra quieren esconder la mano, pero sabemos quienes son y por que. Pues entiéndanlo bien, aquí, el pueblo de Vilcabamba aprecia y reconoce la contribución de los extranjeros, económica y cultural, y para los que entendemos esto, los queridos gringuitos, SERÁN SIEMPRE BIENVENIDOS.

Los conscientes.

* * * * * * * * * * * *

TO PEE AGAINST THE WIND IS THE SAME AS TO SPIT UPWARDS

Idiots and fools that have done this: Who of us does not know the economic and cultural benefits that we have received from these foreigners that left their countries in order to live with us? The water plants, the new ideas for cultivars and businesses that we didn't have before, the increase in the business of everyone, Estrelina, Nelly, Gaona and everyone else who now has trucks for transport, who can now work; everyone wins with the tourists and foreign residents.

Fools who write and spill out your jealousy maliciously and pretend to talk for all of the Vilcabambeños – thanks to God there are so few of you bitter ones that try to infect us with your selfish, sick ideas – that you don't realize that 70% of this beautiful place today lives thanks to the influence of foreigners, backpackers, nice gringos that come to spend their money for the benefit of everyone in Vilcabamba. It is not us who pay to rent horses, it is them and with this [money] we can feed our families. How many businesses were started by people from outside that came to live with us? Idiots, you're blind, you're spitting upwards, peeing against the wind. Pretentious ingrates, don't talk for us, we know who you are, the same bitter and jealous people as always. The gringos are not your enemies, you yourselves are your worst enemies, look at how you've stripped Vilcabamba of tourists, killing the hen who lays the eggs, imbeciles. Is this what you want? If you achieve this, you will have to eat your shirts, because the foreigners will no longer come.

Today the properties are worth more, which is good for the majority; since with work, we have land. It is not like before when the interlopers paid what they wanted for our land, today

the properties are more valued because people came who knew to appreciate them. The people who want to buy property can pay what it is worth or else leave to work in Spain.

Have you so soon forgotten that there was no work in Vilcabamba, that our children left for Quito to study and work? Not anymore. No more, because the tourists come, leave their money here and provide work, and paying well, better than we do. What bad is there in this, idiots? Now you who threw the first stone want to hide your hand, but we know who you are and why [you've done this]. So understand this well, here, the village of Vilcabamba appreciates and recognizes the contribution of foreigners, economic and cultural, and for those who understand this, dear gringos, YOU WILL ALWAYS BE WELCOME HERE.

Those who are aware and sensible.

* * * * * * * * * * * *

One of my most important Ecuadorian informants has himself been changed by the transformations taking place in Vilcabamba. When I first knew him in 2003 and 2004, he was a proud farmer and restaurant owner with whom I talked at leisure on various occasions. He had also been a professor at the *Universidad Nacional de Loja* (National University of Loja). He and his family were mostly living in town in order to be closer to the restaurant, although they had a house on their farm in the mountains on the outskirts of Vilcabamba. The farm had been in their family for generations. One Saturday in the summer of 2004, we went to the farm so that I could see it and he could show me the manner in which he farmed. Eduardo practiced agroforestry and mixed farming, in which various products are raised together in a manner that is more sustainable for the environment than monoculture or forest clearing.

When I returned in 2006 to do my fieldwork, I was shocked to find that he had sold his farm to a group of gringos. He has been ambivalent about the presence of foreigners in the

valley, and even now he is conflicted about the situation; he generally sees it as much more negative than positive. However, they had offered him a price he couldn't refuse, and he had children that he wanted to send to Loja to attend high school and college. Eduardo is now a businessman and has a very different life. He has less time to socialize; he is more often spotted sitting by himself looking through the classified ads. He says that the money that he received from the sale of the farm, along with his new business selling wood products, has made him a busier man than ever. If I want to talk to him, it is best to set up a time with him, which he usually forgets.

Many Ecuadorians in the area say "*estamos perdiendo nuestra cultura*" (we're losing our culture) and "*estamos perdiendo los valores*" (we're losing our values). They usually attribute this to the presence of foreigners (tourists and immigrants), movies, television, music, drugs, outmigration, and *modernización* (modernization) in general. Many also refer to the fact that, with television especially, they're bombarded with images of things to buy, which makes them want things; usually things that they can't afford or that aren't available to them.

One reason that they attribute the loss of culture and values to the presence of foreigners is that they consider many of the tourists, and some immigrants, as hippies, and there is the stereotype of hippies as dirty, lacking morals, and drug users. This is exacerbated by the fact that many tourists partake of the hallucinogenic *sampedrillo* or *aguacollo*, the San Pedro cactus. San Pedro grows in the area and has traditionally been used in ritual and healing by *curanderos* or shamans (folk healers) (Glass-Coffin 1998). Unfortunately, since the 1990s indiscriminate use of the drug has led to people acting inappropriately in the town, causing scandals and tension between the town residents and users of the drug. In addition, there is a group of artisans who live in the valley, who are generally associated with hippies. Some artisans are more

permanently settled there than others, who move from place to place in South America trading their wares, which can include jewelry, gemstones, leather and woven items, clothing, decorations, etc. These folks act and dress differently and less conservatively than the townspeople, who are *mestizo* and largely Catholic. Vivanco elaborates upon this as a cultural conflict with a strong ideological component, caused by differing conceptions of what is desirable in terms of the norms and values that prescribe and govern behavior (2000:19). Several field consultants complained about the lifestyles and dress of the artisans, hippies, and in some cases the tourists, and pointed to this as one of the reasons why people now do not have a good work ethic and/or want to party all the time.

4.3.5 The In-Between

The more recently arrived immigrants, of course, are not a completely homogeneous group. In some cases, people who have moved to the area since 1995 possess the characteristics of both groups. One such example is Blair, who bought a house in Amala, in the outskirts of Vilcabamba, in 2004. The wooden house had been owned by Swedes, who had rented it to various people for a period of years after they left Vilcabamba. The caretaker's house was part of the deal; it is common for foreigners and some more affluent Ecuadorians to own a separate house that is occupied by a caretaker. Although the caretaker's house is always smaller than that of the owner, there are usually more people living in it due to the larger family size of Ecuadorians and the importance to them of extended family. In this case, Polivio, his wife Sarah, and their two children Paul and Carla live in the caretaker's house. Polivio has been the caretaker for this house since it was built, and thus has been the caretaker for a number of

individuals. He also drives a taxi for the *Cooperativa de Transporte Mixto Terminal Terrestre Vilcabamba* (Cooperative of Mixed Transport at the bus station) in town. As caretaker for Blair, Polivio does minor home repairs, brings bottled water and propane tanks for the hot water and gas stove, runs errands, and drives for Blair, who does not own a car. Sarah also works for Blair, doing his twice-weekly house cleaning and his laundry.

Polivio, Sarah and Blair are good friends and thus their relationship goes beyond that of employer-employee. Some people who employ caretakers prefer to maintain a more formal employer-employee relationship, but Blair clearly considers Sarah and Polivio as more than employees, and they, vice-versa, consider him as more than an employer. The boundaries of their positions are not easily defined, as Polivio and Sarah both do nice, extra things; as an example, when there is an abundance of fruit, Sarah makes juice for Blair in the morning. Blair, moreover, feels an extra sense of responsibility to the Leóns. Since purchasing the property, for instance, Blair has purchased a water heater and a washing machine for their house, and Carla and Paul use his laptop computer. This is an example of what anthropologists call generalized reciprocity, a form of sharing in which people don't keep track of what is owed or given. In fact, in many respects Blair considers them more like family. In addition, Blair pays for a young girl that he knows to attend the private bilingual school in town.

Blair is from the United States, but doesn't miss what he and many others call the "rat race." He refers to the fast pace of life in the U.S.; how many people work too much and live paycheck-to-paycheck because everything is so expensive; how people aren't social; how they become consumed with buying things and live beyond their means. To him, the U.S. is a largely superficial place where many people are petty and/or have lost touch with all that was once important to them – if they ever even knew what was really important to them, or why.

He decided to retire early, after his job selling prosthetics became extremely stressful – so stressful that he became very anxious, to the point of having nervous tics. He was pushed by his superiors to sell prosthetics, and came to believe that the best interests of the patients weren't always the main concern, causing a serious moral dilemma for him.

Blair is one of the people who moved to Vilcabamba to, among other things, simplify his life. He described to me how difficult it was to part with some of the "things" that he owned before he moved to Vilcabamba: Some were family heirlooms or keepsakes with sentimental value. Other items, like his car, were not so difficult for him to let go of. In this way, Blair is part of the voluntary simplicity movement that is happening in the world – mostly in Western countries – where people have come to believe that their worldly possessions are weighing them down (both literally and figuratively) instead of adding to their lives. He describes the process of parting with some of his worldly possessions as difficult, but "liberating."

He lived in Vilcabamba for various periods of time before choosing to buy a house there. He also considered moving to the Greek Islands, but part of the reason he chose not to move there is because the cost of living had gone up, and the population varied from overly-crowded during the tourist season to nearly empty in the off-season. During his visits to Vilcabamba, he began to pursue leads on more modest houses that were for sale or where the owners might consider selling. Blair knew the owners of the house that he presently owns, and he took the initiative to call them in Sweden to inquire about buying the house. Incidentally, Blair knew the Leóns before this, and it was never questioned that the family would continue to live in the caretaker's house and remain in the positions that they already held.

Blair's method of searching for a house is quite different than the tack taken by many more recent arrivals when they decide – sometimes on a whim – that they want to buy in

Vilcabamba. Some people come to the valley to visit and decide they want to stay. Others, learning about Vilcabamba through social networking outside of Ecuador, through websites or publications such as *International Living* (the magazine and website), arrive to the area expecting to find property quickly and rather cheaply. However, many have paid what for the area is a very high price for property – perhaps because the price seems reasonable for what they would pay in their home country. Unfortunately, however, one of the consequences of this is that real estate prices have escalated rather sharply, to the point where most Ecuadorians cannot afford to buy it. The idea of "real estate" – making money off of the sale of land – is essentially one introduced by gringos. Prior to this, Ecuadorians would simply refer a prospective buyer to someone they knew had land for sale, but did not expect a commission. Significantly, nearly all of the real estate offices in town are owned by more recently-arrived foreigners, and these realtors in some cases are making quite a lot of money selling property.[56]

For example, a Mexican-Austrian pair spent several years in Vilcabamba selling real estate before leaving for Chile, where they purchased an enormous property outside of Santiago. They still own a hotel and restaurant in Vilcabamba that is for sale. In another case, a French-Colombian couple came to Vilcabamba, made a large amount of money at the beginning of the land boom in Vilcabamba, and left with what some describe as suitcases of money. This couple bought and resold parcels of land, some of which they built houses on, obtaining very high amounts of return on their investments. This has not sat well with Ecuadorians for a number of reasons: For example, these foreigners are selling Ecuadorian property – which many feel should not be theirs to sell – and they are leaving with money that should remain in one way or another in Vilcabamba.

[56] During the majority of my time in the field, there were three real estate offices in the small town of Vilcabamba, all of which were owned by foreigners.

When I describe to some more recently arrived individuals my concern about the situation in Vilcabamba, particularly in reference to the valley's original residents – for instance, how property prices have risen or how difficult it is for Ecuadorians to better their lives – they reply that the "gringos coming and spending money" and living there is a good thing, that this is "progress" and you can't stop it, and that there are good things about progress. They maintain that "Vilcabamba can't stay the same" and that Ecuadorians are "becoming more prosperous." Instead of moving away when they sell a piece of land, they assert, many of them keep part of it and use the money that they earn from the sale for their needs. In this way and others, including working for expatriates in various capacities, such as in construction, housekeeping, cooking, selling to them in their stores, transporting them in their taxis, etc., they believe that Ecuadorians are benefitting from the presence of immigrants, and that the effect is much more positive than negative.

More than once during our conversations about this topic, Blair has brought up an example for comparison: According to him, the residents of the Greek island of Paros have kept a considerable amount of the property and businesses for themselves; they were able to better their own lot by tactically using for their own benefit the increased popularity of the islands as a tourist and living spot, and they hire Albanians and others to work. On the other hand, on the island of Sifnos, people from Athens came and bought nearly everything, and the people from Sifnos therefore had to leave or live as workers for the people from Athens. Thus, he asserts that the Vilcabambeños who are able to respond like the people of Paros will be better off.

However, I argue that it may not be so much a matter of taking advantage of a situation as it is a matter of *being able to* take advantage of a situation. Because of the overall social and political-economic situation in Ecuador, local people have had little say or choice in a lot of what

has happened, and these changes have happened rather rapidly. Although it is true that many local people are better off in some respects, in some ways the quality of life of some Ecuadorians has deteriorated as a result of circumstances largely beyond their control, including the increased presence of foreigners. They have to contend with the higher prices for food and other goods, including land, which is now scarcer than ever. It may be a fact of life that this is the way the world is changing, and life may in fact not be fair, but this doesn't make it any easier.

Fortunately Blair is not like some of the other more recently-arrived gringos who move to Vilcabamba and want it to be just like the place they left, with all of the comforts of home (or more, since living in Ecuador is cheaper), where one can speak English and live just like they did before. Thus, according to an Ecuadorian informant, many expatriates "*no dejan de ser extranjeros*" (don't stop being foreigners). Rather than learning Spanish and adapting to and integrating into the new society, allowing for communication, interaction, mutual learning and understanding to occur, these folks, according to other interviewees, are more like "*conquistas*" (people who want to dominate), "*quitando*" (taking) and "*explotando*" (exploiting). Many of them do not treat Ecuadorians as equals. Their highly consumptive lifestyles, signified primarily by large and sometimes ostentatious houses, are an indication of the vast differences in the lives of most Ecuadorians and recent immigrants. Some arrive with large shipping containers full of possessions; they bring with them big belongings and big needs, and the gross differences are glaringly obvious. Even the "guest house" of a new immigrant may be considerably larger and much more elaborate than the house of a Vilcabambeño.

Some newcomers arrive with good intentions but go about trying to "help" or integrate themselves in an off-putting manner. A few have had access to funding to make positive changes in the area, but from the beginning, these projects have been about money and what

these individuals themselves identify as a need for help and change rather than about relationships, people, or locally perceived needs and wants. They have also often assumed that local people don't know; that they need to be taught and that the foreigners have the answers and can teach them. As E. F. Schumacher states, "As long as we think we know, when in fact we do not, we shall continue to go to the poor and demonstrate to them all the marvelous things they could do if they were already rich. This has been the main failure of aid to date" (2010 [1974]:211). In essence, cultural sensitivity has been lacking and control has not been put in the hands of local people, or at worst it has been taken away from them in a condescending and paternalistic manner. It would be helpful if those who wish to do forms of humanitarian work would raise their ideas with an attitude of modesty and not be so forward about handing out seed money. To the shock and dismay of some of these immigrants who want to do good things, they have been robbed and/or assaulted, at times leading to hospital stays. Some have left the area astounded and in fear.

Even immigrants who arrive as do-gooders often unwittingly disrupt cultural and economic patterns by overpaying, overtipping, and overhelping, which alters the expectations of local people, who regularly come to the conclusion that gringos are both filthy rich and pretty stupid people.

Most of these immigrants do not work, or at least appear to be unemployed, but are still able to live a lifestyle that is by Ecuadorian standards very affluent. On the other hand, there are very few jobs available for Ecuadorians; of those available, the average daily earnings range from $5.00 for an agricultural laborer to $20.00 for a master carpenter. Understandably, these enormous differences in circumstances tend to foster resentment and confusion among local people, and cause them to idealize life elsewhere even more.

5.0 DEVELOPMENT: THE GOOD, THE BAD, AND THE UGLY

Although the ideas of helping the poor, social justice, and charity date to antiquity, the idea of "development" as a *program* was first formalized under U.S. President Truman in 1950 with the Act for International Development. This is also the first documented use of the term "underdeveloped". Along with the 1944 Bretton Woods Conference, which established the World Bank, this piece of legislation signaled the beginning of the U.S. foreign aid establishment (Dichter 2003). Ever since, economic development, powered by material growth and measured by per capita income, has been a high priority. Although the definitive goal of development has been to significantly reduce poverty (Dichter 2003), its record to date has been dismal to say the least (e.g., Apffel-Marglin and Marglin 1996; Ferguson and Lohmann 2006; Lowder 1990; North 2003; Thompson 1993; Yapa 1993).

Development has also been closely associated with ideas of "progress" as determined not only by economic growth but by passing through supposedly linear stages from underdeveloped to developed, from subsistence to market-oriented, from traditional to modern, etc. (Thompson, et al. 2007); in short, it has been defined by what the West has achieved (Escobar 1991). Therefore, it is assumed, progress can be achieved through the transfer of technologies, knowledge, ideas, models, and practices from developed to developing countries, in a top-down and paternalistic fashion.

It is true that life expectancy has increased substantially; world economic activity has doubled every 20 to 30 years, raising per capita incomes; and our increasingly interconnected world has offered many of us much more diverse and stimulating cultural experiences than enjoyed by previous generations. Some argue that this demonstrates progress. However, considering other indicators paints a very different picture: There are still millions of premature infant deaths per year due to malaria, malnutrition, and poverty, which are all preventable; there are over one billion people with spending power less than the purchasing equivalent of $1.00 per day; the gap between the rich and the poor has grown; the global level of consumption exceeds the renewable resources of the planet by a factor of more than two; genocide, terrorism, and structural racism are wreaking havoc worldwide; and psychological illnesses related to poor mental and dietary health have been increasing for decades (Hulme 2009:250). So how do we "measure" or evaluate development?

5.1 WHAT IS "GOOD" DEVELOPMENT?

5.1.1 "Little d" development

Little d development is an underlying historical process (not simply an outcome which is focused upon), what Mitlin describes as "a foundational, underlying, and increasingly globalized form of social change" (2007:1704). It can increase resilience, adaptation, and security, and lessen vulnerability. With little d, people work together, learn from each other; communication and understanding are important components, as is social capital and synergy. It is often not deliberate or planned.

In the case of Vilcabamba, many of the long-term immigrants can be considered as cultural brokers. They have a way of bridging cultures; they can mediate between different people or groups. Thus, they are often able to reduce conflict or to produce change. In addition, their contacts from outside the valley, their experiences living and working elsewhere, and ideas that they've brought with them can be translated to their present context – a context that is well known and understood by them because of their long-term experience interacting, living, and working in the community. They often have the effect of broadening the horizons of others, opening their minds to new ideas, and helping people to learn and see things differently. This synergy works in both directions – from long-term immigrants to Ecuadorians and vice-versa. In this way, the old-timers and the Ecuadorians with whom they interact are feeling their way toward more just and sustaining social and economic relations.

In many respects, while in the field I was able to draw parallels between how the long-term immigrants interacted with people in the community and the practice of participatory action research (PAR)[57]; in a sense, they were performing PAR. When used in development contexts, PAR asks its facilitators to set aside their preconceptions of what a problem is and rather open themselves up to the words and experiences of the community members. Also important is a good sense of timing and continuity of commitment, which these long-term immigrants exhibit partly by the sheer fact of living there consistently and having the time as well as the concern to invest themselves in that manner. Other essential components include information-sharing and joint decision-making. Self-evolved groups and projects (sometimes referred to as bottom-up approaches), and gradual, sensitive, site-specific strategies are far more likely to succeed than

[57] Also called CPAR (Community Participatory Action Research).

inappropriate ones imposed from the outside (Kottak 2006; Kottak and Costa 1993; Kottak 1990).

In explicit development contexts, participatory development is a process in which communities or individuals join forces with outside actors to plan and carry out activities related to the community's social, economic, or cultural development. The main difference between gringo-local development and participatory development is that with participatory development, it is expected from the beginning that some form of development will occur. In both cases, though, the outsiders' *facilitation* is an important part of the process. In essence, what happens is that the distinction between the subject and object of the development effort dissolves, as both work to develop the knowledge and aspiration of the other (Appadurai 2004; Vigen 2010).

Consider the following quote from Curtis Hofmann, one of the founders of Colinas Verdes:

> One of the biggest challenges of my life was when I arrived in San Pedro...to become a local. I had to overcome my foreign paradigm and truly understand things such as how important it is to burn a piece of mountainside each year to plant corn. Eventually I did become a local...trusted as part of the community, and able to influence local thinking incrementally. I was elected to serve in various positions within community organizations, as well as Loja municipal government. I lived a life knowing that if someone needed me, I would be there, along with as many others as were needed. What goes along with that is the security of knowing that in my times of need, there are vast resources ready to respond.

Here Curtis discusses the difficulties of becoming a local – both being accepted as a local as well as feeling like you have become one. As he describes, it takes a lot of time to do so (if it does happen) and our own worldview, especially at first, can interfere greatly with understanding and communication. We have to learn to suspend our own judgments and opinions and work diligently to understand things from the point of view of local people. This is similar to the

process of doing long-term fieldwork, although many of us who do anthropological research never truly become a "local".

Curtis also describes the positive aspects of social capital, or the various resources (both tangible and intangible) that an individual accumulates over time through social relationships and networks in a particular place. Putnam defines social capital as "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (1993:167). The ability to accumulate and utilize social capital implies an overlapping (but not necessarily identical) understanding of cultural meanings and values that provides an amenable context for social interactions (Perreault 2003). The social capital that is built up between Ecuadorians and long-term immigrants who are well-integrated into the community is a valuable resource for facilitating actions and effecting change.

5.1.2 Examples of successful and ongoing development projects

5.1.2.1 Proyecto Toronche

A good example of little d as an underlying historical process, as well as how longer-term immigrants fill the role of cultural brokers and facilitators, is *Proyecto Toronche*, a conservation and drip irrigation project that benefited 28 families. This was the first official project of the newly-formed *Colinas Verdes* (see Sections 4.1.1 and 5.1.2.2), with an interest in conservation with development: In other words, in the protection of natural resources as well as financial gain for people. Joy relates that the water for the project comes from a place called El Toronchi and that the toronchi (genus *Caricaceae*) is a fruit that can be sold as well as appreciated by the wildlife in the forest: It grows wild, is eaten by animals, and can be grown, eaten and sold by

man. "How perfect is that," she states, "the toronchi to represent both aspects of the project, conservation *and* development?"

Although the members of *Colinas Verdes* (including Curtis and Joy Hofmann) did not want to prohibit agricultural activity in any way, they were concerned about the loss of biodiversity, habitat, and native forest that was occurring due to the current practices of slash-and-burn farming (see Section 6.1.2): In many cases, farmers would start a fire at the bottom of a hill, which quickly traveled uphill and was often left to burn for days or weeks.

Pastures were made on these hillsides in the following way: In the first year, the farmer would cut down the trees and other vegetation, burn it, and then plant some corn. During the second year, they would try to burn once more – although sometimes the vegetation would not burn well – and grow corn again. In subsequent years, they could usually grow pasture for cattle. Tree stumps that remained could be dug out by hand using straight metal digging bars. Similarly, Pearsall discusses a modified form of shifting cultivation that takes place today in the Jama River Valley in Ecuador, in which new fields are cut from forest (mostly second-growth), used for a few years (3-4 being typical), and then sown in pasture grass and effectively taken out of the agricultural cycle (2004).

In order to meet their goal of conservation with development, *Colinas Verdes* offered to do a "cow swap" with the 28 families who lived in the entire left margin of a watershed. It requires about one hectare of pasture in order to raise a cow, which, in the view of *Colinas Verdes,* makes that piece of land less productive than it could be if used for another purpose. What they suggested instead (on a hectare of land previously used as pasture) was planting a *huerto*, containing such elements as bananas, coffee, shade trees (including citrus, avocado, guayaba, guava), herbs, and cash crops. This system is multi-story, provides a number of

benefits and products, and because of the use of micro-drip irrigation, uses only a tiny amount of water.

Essentially, what the farmers were asked to do was to have one less cow, and in return, they were granted a cash reserve that they could draw from to purchase the materials to make their *huerto* a success (including fencing, plants, pipes, microsprayers, drippers, tools, etc.). The organization did not want to "give" the money or supplies to them, but instead wanted the farmers to feel like it was a trade-off, so that it would be more empowering. In other words, in exchange for raising one less cow, they had access to the money they needed to plant what they wanted to plant and to make their *huerto* better. In agreeing to do this, the farmers were taking a big risk, especially since they had a very hard time believing that such a small amount of water could be productive.

The total project value was $156,000, funded by the European Community over three years, with a smaller ($40,000) two-year extension funded by two Dutch governmental organizations. In order to establish the micro-drip irrigation, 2.5" pipe was used to carry water about 10 km downhill. Since the system was gravity-fed, a series of tanks were incorporated along the route in order to reduce the pressure back to atmospheric pressure.

Proyecto Toronche also included aspects of soil conservation, production of plants, and capacitation in the form of learning how to manage natural resources, including water. Other benefits of the project included cash income, increased food security, more diverse food sources, and environmental consciousness (e.g., regarding biodiversity, the benefits of native species, enhanced land management). In addition, people started to capture smaller water sources to put in even more *huertos*! Before this project, people didn't believe that you could irrigate with such a small amount of water.

The largest benefit, however, was not planned or foreseen. Because of the uneven and rocky landscape, the plastic pipes were left exposed in some areas. The agriculturalists realized that if they burned the land the way they had been doing (up the hill), it would probably cause damage to the plastic pipe that was exposed. This would be a stigma against them, because it would cause problems for others, shut the system down, etc. As a result, everyone started to be more technical and careful about burning: They created fire breaks, started burning at the top, burned in small portions.

Rather than judging the farmers for burning the vegetation or admonishing them not to do it, as other more purely environmental groups have done, *Colinas Verdes* brought about positive change in a more subtle and effective way. First, though, as mentioned in the last section, it was vital for Curtis and Joy Hofmann to truly understand "how important it is to burn a piece of mountainside each year to plant corn". Being able to do so, and owning a *chacra* (small farm), is a statement of being a "financially active person, a statement of manlihood, sort of like a modern-day American commuting to work" (Curtis Hofmann). Importantly, the learning took place in both directions: The people of San Pedro now understand and appreciate that the forest was protected as a water source, and they are very deliberate about controlling fires and protecting the watershed.

5.1.2.2 Colinas Verdes

The *Fundación para Conservación y Desarrollo Colinas Verdes* (Foundation for Conservation and Development Verdant Ranges) is a local non-profit NGO that operates out of San Pedro and consults with *campesinos* about their needs and about the kind of development

that they believe will most benefit them.[58] Established in 1994 by Curtis and Joy Hofmann and seven other individuals from San Pedro, *Colinas Verdes* works toward the following goals:

1. supporting alternative sustainable development in watersheds that protect water and important natural areas;
2. contributing to the reduction of environmental deterioration through actions that raise people's awareness of the problem;
3. encouraging inter-institutional agreements, promoting actions of common interest in the region that incorporate conservation criteria and actions and the protection of the environment; and
4. strengthening the institutional capacity of *Colinas Verdes* so that it can fulfill its objectives and plans.

Its specific objectives include the successful implementation of productive, agroindustrial, conservation, educational, and integral projects in order to raise income levels; increase the availability of jobs; improve health; and provide balanced nutrition, with the ultimate goal of bettering the quality of life of individuals.

Colinas Verdes works with associations of small farmers (rather than individuals) who come to them for help. Beneficiaries of their projects earn between $951 and $1,500 annually, which is particularly meager considering that the average size family in the area consists of six people. Since it is a non-profit organization, outside funding is sought for specific projects from development agencies worldwide. Since 1995, *Colinas Verdes* has carried out 21 projects. It is also involved in various local activities, such as helping with small animal breeding and production (including c*uyes* (guinea pigs), chickens, and pigs), irrigation systems, and teaching

[58] http://www.colinasverdes.org/

local children about school gardens and natural resource conservation. Because they are located in a rural area and in the south of Ecuador, it is exceptionally difficult to access opportunities, calls for presentation of projects, and capacitation (training and other support and strengthening for the organization) (Hernán González, personal communication, February 15, 2007).

Two of their largest projects at present encompass *achira* (canna, arrowroot) and coffee. *Achira* is a traditional Andean cultivar; increased production of *achira* (see Figure 13) responds to the rising demand for natural foods. The starch is used as a thickener and to make puddings, jellies, and baked goods such as the traditional *bizcochuelos*, desserts similar to plain cupcakes. The project for the production, processing, and commercialization of *almidón de achira* (canna starch or flour) benefits 35 families involved in the *Organización Agroartesanal La Achirita* of Quinara and Palmira. Although the people in this area were traditionally *achira* growers, more recently they had been growing *achira* for personal family use, and achieved limited market sales at the local markets in small quantities. This project has helped with larger scale marketing beyond the closest towns and with the mechanization of the production process, which before was very labor intensive. Included in this project are the infrastructure, capacitation, and promotion that are required to form and sustain the small business.

Figure 13. Transporting *achira* to be processed

While I was doing fieldwork, the Consul General of the U.S. to Guayaquil, Doug Griffiths, came to visit my fieldsite, and during this visit we went to *Colinas Verdes*. Mr. Griffiths and his assistant, Public Affairs Officer Danuta Guzowski, learned about what the organization is involved in, especially the *achira* project. This was the first such visit of its kind, and the employees of *Colinas Verdes* were happy to be recognized for the work they are doing in the area. In Figure 14, pictured left to right are Edin Aguilera (Director of *Colinas Verdes*), myself, a Peace Corps volunteer, Doug Griffiths, Danuta Guzowski, another Peace Corps volunteer, Edwin Cabrera (agronomist who works at *Colinas Verdes*), Joy Hofmann, and Sra.

Mercedes (Miche) Lanche. The disappointing aspect of this visit was that it was clear to me that several of the employees of *Colinas Verdes* were hoping to see something more tangible come from this visit (in terms of funding or other such support), but the exchange was basically an informational one.

Figure 14. Meeting with the U.S. Consul General to Guayaquil at Colinas Verdes

The coffee project aims to improve and diversify the production of coffee and the other products of the *huertos* in which they are grown. One of the goals is to improve the quality of

the coffee that is produced in order to increase the likelihood and success of exportation. Other aspects of the project include training and education, infrastructure, and the founding of small businesses to process and commercialize the final product. *Colinas Verdes* has helped to construct three *invernaderos* (greenhouses, for the initial phases of growing) and eight *marquesinas* (shelters for drying coffee beans, see Figure 15). There are five groups of coffee producers (roughly 100 *cafetaleros* – coffee growers) involved in the *Federación Regional de Asociaciones de Productores y Expo rtadores Ecológicos de Café del Sur* (FAPECAFES – the Regional Federation of Associations of Ecological Producers and Exporters of Coffee of the South [of Ecuador]). This is clearly an ambitious project, but builds on the previous experience of *Colinas Verdes* in working with coffee growers in the surrounding area of Vilcabamba.

Figure 15. A *marquesina* in construction

One of the biggest problems faced by the small agriculturalists is the low price that they receive for their products. People lament the fact that most of the money goes to the intermediaries. Part of the intent of *Colinas Verdes* is to avoid the intermediary; thus, the producers have to be trained and prepared for all phases of production, processing, and commercialization. For instance, the coffee project supports growers throughout all stages of coffee-growing: The starting of seedlings, planting, pruning, harvesting, washing and drying the seeds, testing the quality of their coffee, grinding, and packaging. However, it is also important

that a more stable and equitable pricing policy be put into effect within Ecuador (DeWalt 1993; Lefeber 2003).

The importance of and need for organizations such as *Colinas Verdes* is attested to by the comments of various individuals:

"*La gente necesita capacitación y educación del campo. Es en un estado de desamparo. El gobierno no les protege. La educación no llega al campo.* (The people need capacitation and rural education. It is in a state of neglect. The government does not protect them. People in the countryside are not educated.)" ~ Ernesto Ávila

"*En otros países el agricultor tiene su segur o, pero aquí no. Aquí es de sconocido. No hay nada, no hay ningún apoyo en eso. No hay dinero para pagar la mano de obra. Hay préstamos pero con términos muy altos. Es un riesgo.* (In other countries the farmer has his security, but not here. Here he is unknown. There is nothing, there is no help for this. There is no money to pay the workers. There are loans but with high terms. It is a risk.)" ~ Edin Aguilera.

Like the interactions at *Colinas Verdes*, the experience described by Becker and Ghimire (2003) at Loma Alta in western Ecuador also demonstrates how cultural exchange can be a source of new ideas for solving long term problems. Although at times development and Western science have served to severely erode traditional ecological knowledge (also called local or indigenous knowledge) when that knowledge was not deemed valuable, in the case at Loma Alta, the influence of modern scientific knowledge helped the community to understand the importance of fog capture for the water supply in their 6,842-hectare watershed. This spurred them to curtail the destruction of their moist forest commons: The community modified land allocation patterns and set rules of use for the forest, establishing the first community-owned

forest reserve in western Ecuador. These types of examples demonstrate that Western science and knowledge can offer a broader understanding of context beyond the local level which may actually favor local sustainability.

5.1.2.3 Agroforestry, *Huertos* and FAO

Several years ago, Bernarda Bravo (see Section 4.1.5) began an agroforestry project which, after considerable effort, she and the other Ecuadorian ladies she worked with were able to convince the Food and Agriculture Organization [FAO] to support. The reason for the difficulty was that at the time agroforestry projects were relatively unknown, and FAO representatives kept saying "*no es forestal, es un huerto* " (what you are suggesting is not a forestry project, it's a vegetable garden). However, it was both, with plants growing under the trees, and was therefore a typical and traditional *huerto* for the area.

According to Bernarda,

> In 1990, a project began for rural small-farmer forest development. In one of the areas chosen, the reality was that the people, especially the women, had home food gardens, which were truly agroforestry, with a lot of agroecological features such as protecting soil, managing water, etc. So, these gardens, I felt, were truly a germplasm bank, with lots of functions – social, economic, environmental, nutritional, as a place for families and relatives to get together. They were really the families' pantries. If visitors arrived, the mother of the home would immediately go to the garden near the house, and pick carrots, potatoes, beans, etc. and make soup. Or, if they wanted something simpler or more complex, depending on how you see it, she would take lots of herbs and flowers and make our traditional Loja *horchata*. If she had to go to church for her spiritual needs, she would take flowers to put at the altar, or to accompany a funeral. As a gift to a neighbor, she could take seeds or cuttings from plants that the neighbor admired. So these gardens were the venue for thousands of their life activities in the place where the project was going to be implemented. One reality of this project area was that families' lives revolved around their food gardens, important especially to the women. The *huerto* could not be left out. So, we proposed to emphasize, through the project, these *huertos*. And the "obvious" answer from the forestry project top management all the way down to the lowest-rung forester, was total opposition, because fruit trees (which there were in the *huertos*) were *not trees*. Sounds hard to believe, but they really said this. This was a forestry

> project, so they needed to plant trees – real trees, not fruit trees! The solution was – in order to persuade all the decision-makers – to put shade trees, as windbreaks and hedges, around the *huertos* to protect them. That was how other people began to know and learn about this marvelous way of handling a little piece of land as a way to enhance life and truly develop, *which the people already had*. Ultimately they made a book about the *huerto* system, published by the FAO project.

Once again, we see an example of a very valuable indigenous strategy that does not need to be replaced, but simply be understood, augmented, and supported. This also further substantiates what Bernarda Bravo and Samuel DuBois have said (Section 4.1.5), which is that the two key ideas that are indispensable for long-term accomplishments and progress in terms of development in the area are *persistence* and *communication*.

Bernarda also had to be persistent in trying to convince the 30 women who were originally involved that "*¡Sí, se puede!*" (Yes, you can!). The women that worked with Bernarda now give her credit and say that if it weren't for her encouragement, the project would have never gotten off the ground. What Bernarda did was coach the ladies to petition the project management, because they refused to include *huertos* in the project, but the local women pressed their case until the decision-makers came around. This part of the project became the most important and successful part, and as a result local governments and NGOs also began to support it. Now, there are hundreds of women involved in the project along with their families, and there are also some men who help out with certain tasks, such as carrying heavy objects and with marketing. The women grow and work with flowers, bees, fruits, medicinal herbs, stevia, and vegetables. In addition, they practice soil conservation, worm farming[59], and organic gardening. One of their most important products has been the combination of 28 herbs and flowers that are used to make *horchata*, a delicious and popular drink typical of Loja province (different than the

[59] Spanish: *lumbricultura*. Worm farming (vermiculture) is a form of composting and creates an excellent fertilizer.

milkshake-like beverage of the same name, which is found from the Southwestern U.S. to Northern Ecuador). They are now drying the herbs and flowers for their *horchata* (*La Tradicional*, the Traditional One), and other people are copying the idea. For instance, one derivative of this prototype is a women's group in another rural community that has set up another brand of dried-herb horchata. Other versions are run on the corporate model, such as that of Supermaxi, a large supermarket found in the cities of Ecuador.

5.1.2.4 Tempeh

Several years ago Sue Mann (see also Section 4.1.4) moved to Vilcabamba from Quito. Knowing that it is common for residents of Vilcabamba to start businesses similar to those others have already started affirmed her conviction to try to start a business there that would not be in competition with other people. Knowing the importance of place and culture – in other words, the "fit" – of any new enterprise, she spent time there observing and interacting with people. One thing that she noted was the dearth of good vegetarian choices for tourists and for foreigners living there. Having previous experience with making tempeh, a high-protein food made from partially cooked and fermented soybeans, she began to make the product, hoping to convince the owners of local restaurants and others to purchase it. She then traveled around town, giving out samples of the product and explaining how to cook with it.

Sue received mixed reactions to the tempeh. One prominent Ecuadorian restaurant owner who had befriended her said "*Pobre gringuita*, that stuff will never begin to sell in Vilcabamba!" *Pobre gringuita* translates as "poor gringa", and the *–ita* on the end signifies endearment; in other words, you poor thing, it's a silly idea to think that this stuff will sell here. It was such a different food source, one that they were clearly not accustomed to, but at the same time, Sue

saw possibilities in this particular place, especially because of the tourists passing through and the immigrants who were more familiar with soy products.

Interest slowly started to build among local businesses and families. As Sue's business picked up, she eventually began to consider who she could take on as partners in the business; people to whom she could transfer the knowledge and skills of tempeh-making and marketing. Her criteria were that the person(s) not only had a strong interest in taking part in the venture, but also 1) needed the money; 2) had good relationships with others in the community, and contacts to sell to; 3) were honest; and 4) were very persistent and dedicated to doing what needed to be done. This latter involved following the procedure used to produce tempeh to the letter, and repeatedly visiting with or calling customers to touch base with them and to see if they needed tempeh. In other words, the person(s) would have to understand that the people won't come to you when they need tempeh; rather, you have to keep going to them. It was not an easy search, and required time and thought.

Sue finally chose the family of her former landlady, consisting of a mother, two daughters, her son and his wife. She began with training the latter two individuals, and now the whole family is involved. Though the son's wife has left, the family is still producing tempeh. At one point, they received complaints that the tempeh wasn't quite right, and after a painstaking examination of what had gone wrong in the process, it was found that the couple had changed one seemingly minor part of the procedure, which has since been restored. They have expanded their sales and are now selling the product in the city of Loja.

5.2 WHAT IS "BAD" DEVELOPMENT?

Since the mid-1940s, the idea of development has grown into an industry. Therefore, it has had to become organized, and there are professionals, development institutions, and bureaucratic imperatives associated with its existence. Dichter argues that the side effects of this organization have not only been counterproductive, but sometimes harmful, and that this explains the many failures of development – what he terms the "great paradox of development assistance" (2003:5). Because development has become so highly organized, other agendas have inevitably crept into the mix, and the original instinct to help has become muddled by institutional and bureaucratic imperatives.

This sort of development is associated with the blueprint model – assuming that an idea or project that works in one place will transfer to another, without taking local culture, social organization, or ecology into account. It has also provided oversimplified "solutions", demonstrating a lack of understanding of the breadth and depth of a "problem".

5.2.1 "Big D" development

What is sometimes referred to as "big D" development is the managed economic change that began after World War II, provided by secondary agents who are seemingly disinterested parties on behalf of others. It usually involves deliberate goals and public policy objectives; therefore, it can also be described as targeted intervention (Mitlin, et al. 2007) in the literal sense of the word 'intervention', where funds, technologies, and expert advice, much of it from the rich world, are channeled into the poor world (Hart 2001). At its core is an unquestioned "ironclad faith in a

way of life" (Dichter 2003:49), where it is believed that scientific progress and technology will provide the keys to future progress.

Dichter (2003:50-53) discusses the five antecedents to big D development. The first is the idea of progress, which is equated with both positive change and the future. The second antecedent is the notion that humans can make their own history or be agents of their own destiny, which entailed a shift from the idea of being *acted on* to being an *actor* in history. Both the first and second antecedents originated with the Enlightenment and thus are Western ideas.

The third precursor to big D is that people began to act for others, even though at times, most notably during European colonialism, those actions were at the same time self-interested. Before this, the primary beneficiary of an action was its agent. The fourth forerunner was the gradual shift to viewing poverty as a deplorable condition. There had always been notions about poverty before this, of course, but the idea needed to become generalized and associated with underdevelopment before the modern endeavor could begin. The last antecedent is the idea that government had a role to play in development.

One long-term resident, originally from another part of Ecuador, related the following:

> Development with a capital D has come in, brought about by the excesses of North Americans who expect to or want to continue that same way of life here, without realizing they are in a different hemisphere, culture, altitude, country, etc. Houses with swimming pools, spas, stables, exotic gardens. Consumer culture to the hilt. Legal and illegal real estate sales exclusively by foreigners who want to make at least $3,000 per month (while the locals are making $2,880 per year -- $240 per month) to "maintain" their standard of living (while locals don't have the luxury of choosing any standard). Imposition of Western views in a town that does not accept yet that it is *mestizo* and is trying to be all white but keeps its ancient pre-Inca customs like community in place. Identity that is lacking on the part of the locals that makes it easier to be mentally colonized by any stronger outsider. This is like a wild west here at this time...you see people horsing about from property to property, in a caravan; they bring their US dollars that buy them so much more here than there, to purchase entire mountains for the cost of a mere house in the US, with sights to develop the mountains into an "ecovillage" (is the latest adjective), "sustainable" (is another favorite), cutting them up into small lots

> to make money, lots of money -- they have found out that land is no longer being made anywhere, and are hot on its trail, the more the better. We, the locals, are left with no walking trails, those we used to go on on foot just to walk on them or to get us from one place to another [now see signs saying] "PRIVADO-NO PASAR"; our children can no longer afford to stay in the town where they were born; we no longer have land where we can raise our crops and nourish our family. Yes, the locals sold to foreigners. The locals distributed the cash among their large families as inheritance, and each one spent their $10 or 20 thousand, and now has to be an employee of the new landowner or purchase every little thing from the *tienda*, even the *yuca* and *plátanos* which still grow on the land that is no longer theirs. It is sad.

Even though this version of big D that has infiltrated the Vilcabamba valley is not the most frequently discussed form in the literature on development per se (i.e., that brought about by actual development agencies), it shares the same tenets, such as: Transplanting a way of life from one place to another (reminiscent of "we will not negotiate our way of life"), imposing the latest ideas of what is "good for" a place and people (economic development, "sustainability"), and having little regard for its series of effects as well as little respect or consideration for autochthonous individuals. In addition, it demonstrates how newcomers are generally viewed as colonizers, acting as if they're settling the frontier of the Wild West, and bringing their highly consumptive lifestyles with them. She also touches on the fact that the locals think of themselves as, or wish to be, white, and how they lack a sense of pride in a common identity, something that will be discussed in the following chapter in terms of its problematic nature.

5.2.2 The prevailing importance of economics

Newcomers to the valley are inclined to say things like "this is the way the world is changing," as if this should be accepted and as if it's inevitable. Some of them feel good about the fact that they are funneling money into the local economy, chiefly through purchasing real estate but also

by employing local people in construction, housekeeping, clothes washing, cooking, transportation, and landscaping. Others say that the money they paid for their land should "set them for life" (referring to the Ecuadorian who sold them their land). Unfortunately, as the quote above indicates, in most cases it does not make their life much easier in the long run, and what they lose is far more than what they gain.

These points of view are consistent with the way issues are framed within big D development. It is expected that the benefits will "trickle-down" to where they need to go, that the mechanisms of the market will work their magic and eventually improve the lives of those at the bottom. It is also in line with the view that poverty has resulted from a lack of development (or from underdevelopment), and that economic growth will solve a number of problems. From the mid-20th century onward, the main criterion of successful development has been whether per capita incomes have risen.

Today, this sort of thinking is reflected in the Millennium Development Goals (MDGs), eight international development goals that all 193 United Nations member states and at least 23 international organizations have agreed to achieve by the year 2015. Three of these goals and their targets are directly related to the present research:

Goal 1: Eradicate extreme poverty and hunger

> Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day
> Target 1.B: Achieve full and productive employment and decent work for all, including women and young people
> Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 7: Ensure environmental sustainability

> Target 7.A: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Goal 8: Develop a global partnership for development

Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system. Includes a commitment to good governance, development and poverty reduction - both nationally and internationally
Target 8.B: Address the special needs of the least developed countries. Includes: tariff and quota free access for the least developed countries' exports; enhanced program of debt relief for heavily indebted poor countries (HIPC) and cancellation of official bilateral debt; and more generous ODA (Official Development Assistance) for countries committed to poverty reduction
Target 8.C: Address the special needs of landlocked developing countries and small island developing States
Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.

Goal 1, to eradicate extreme poverty and hunger, along with its three targets, mention nothing about where these jobs and food are going to come from. In regard to Goal 7, to ensure environmental sustainability, there are four targets. One is to "integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources." Here, the principles of sustainable development are still simply to "meet the needs of the present without compromising the ability of future generations to meet their own needs," as defined by the Brundtland Report in 1987. Importantly, the Brundtland Report also states, however, that no single blueprint exists for sustainable development, because

conditions vary among countries; therefore, each country will have to create its own approach to reflect its needs (World Commission on Environment and Development 1987). The second target (7.B) is clearly related to sustainable development: To significantly reduce the rate of biodiversity loss, although this target was not met by 2010.

Finally, Goal 8 is to develop a global partnership for development and, as with the other two goals discussed here, the plan is to meet this goal in a top-down, ill-defined manner. There is really nothing new here in terms of plans to implement this development. Once again, we are talking about market-driven development, which only works when states are highly supportive. Important factors are rural-urban balance, strong domestic markets, coherent and effective public institutions, an educated population, and social well-being (North 2003).

Ecuador's macroeconomic, trade, and sectoral policies, like those of other countries, have favored intensive agriculture (Lee and Espinosa 1998). The reduction of explicit and implicit subsidies for pesticide use represents a small step toward more economically rational and environmentally beneficial farming practices, but considerably greater efforts and policy changes are required. In addition, as outlined above, market-driven development requires a supportive state in order to be effective. The likelihood of this happening in the near future is extremely slim, so perhaps we can focus our attention instead on individual consumers and their role in social networks and movements.

5.2.3 Examples of failed development

One of the most discussed long-term development projects and examples of modernization theory in action in the Andes was the one at the hacienda Vicos, beginning in 1952 in the central highlands of Peru (Dobyns, et al. 1971; Lynch 1982; Stein 2003). Vicos, also known as the

Cornell-Peru Project, combined land reform with community development, and experienced a number of successes but several disappointments as well. The community of Vicos was eventually able to purchase the hacienda that they formerly worked on as indentured servants, and the project did result in advances in education and community empowerment. Among the unfortunate outcomes, however, were loss of biodiversity; the unsuitability of the introduced beef and dairy cattle to the environment of the high Andes; and widening economic disparities. Also, although the Vicoseños experienced increased yields the first few years after they adopted the new potato varieties and chemical fertilizers, the introduced varieties ultimately failed due to ecological incompatibility with the local environment, and today they are struggling to rebuild the fertility of their land (Vigen 2010). Taken together, these consequences are due to a lack of understanding of local ecological, cultural, and socioeconomic realities. According to Starn, the project at Vicos was a prime example of the idea that peasants "needed a dose of Western initiative and modern technology" (1991:79). To some extent, this unabashed paternalism and faith in the power of technology and technology transfer continues today.

Ferguson and Lohmann (2006) have pointed out that development agencies often paint a picture of a place that fits with the institutional needs of these agencies, making the site appear suitable for the development that they can offer. Discussing the history of development projects in Lesotho, they state that development officials used "'development' projects as tools to grab hold of and transform a portion of the country according to a pre-determined plan, assum[ing] that the projects were givens and all they had to do was 'implement' them" (Ferguson and Lohmann 2006:167). Here as in other problematic development projects, the requisite answers to specific, localized, and pertinent questions are often not pursued beforehand in order to

determine the most appropriate and effective development plan. This, the authors assert, is why many projects fail, even in their own terms.

Jedlicka and Bonnekessen (2001) discuss the failure of a development project in Baja California in which intervention took place solely through agents with business and technical proficiency who were lacking a cultural understanding of the people with whom they worked. The development effort involved 40 Mexican families who were going to grow winter flowers, with the possibility to earn as much as $2,000 per acre of planting. Three community leaders received training on how to grow and care for the plants from extension technicians, after which these leaders were to explain the project to other community members. The senior consultant left for a period of two months, which was the time period agreed upon to initiate the flower industry.

However, no one came to the flower company in San Diego to pick up the cuttings that were prepared for the community members so that they could start their plantings, and there was no way to contact anyone in the community to see what happened. After a week the cuttings died, leaving the manager of the flower company very angry. The development consultant had assumed that the leaders of the community project would react as he would and contact the owners of the flower company should an unforeseen contingency arise. In doing so, he did not take into consideration, and probably did not know, the various differences in life experience and culture. Instead, he presumed that the three leaders would adjust or react if something unexpected happened, like North American small businesspeople do when obstacles arise, or at the minimum would contact him for advice.

When a community leader was reached and asked for an explanation, he said that the banks charged a 50 percent interest rate on a one-year loan, and since there was no way they

could take on such a debt, they saw no reason to continue with the project or to contact their former business associates to explain the situation.

Their case illustrates the complications that often arise when a project is designed in a Western country but put into practice in a developing country that is quite different in terms of cultural, political, socioeconomic, and ecological factors, and the failures that result when there is no consistency or follow-through while a development project is being carried out. The authors stress the need for collaborative research between a social science such as cultural anthropology and the discipline possessing the necessary technical know-how in order to develop a holistic framework for the project that will ease its impact and make it more successful.

Further, Keese (2001) discusses a recurrent problem within development projects in Ecuador and elsewhere when supplies and other giveaways are offered without education and technical assistance on how to properly and effectively use them, which greatly limits the possibility of achieving lasting positive results. In Ecuador, paternalistic projects have been the norm for some time, and projects are often administered in a top-down fashion. According to Maximiliano Ochoa, who works for Ecuador's *Instituto Nacional Autónomo de Investigaciones Agropecuarias* (INIAP, the National Autonomous Institute for Agricultural Investigation), common shortcomings include a lack of capacitation for the individuals targeted by projects and the fact that projects do not continue on long enough so that they can sustain themselves afterward (personal communication, June 22, 2008).

5.3 CONCLUSION

In this chapter we have discussed different conceptions of development; specifically, forms that are more apposite and integrated with their respective societies in contrast to forms of intervention that are imposed from the outside, which are generally much less successful. Table 5 outlines the major differences between development with a small d as contrasted with development with a capital D. Several aspects of this table are fleshed out in other chapters of this dissertation.

Table 5. A comparison of features of little d with those of big D development

little d	big D
Underlying process of social change, synergy	Managed economic change (especially post-WW II)
Flexible learning-process model	More rigid blueprint model
Bottom-up	Top-down, trickle-down
Horizontal relationships; social capital important	Vertical relationships, hierarchy, paternalism
Heterogeneous	Homogeneous
Work within constraints of the system; Context important (social, cultural, ecological)	Focus on "solutions" - reductionist/oversimplified (inputs, modern technology, technological transfer)
Continuity, integration, communication, involvement, resilience, adaptation	Targeted intervention, sometimes lack of continuity
Transdisciplinary, involvement of various stakeholders, integrated knowledges	Not interdisciplinary/integrated/problems with 'parts'
Education, capacitation, livelihoods, quality of life	"Progress", rates of employment, GNP
Eases problems of change and 'modernity'	Lack of consideration of local sociocultural and ecological factors

6.0 CLIMATE & CULTURE CHANGE: NATURE & LIFE ARE CAPRICIOUS

6.1 CLIMATE CHANGE: HUMAN IMPACTS VS. NATURAL VARIABILITY

Examining this material through the lens of cultural ecology and ecological anthropology provides enlightening results. The subject of climate change is popular in both public and academic circles, and it is now widely agreed and accepted that human actions can have impacts on the environment in the near and long term, impacting sustainable development in various ways. It is not yet known how much of the climate change that the world is experiencing is due to human activities or to natural variations, and this may never be well understood. Surely it is some combination of the two. Among my field consultants in southern Ecuador, some believe that the periods of drought that are experienced are due to natural climatic cycles; the majority of individuals, however, chiefly blame humans. Those who discuss climatic cycles in detail tend to be those possessing a higher-than-average amount of ecological knowledge, such as agriculturalists or some persons who are more formally trained, for example some agronomists and biologists. With the current focus on human impacts on the environment, it is understandable that many people blame humans for various environmental problems, and it is undoubtedly the case that humans *have* contributed to environmental problems in various ways. There are individuals who have been active in the community in order to try to raise awareness of the problem. During my fieldwork, for instance, the film *An Inconvenient Truth* (translated

into Spanish by someone present with a microphone) was shown in the town square as part of a bimonthly film series. There were also campaigns against the use of fire to clear land.

An ethnographic theme in relation to climate change involves the notion that both life and nature are capricious, which further illuminates the character of human-nature relationships. Two sayings that I heard frequently during participant observation and interviews are that "*El clima está loco* (The climate is crazy)" and "*No me ayuda el clima [porque ha cambiado]* (The climate doesn't help me [because it has changed])." For one thing, the climate has become harder to predict. Luz Ortiz, age 44, stated that "*Antes era un poco más frío el clima aquí. Cada estación estaba determinada. Diciembre hasta ma yo llovía mucho. En junio siempre estaban lloviznando, haciendo mucho viento y frío. Ahor a no. Ahora no se sabe cuando es invierno ni cuando es verano. Normalmente n unca antes llovía en Julio.* (Before it was a little colder here. Each season was fixed. From December until May, it rained a lot. In June, it was always drizzling, very windy and cold. Now it's not like that. Now one doesn't know when it's winter or when it's summer. Before it never rained in July.)" Similarly, now, said Jorge Mendieta, "*No sabe en qué mismo estamos, si es tamos en ju lio o en en ero*. (One doesn't know in what [month/season] we're in, if we're in July or in January.)" Normally, in January it would rain nearly every day. It used to not only rain more often in the winter, but it rained harder, for longer periods of time, and with thunder and lightning. Jorge also said that "*La lluvia no es como antes. La lluvia venía con más fuerza, con relámpagos, con truenos, y era diferente, totalmente diferente*" (The rain is not like it was before. It came with more force, with lightning and thunder, and it was different, totally different.)

Several interviewees talked about how on October 4th, like clockwork, people used to prepare their fields and begin to plant, and that the rains would start immediately thereafter.

However, "*ya no hay las reglas* (now there aren't those rules)", and some people wait until January to plant. "*El tiempo está loco. Es más difícil predecir.* (The weather is crazy. It's harder to predict.)," said Hernán González, age 40, an agronomist who works at Colinas Verdes. All of this has added to their sense of risk and vulnerability.

People also describe how the sun is stronger than it used to be; that it is both colder at night and hotter in the daytime than before; that the seasons blend; and that overall, there is now more summer and less winter than before, when there were approximately six months of each (October through May was *invierno* (winter), or the rainy season; June through September was *verano* (summer), or the dry season).

In reference to what are considered naturally-occurring climatic cycles, Robert Vicente Yaguache Ordóñez, an employee of CEDERENA (*Corporación para el Desarrollo de los Recursos Naturales Renovables*) stated that "*Habían sequías fuertes en el '68 y el '82. Algunas personas se fueron por las sequías, no por los ca mbios climáticos. Es un ciclo natural de sequías que ha habido siempre, es como El Niño. Pero no es que la sequía de '68 fue por el cambio climático. ...Estas sequías son cíclicas , se presentan cada cuatro años pero es como normal, como el fenómeno del Niño.* (There were severe droughts in 1968 and 1982. Some people left because of those droughts, not because of climate change. It is a natural cycle of droughts that has always occurred, like El Niño. But it is not that the drought was due to climate change. …These droughts are cyclical; they occur every four years but are more or less normal, like El Niño.)"

Robert went on to state that the variations of the seasons and other destabilizations and modifications discussed by informants (above) are probably due to climate change, in which humans have played a part. This includes ongoing desertification, which is a topic of concern at

local, national, and global scales, and results from a complex web of human and natural causations (Dillehay and Kolata 2004). Pancho Wachisaca, age 52, similarly describes the cycles of drought and their connection with migration: "*Habían épocas de sequía. En los años que terminan en 8 muchas veces habían sequías. Por ejemplo en el ano '68, la gente no podía sobrevivir, migró al Oriente. Gracias al riego no ha salido todo* . (There have been periods of drought. In the years that end in 8 a lot of times there have been droughts. For example in 1968, the people could not survive, they migrated to the *Oriente* [Amazon region]. Thanks to irrigation not everyone left.)"

During the interviews, the three most discussed ways in which humans have impacted the environment and climate change locally are deforestation, fires, and the indiscriminate and excessive use of agrochemicals. Of course, these three topics are in some ways interconnected and also lead to other problems, such as the loss of topsoil, erosion, and desiccation, all of which are forms of land degradation.

In regard to all three practices, people should not be condemned or simply lectured to stop, as often occurs with environmentalist activities, government regulations, development programs, and the purely natural science point of view, where humans are often left out of the picture. The circumstances and histories of all three are complicated, and there are many reasons why they continue. I will discuss each of them, in turn.

6.1.1 Deforestation

The practice of deforestation has gone on as long as humans have existed (Dillehay and Kolata 2004; Redman 1999; Sarmiento 2002). The need for firewood, less pressing now than in the past (in part due to subsidies for tanks of natural gas in Ecuador), was a considerable cause of

deforestation. The reasons for felling trees are myriad, and it has only been in relatively recent times that science has begun to reveal the impacts of this practice. Obviously, sheer economics is another reason that people cut down trees. Felling trees and selling them is one way of making money and it is particularly tempting to do so when there are so few employment options. The list of uses for cut trees is quite long and there are also reasons that people want to clear land of trees. Hernán González stated with a touch of irony, as he shook his head, that "*Los Lojanos siempre son buenísimo para tumbar y quemar la montaña. Piensan que es más bonito un terreno sin árboles*. (Lojanos are always very good for cutting and burning the mountain. They think that a piece of ground is prettier without trees.)"

In some cases it is not people's sense of aesthetics but their beliefs that cause them to clear land of trees. For instance, Bernarda Bravo and Sam DuBois own a farm on which they have planted 17 species of trees, including *cedro* (cedar), *ciprés* (cypress), *capulí* (wild cherry), and *pino* (pine). Some of these trees are planted in rows as windbreaks, which block the wind and hence protect crops and other things that can be damaged by wind. He states that Ecuadorians used to think he was crazy and that it was better to cut down trees. One reason is that they thought the *hojarasca* (leaf litter) would inhibit plant growth. This is true of eucalyptus trees, which have been used extensively in reforestation projects throughout Ecuador, although they are not native to the local ecosystems. These trees function much like water pumps, however, drying out the land around them, and they do in fact have allellopathic chemicals in their leaves and exuding from their roots that inhibit the growth of other plants around them. Therefore, Ecuadorians were right in their initial observations that "trees are bad". They have since changed their mind, have learned the benefits of trees, and now have a *vivero* (nursery) in the area with native trees.

Bernarda and Sam have worked hard to interact with and teach people that the relationship between humans and Nature (Sam says that he likes to capitalize his Mother's name) should be one of stewardship and interdependence, and that in order to do this, individuals just have to be taught "how not to ruin it." Bernarda describes the human-Nature relationship this way: "*Somos interconectados. E stamos conectados di recta e indirectamente en m ontones de sentidos. Es una pena porque ahora con la ra cionalidad occidental no hay una conexión – nos desconectamos de nuestra esencia espiritual . No valoramos la Naturaleza porque no entendemos y no respetamos. Estamos apart ados de nuestro hogar que es el planeta .* (We are interconnected. We are connected directly and indirectly in many ways. It is too bad, because now with Western rationality there is no connection – we disconnect from our spiritual essence. We don't value Nature because we don't understand it and don't respect it. We are separated from our home, the planet.)" She went on to say that the people don't *know* that they don't have to cut down trees, use chemicals, or set fires; that they don't *know* how much damage these practices do. That is, they don't realize the enormity of the damage caused. Bernarda and Sam repeatedly stress, as have others that have had a positive impact upon development in the area, that words mean nothing and an example is much more influential.

Bernarda, speaking of our alienation from Nature, mentions something from the Baha'i writings:

> Ages have passed and your precious lives are well-nigh ended, yet not a single breath of purity hath reached Our court of holiness from you... Notwithstanding, ye walk on My earth complacent and self-satisfied, heedless that My Earth is weary of you and everything within it shunneth you. Were ye but to open your eyes, ye would, in truth, prefer a myriad griefs unto this joy, and would count death itself better than this life. (Baha'u'llah, *The Persian Hidden Words*)

6.1.2 Fires

The practice of setting fire to land, chiefly in order to clear it, is another point of contention within the population. There are also penalties for setting fire to land without a permit, although these penalties seem to be seldom enforced.[60] Particularly during the dry season, these fires often burn out of control, and enormous swaths of land are burned, putting people, houses, and animals in danger, in addition to the resulting loss of vegetation and ensuing erosion and desertification. Some older individuals say that this is a modified version of the practice of slash-and-burn, in which controlled fire is used to clear smaller garden plots.

In the fall of 2006, during my fieldwork, there were many fires. For instance, in a span of nine days, from October 15th until the 24th, 2,500 hectares (6,178 acres) were burned, with 18 fires registered in Loja province (Crónica 2006a). The reasons for the fires were lack of rain and high temperatures combined with the "*escasa capacitación de algunos agricultores para que no prendan fuego en sus parcelas* (the lack of training of some farmers so that they don't set fire to their plots of land)" (Cueva 2006). A campaign against fires was financed by the *Ministerio del Ambiente* (Ministry of the Environment)[61] and included the dissemination of 2,000 posters and 6,000 flyers (Crónica 2006b). Eva Mendoza, a native of Vilcabamba, initiated the campaign and offered talks on the subject in different parts of the valley (Vilcabamba, San Pedro, Yangana, and Quinara). These talks were chiefly aimed at stopping the use of fire to clear land and were

[60] Article 78 of the *Ley Forestal y de Conservación de Areas Naturales y Vida Silvestre* (Law of Forestry, Conservation of Natural Areas, and Wildlife) discusses the penalties for cutting, burning, or otherwise destroying scarce vegetation or sensitive areas, which amounts to the total cost of restoration: $2,160.00/ha. ($1,395.96 for the cost of restoration and $764.46/ha. for the loss of environmental services).

[61] Other organizations involved were *Naturaleza y Cultura Internacional* (Nature and Culture International), *Defensa Civil* (Civil Defense), *Cuerpo de Bomberos* (firefighters), *Protección Animal* (Animal Protection), UTPL, *Fundación Arcoiris*, and HCPL.

admirable in some respects, but there is a disconnect between what is practical for them to do considering their circumstances (the strictly human dimension) and what should in principal be done, especially in consideration of the negative consequences.

It is important to note here that controlled burns are beneficial in some environments. For example, Conklin (1980) has demonstrated that slash-and-burn cultivation can be maintained as an integral system for generations when there is abundant land available and population is sparse. Burning of vegetation releases nonvolatile mineral nutrients (carbohydrates, phosphates, and silicates of nutrient cations) stored in plant tissues to the soil (Pearsall 2004). These are soluble and enter the soil when the rains begin, which raises soil pH and reduces aluminum levels, creating more favorable conditions for crops. Burning also sterilizes the soil, killing pests and weed seeds. However, slash-and-burn (also called shifting) cultivation requires that fields be left fallow when weed competition, pest infestations, and declining soil fertility depress productivity. The necessary length of the fallow period depends upon the soil quality, vegetation, and climate of the area. In traditional shifting cultivation, fields are allowed to regrow during a fallow period, and then re-cut.

Shifting cultivation systems are found to be nondestructive of environmental resources and energy-efficient *if* practiced at low intensity and in relatively flat terrain (Pearsall 2004). In this case, these conditions do not usually apply and in addition, the fires are no longer controlled; the land is no longer left fallow for long periods of time; and crops are not rotated. Therefore, the soil does not have enough time to regain beneficial organisms and nutrients, and the soil that remains essentially becomes more impoverished and less and less useful. In other words, increasing the number of croppings per year or decreasing the fallow period cannot be practiced indefinitely without ongoing deterioration of the environment - especially the soil resources - in

which it exists. Intensification of shifting cultivation is not environmentally sustainable (Pearsall 2004).

Many people expressed to me that considering the lack of people available or willing to work in the fields, the fact that people now want to be paid by the hour, and the cost of agrochemicals (which have their own undesirable effects), to set fire to a field in order to clear it for burning is the most feasible option. Similarly, the archaeological research of Pearsall in the Jama River Valley (a coastal valley in northern Manabí province, Ecuador) demonstrates that farmers chose to keep fields in cultivation because this was labor-efficient, not because they were "forced" to shorten fallow in response to population pressure (2004).

Some people also continue to believe that the smoke from fires brings clouds and hence, rain, and that land won't produce without burning because this kills the pests and plagues and provides ash that helps the soil. A lot of people don't know other options or the reasons why burning is so detrimental (outside of the obvious loss of vegetation, animals, etc.).

When slash-and-burn is intensified, the soil and plants are more vulnerable to opportunistic pests after burning because the predators and competitors of these pests were destroyed and never allowed to replenish. If done too frequently, burning also annihilates the vegetation that protects the soil and helps to keep it intact, which in turn facilitates desiccation and erosion, which then contaminates water sources. Fire also kills beneficial organisms and wildlife (which provide nutrients to the soil and plants and help to control plagues naturally); it destroys forests and high plateaus, which protect water sources and in which live unique and different plants and animals; and it causes smoke pollution.

A long-term resident stated that "People don't know how to do it like it used to be done. They don't do it safely. In the fall they were putting out brochures telling people how to set and

control fires. The people probably used the brochures to start fires." The latter he spoke with humor and irony, shrugging his shoulders: At least they got some *use* out of the flyers, which demonstrates their resourcefulness and laid-back attitude.

If the burning is absolutely necessary, it is important to know how to do it in the safest way possible. As the brochures and posters indicated, some safety measures include asking other people to help surround and control it; to burn when the temperature is lower (in the morning or in the evenings) and the wind is not strong; to avoid burning heavy vegetation; to surround the intended burn area with a border of cleared area to keep it from spreading; and to avoid burning against a hillside, because fires climb them rapidly.

6.1.3 Agrochemicals

Discord also surrounds the use of pesticides. From the point of view of many of those who farm, these chemicals do a lot of work in a short amount of time, with minimal effort. The chemicals cost money, but they are still more economical in the short term, considering the time and effort that is required to do the labor manually, the fact that one would have to pay laborers, and that fires are dangerous and prohibited (unless one acquires a permit). According to Polivio León, age 45, "*Casi a la mayoría utilizan químicos para la tierra, es muy rápido. Pero pienso que con el tiempo va a ser muy malo esto de utilizar es tos químicos. Digamos esta parte, en unos veinte minutos ya está fumigado y muerto todo. Y si pongo unas personas aquí tiene que prestar unos días.* (Almost everyone uses chemicals for the land, it's very fast. But I think that with time the

use of chemicals is going to be very bad. But in twenty minutes the area is fumigated and everything is dead. And if I put some people [to work] I have to borrow some days.)"[62]

Part of the irony here is that, from the point of view of many Ecuadorian farmers, it is not economically and socially *sustainable* to practice agriculture without using fire or agrochemicals. For one thing, they have a lot of faith in the *paquete tecnológico* and believe it is a necessity for "modern" farming. For another, from their experience, the land won't produce without pesticides, so they believe they have no choice but to use them. They also perceive that nice-looking vegetables, e.g. without bugs or brown spots, are better for you. Víctor Arboleda, age 87, put it this way: "*Antes prendíamos fuego [a la tierra] y las plantas cargaban bien. Ya la gente pone químicos en la tierra. Hay que sembrar maíz curado entonces no come gusanos.* (Before we set fire to the land and the plants produced well. Now people use chemicals. You have to plant cured corn so that you don't eat worms.)" His daughter Piedad, age 39, said "*Antes trabajaban orgánico. Ahora tiene que usar químicos para poder trabajar. No produce nada sin químico. Antes no había tanta peste, ya hay más por el cambio climático. ¡Tiene que ser los cambios climáticos!* (Before they worked organically. Now you have to use chemicals in order to work [the land]. It doesn't produce anything without chemicals. Before there weren't so many plagues, now there are more because of climate change. It has to be [because of] climate change!)" Piedad is not entirely wrong here about climate change causing more pests. A change

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[62] Borrowing or trading work was traditionally very important in Ecuador. People would work for someone else, and then that person would return the favor when they needed help. The prevalence of this practice has declined in the last 30 years, with the greater availability and necessity of money, especially after dollarization and with people becoming more individualistic. Most people now want to work for cash. According to Piedad Arboleda, "*Antes prestaban trabajo, trabajamos en grupo antes. Pero ya la gente es más individual, y también no hay bastante agricultores para prestar. Antes había gente más trabajadora.* (Before people borrowed work; we worked in groups before. But now people are more individualistic, and also there are not enough farmers to borrow. Before people were more hard-working.)"

in climate enables different insects to thrive, but in some cases the causation is not so direct. For example, as discussed elsewhere in this dissertation, other things impact the presence of pests, including the use of agrochemicals. Other informants say that land use change, including deforestation, causes more pests because now they've "nothing to eat in the forest, so they have to eat our crops." Because of land degradation and climate change, some agriculturalists are also farming higher up on the mountains, which not only puts these areas at risk of degradation but also may promote pests and disease on crops and livestock (Montgomery 2007a; Thompson, et al. 2007).

Piedad continued: *"Ya hay muchas enfermedades de la gente. Yo tengo quistes. A veces puede oler químicos, por ejempl o en el quesillo, y también en la carne, son hormonas o algo químico, antibióticos*. (Now there are a lot of illnesses in people. I have cysts. Sometimes you can smell chemicals, for example in cheese and meat; they're hormomes or some chemical, antibiotics.)" She went on to say that one time she bought red meat in town but couldn't eat it. It smelled like chemicals even after it was cooked and she had to throw it out. She complained to the woman at the market, who said that other people had complained but it wasn't her fault – she just sells it!

Some of the people that do understand all of the negative aspects of using chemicals nevertheless resign themselves to their use. To them, agrochemicals are a fact of life; "organic food" is a luxury. Health and safety are secondary concerns compared to the more immediate ones of feeding one's family and earning a living. Besides, culturally, they are more concerned with the here and now.

With particular focus on the present study, in response to land degradation and the lack of help from institutions, farmers understandably resort to short-term activities and survival

strategies such as inappropriate land use and/or a desperate search for alternative income, such as national or international migration. Most farmers are clearly concerned about the issue of land degradation but feel it is too complicated to address, especially without initiatives, help, education, or training. They feel that climate change, land degradation, and the lack of available cropland (especially since gringos are purchasing so much) are beyond their control.

6.2 CULTURE CHANGE

"*Cuando yo estuve pequeño yo, te digo hace 38, 40 años, no era una Vilcabamba como esto. Era más tranquila, más estable, salíamos a la calle sin abrigo.* (When I was small, about 38 or 40 years ago, Vilcabamba was not like this. It was more tranquil, more stable, we went out without a coat,)" mused Agosto León Aguilera, town veterinarian, age 50. Many interviewees have stated that the temperatures vary more now than they did before, with colder nights and hotter days. But this quote from Agosto also signals another sentiment common among Vilcabambeños that laments not only the change in the climate, but also associates this with the changes in the town itself – its culture and its environment.

For example, when asked *"¿Qué le parece a Ud. el clima de este lugar*" (What do you think of the climate here?)", Robert Vicente Yaguache Ordóñez, age 39, stated "*Dicen que el clima no cambia; los tiempos cambian.* (They say that the climate doesn't change; times change)." Similarly, when I asked José Manuel Vicente Vera, age 70, "*¿Piensa Ud. que el clima ha cambiado de alguna forma?* (Do you think that the climate has changed in any form?)", he replied "*No. El clima no ha cambiado. Lo que ha cambiado es el tiempo de la vida. Ya no es el tiempo como antes. Por ejemplo, había mucho respeto en la Semana Santa, ya no. Ahora hay*

muchas fiestas. Los jóvenes no quieren trabajar; quieren festejar. Ellos ya no saludan a la gente. (No. The climate has not changed. What has changed are the times. Now is not like before. For example, people showed a lot of respect during Easter Week, now they don't. Now there are a lot of parties. The young people don't want to work, they want to party. They no longer greet people)." Ecuadorians in other parts of Ecuador, for example, in Chimborazo (Bebbington 1993), chiefly blame migration for the very same difficulties that the area of Vilcabamba is experiencing, such as loss of culture, mounting social problems, decreased participation in community activities, health problems, petty theft, increased violence, and dwindling manners and displays of respect. However, rather than chiefly blaming migration for these problems, Vilcabambeños blame gringos, hippies, images in the media (particularly television and movies), and Western influence in general, including migration. Many people, especially young people, desire and want to copy[63] the lifestyles of those who are better off financially, especially those living in the United States and Western Europe. They perceive that the only way to achieve this is to move elsewhere, with dreams of an easier life.

Gringos aren't the only transplants in Vilcabamba. Others are the ideas of development and environmentalism, along with the accompanying ideas of 'concern for nature' (i.e., rather than people, at least as it often appears to local individuals) and of 'progress'. In fact, Western-style development is what has inadvertently caused some of the problems in the valley. Part of the problem is that people now believe that there should be a quick fix to the dilemmas they face: They have a great deal of faith in the power of science and technology, as in the mid-20th century when Green Revolution technologies arrived and seemed like the answer to their

[63] In fact, Ecuadorians, especially those critical of the practice of emulating the West and Western ideas – especially those of the U.S. - often used the words *copia* (copy) or *copiar* (to copy) in interviews and referred to this copying as a form of fantasy rather than reality; something unrealistic and unattainable.

problems. Paternalistic policies and top-down development schemes in Ecuador have led people to expect national or international government agencies and/or NGOs to fix their problems. The lack of attention to social and cultural aspects, however, has been detrimental. They have little confidence or faith in their own abilities. Granted, this is partly due to the inadequate education system and the lack of job opportunities. They have a strong tendency to imitate others rather than to use their creativity and what skills they have to their advantage. There is a lack of capacitation (training and other forms of support); no fostering of creativity; public education is based on rote learning; teachers are underpaid; public schools are not supplied with the necessary resources to provide a good education. Partly as the result of all of these things, the notion that nature and life are capricious once again rings true. Unfortunately, the vast capabilities and positive cultural attributes and knowledge possessed by Ecuadorians are important resources that go untapped.

The Ecuadorians who were born and raised in the valley tend to focus on the here and now, partly because they have been rooted in Ecuador and because of the tendency in their culture to do so, in addition to the fact that many of them are heavily burdened by simply trying to get by.[64] Their concerns are more practical and specific – getting through the day and doing what they need to be doing, e.g., putting a child through school, paying bills, feeding their family, producing a higher volume of crops to sell. Their goals and values are not abstract ones, such as increasing world understanding and communication, learning a better way, conserving

[64] According to SIISE (*Sistema Integrado de Indi cadores Sociales del Ecuador* , the Integrated System of Social Indicators of Ecuador), the poverty rate in Vilcabamba is 41.6% (1696 individuals out of 4075). The rate in adjacent San Pedro de Vilcabamba is slightly higher at 43.6% (551 individuals out of 1263) (Sistema Integrado de Indicadores Sociales del Ecuador 2006).

biodiversity, studying ecosystems – ideas that, as pointed out by Kottak (1999), exemplify intervention philosophy.

When asked why the climate had changed (since she said that it had), Rosa Perez, age 78, first said, "*Hay tantos desordenes en la vid a*. (There are so many disorders in life.)" Continuing, she also mentioned asphalt, concrete, chemicals (including but not limited to agrochemicals), vaccinations and hormones (administered to, e.g., cattle and chickens), all of which implicate humans as a cause of these disorders. Rosa also said that "*Los viejitos tenían una bendición de la naturaleza. El clima – nuestra madre – nos ayudó* . (The old ones had the blessing of nature. The climate – our mother – helped us.)" *Nuestra madre* refers literally to "our mother," or to Mother Earth. Similarly, Edin Aguilera, age 49, who is the Director of Colinas Verdes and thus works with many *campesinos*, stated that "*La gente dice que no me ayuda el clima* (People say that the climate doesn't help me)," and Noé Armijos, age 86, said "*El clima ya no nos ayuda porque ha cambiado. Varía muchisimo el clima.* (The climate doesn't help us now because it has changed. The climate varies a lot.)" One reason why the climate was helpful was because it was predictable. The rains arrived on time, helping to assure a good harvest. Now sometimes the rains don't come, and the *campesinos* (peasants) have to try to find another way to water their crops. Without water, most crops die due to the combination of the strong sun and the lack of water. Some people have irrigation and some do not. It is possible to irrigate the land in some parts of the valley from the rivers or from the irrigation canals that flow from them, but these canals sometimes dry up in the height of the dry season. The irrigation canals or pipes that bring water directly from the mountain watersheds serve only a small portion

of the valley's total land area. Most of the land under cultivation on the slopes, where many poor *campesinos* have their plots, is not irrigated at all (Aird, et al. 2005).[65]

6.2.1 Religion

Some Vilcabambeños view the problems with climate as a sign of God's disapproval of human behavior and attitudes, especially toward the environment. As one informant put it, "*Dios nos castiga* (God is punishing us)" (cf. Kessler and Stroosnijder 2006; Zimmerer 1993). Hulme (2009:13) points out that "experiences of extreme weather have long been interpreted by individuals and cultures as signifiers of divine blessing or judgement. …A theological interpretation of the capriciousness of climate remained dominant in western Europe through the later Middle Ages and well into the early modern period. It remains a common frame today in many traditional cultures."

The name for the warm coastal current that appears sporadically on the coast of Ecuador and Peru also has religious significance. The event was termed *El Niño*, meaning literally 'the boy' or 'the small one', by Roman Catholic Peruvian fishermen in the 19th century. Because it usually appeared around Christmas-time, brought relief from the cold waters that normally prevailed, and watered the arid coastal deserts, the climatic phenomenon became identified with the character of Jesus Christ, and thus it was considered a blessing associated with the Savior of the world (Hulme 2009). According to Rollins et al. (1986), El Niño cycles began approximately 5,000 calendar years before the present. Many of the El Niño events of recent decades, however,

[65] The organization responsible for implementing irrigation projects in southern Ecuador, PREDESUR, was able to increase the supply of water in just 3% of its total area of operation, assisting only about a fifth of those suffering from drought (Lowder 1990:81). Lowder states that continuing investments in supportive infrastructure for this irrigation must continue.

have not been considered a positive thing: There have been much more severe El Niño episodes, particularly in the years 1982-1983 and 1997-1998, which affected weather cycles worldwide and resulted in severe flooding, droughts, massive destruction, and thousands of deaths. In Ecuador, an El Niño event is associated with excessive rain on the coast and drought in the Amazon region. Some scientists argue that the warmer global climate has increased the duration and severity of El Niño events (Walters 2004).

Some research participants talked about the tradition of invoking San Isidro, the patron saint of agriculturalists, when they were in need of rain. A mass would be called, after which the statue of San Isidro would be brought out of the church and carried in a procession around town, and rain would arrive within days. One Sunday during my fieldwork, an older woman requested to the new, young priest that a mass be called to bring the rain, and he replied that if we want rain, we need to protect the environment, plant trees, and "*dejar los santos tranquilos* (leave the saints in peace)." This young priest at that time used to speak when the *viejito* (the old one) was in Spain, and now is the priest in residence at the church after the older one retired. I talked with him one day about this, and he explained that this tradition was brought from Spain in the 16th century, and from then through the 19th century, they would have fiestas in honor of San Isidro, but that after that time, he would be invoked when rain was needed. He told me that they don't do this anymore, but this practice was mentioned by both middle-aged and older informants.

At times it was evident that some interviewees believe that they are at the mercy of God, not of nature, although there are some that believe the latter. According to one long-term resident, "They do not expect to be able to affect or control nature. They're more likely to think it's an act of God, that they are at the mercy of God. Here there is no connection in most people's minds between what they do and the environment. There are virtually no long-term

considerations; their interests are short-term and practical ones." The latter is actually a very common theme among Latin cultures. Many Latinos are concerned first and foremost with the here-and-now and there is a lack of future thinking. This has been referred to as *mañana* (tomorrow) syndrome, as people are spontaneous and often put things off. Plans that do exist are often changed mid-stream or are not carried out at all. The following is also a common occurrence: "Sitting in meetings where all they do is plan and then having another meeting three days later to plan some more and then following up on that meeting to plan for the next meeting." They plan…but they don't plan.

However, in regard to future thinking (or the lack thereof) and fatalistic attitudes, it is important to remember that this is an artifact of historical circumstances and of culture. The notion that humans can have an impact on their lot in life is actually one of the key ingredients in modern development (Dichter 2003), and is one cultural difference between immigrants and local people – one that can be the root of misunderstanding and even resentment. Acosta (2008)[66] points out that the concept of development doesn't exist in indigenous societies in Ecuador; in other words, there is no concept of a lineal process that establishes a previous or later/subsequent state. There is no vision of underdevelopment to be overcome, nor a state of development to be achieved. There doesn't exist, as in the Western vision, dichotomies that explain and differentiate the processes that are occurring. In addition, there is no *traditional* conception of being poor because of a lack of material goods or being rich tied to their abundance.

In the West, belief in the future has been prevalent since the Enlightenment, and is crucial to the idea of progress. Dichter reminds us that "for most of history the *majority* of people did

[66] Acosta gives credit to Carlos Viteri Gualinga for this reminder.

not think about the idea of progress, nor did they count on positive change in the future or even believe there was such a thing as 'the future.' There was no commonly shared sense, in preindustrial society, that things could get better in a permanent way. ...If good things happened, it was Providence that explained them, not progress" (2003:51, emphasis added). Similarly, well into the 20th century the majority of people in Europe and America lived off the land and, even though their possessions were meager, they did not view themselves as "poor" either. The change in thinking in regard to being rich or poor came with differences in wealth and status generated by urbanization and industrialization, which is more recent in Latin America than it is in the US.

6.2.2 Culture Clash

Gringos often complain about the difficulty of getting things done in Ecuador. It takes time for them to get used to the ways that Ecuadorian culture is different from their own, and it is still often very difficult for them to accept, and sometimes such things aggravate them so much that they leave. People may tell you that they'll do something (often telling you what they think you want to hear, at the moment), seeming perfectly willing, and even happy, to help, but then they don't do what they say they're going to do; at times it's as if they dismissed it right after they said they would do it. And if they *do* do it, it might take quite a long time. Efficiency is not one of their virtues. Sometimes the rules aren't really the rules, but there may be other, unspoken or unwritten rules. Sometimes, the gringo has the tendency to get frustrated, even mad, and to show this outwardly, but this is considered by Ecuadorians as rude behavior; their sense of etiquette does not condone this.

Some newcomers to Vilcabamba are overwhelming to Ecuadorians for this reason. They may have a good idea, something they want to get the community involved in, but their overzealous nature is off-putting to Vilcabambeños and so they are avoided, and this becomes a source of cultural misunderstanding: The enthusiastic gringos, in their rush to organize, can be perceived as pushy. The advice given to them by the older expats is to settle in, live there for a year or so, get to know the people, and let them get to know you. At times it is important to resist the urge to give recommendations to solve a problem you might observe until the conditions are ready for it. It is a mistake to impose our own ideas – and sometimes we don't even realize that we are doing it, but to them it may seem like an imposition – or to assume that we know better than they do what is good for them, or that we know what they want or 'should' want. To the Ecuadorian, this can come off as condescending, paternalistic, or patronizing.

Vilcabambeños are much more accepting of what happens to them than most gringos. Some people refer to this as part of their fatalistic and passive nature, but on the other hand, this ability to accept what life throws at them is appealing to some expats. Many gringos have commented that they have left their home countries in part in order to escape from the hustle and bustle and the pressures that accompany it; they grow tired of working so hard to analyze and control every situation and to pay their bills. However, this laid-back attitude sometimes becomes too much for the gringo to take and he or she becomes aggravated; suddenly that laid-back attitude seems like ambivalence, complacence, or even downright laziness.

7.0 GLOBALIZATION, ENVIRONMENTALISM, AND DEVELOPMENTALISM

It's indisputable that the world is globalizing, and people in many different places are facing common problems because of it. However, we need to ethnographically examine the culturally and historically specific changes that are taking place. Currently, the world is characterized by clashing cultural models; to examine these processes and interactions and how they are negotiated will inform us about human nature, about the future, and perhaps how we can best bring about needed changes. Therefore, considering the nature of immigrant-local relationships in the context of development processes and environmental concerns, the concepts of globalization, environmentalism, and developmentalism are relevant to the current research.

Developmentalism and environmentalism are two originally Euro-American ideas that have spread over the world and at times put local people at risk when cultural variation, livelihoods, and autonomy are not given due consideration. Many times it is assumed that these two ideas are unquestionably good ones and that it is necessary to implement them around the world. To some, the extent of their realization indicates measures of progress.

However, many view environmentalism and conservation efforts, for example, as trying to impose a global ecological morality. In this respect both environmentalism and developmentalism are interventionist in nature, and in many cases focus on the goals of planners rather than the needs and wishes of people living in the target area; not to say that they are never well-meaning, but at times they are insensitive. For example, it may appear at times that

environmentalists are more concerned about wildlife or biodiversity than they are about people, especially when conservation efforts interfere with people's livelihoods.

It is important to involve local people in planning and carrying out activities that affect them; not doing so may seriously impact the success of a project. Similarly, an understanding of human lives and lifeways is also necessary. Furthermore, abstract goals may only make sense in the minds of the planners (and therefore, why should people care?). For instance, if preserving biodiversity is a goal, this needs to be explained in terms that make sense to local people. If people come to understand the value of a forest as a way to prevent erosion and as a source of water for agriculture, for instance, this would be much more likely to provide an incentive for them to conserve it. For anyone working on these issues, it is vital to respect both nature and people, not simply try to control them instrumentally. Planners also need to devise socially sensitive and culturally appropriate strategies for achieving such a goal, rather than simply to demand it. In doing so, it is essential to consider the practices, customs, rules, beliefs, and values of the people that will be affected.

7.1 THE GLOBAL VS. THE LOCAL

In this globalizing world, people at times do not think about specific places and local differences and what this might mean. The homogenization of the world is only going to go so far; there will always be a number of differences between places and peoples at the local level. To illustrate, there are major differences in the way climate change is discussed at the global versus the local level, and therefore there are ruptures of understanding. Global climate change is connected with changes at the local level, but people often do not look at it that way. This could

be part of the reason that people dismiss it. They think of it as something "out there"; that it is something governments and international bodies need to think about and take care of or "solve". This has repercussions for people's attitudes, actions, and their perceived agency in regard to climate change and development.

Adaptation and mitigation are largely separate efforts, made more so because mitigation tends to be discussed at larger (especially global) scales, where adaptation is more frequently attempted at the regional or local level because of the climate and ecological variation at these scales. This is an important distinction that is not often made, and most people don't realize this or understand it. I assert that this is part of the reason for the disjuncture in discussions of and efforts to curb climate change.

To expound upon this, discourse about climate change at the global level often revolves around mitigation defined as limiting global climate change through reducing the emissions of greenhouse gases (GHGs) and enhancing their sinks (Füssel and Klein 2006). As a result, the challenges of climate change are seen in essentially modernist, techno-managerial terms, much in the way that development issues have been discussed. However, climate change (much like the challenges of development) is not amenable to an elegant solution because it is not a discrete problem (Prins and Rayner 2007). For example, Prins and Rayner discuss how the Kyoto Protocol, in attempting an elegant universal and top-down solution for managing global climate, misread the problem (Hulme 2009). They encourage instead multi-scale approaches to adapting to the climate risks to which people and communities are exposed. Adaptation primarily aims at moderating the adverse effects of the climate change that has already occurred through a wide range of actions that are targeted at the vulnerable system (Füssel and Klein 2006). It aims to ensure the resilience of both social systems and ecosystems to the impacts of ecosystem change.

This can take place at various levels; in other words, forms of adaptation at the global level can be very different and, in a practical sense, more uniform than adaptation at the local level, considering local climates – not only ecological, but cultural and political-economic.

Adaptation to climate risks at smaller scales is therefore not an *alternative* to mitigation, e.g., in the form of reducing carbon emissions; it is an undertaking which may not even be tied to participation in a global climate treaty seeking to reduce greenhouse gases. Most investment in adaptation is a good idea regardless, in the sense that benefits accrue to the citizens involved irrespective of future climate change or future climate mitigation.

When I presented a paper on this research at a professional conference, another presenter posed the following questions for me: But what could farmers have to do with climate change? Doesn't the connection they've made between agrochemicals and climate change indicate some sort of magical thinking on their part? He wanted to know what one has to do with the other; how the global meshes with the local. It matters not only because it's their cultural model, but also because in some senses, they are right. Many of them have made the connections (between what they do in agriculture and climate change) largely due to their own experience and through talking with others about it. This sort of disjuncture between the global and the local, and similarly, between newer immigrants and autochthonous individuals, reappeared frequently during the course of my fieldwork. As a result, there is a gap in understanding and communication, and this hinders the gains that might be made in regard to the problems that we have.

The way they have farmed since the Green Revolution technologies were brought to them through efforts to help them "develop" has been maladaptive. They didn't know it, and neither did the development workers and technicians who brought it to them. It is rather the result of the

development paradigm that has been implemented over the last 60 years, which emphasizes capital, modern technology, and quick fixes. In conjunction with this, they think of themselves as "modern" farmers; "*ya somos más modernos* " (now we're more modern). As Hernán said, "*La gente ya tiene demasiada fe en el paquete tecnológico* ," (Now the people have too much faith in the technological packet.)

Prins and Rayner also describe how inelegant, but attainable, bottom-up approaches to climate governance are likely to be more effective than elegant, but impractical, top-down ones (Hulme 2009; Prins and Rayner 2007). Similar arguments have been made in regard to development, but in many cases, as in my fieldsite, people don't believe that they can make a difference or even that they have relevant knowledge. Robert Yaguache, who works in conservation and development at CEDERENA, said that a fundamental key is that we have to "*trabajar más en la autoestima de la gente. ¡No cree que es capaz para nada!*" (work more with the self-esteem of the people. They don't think they are capable of *anything*!") People are waiting for the next quick fix to come their way. They believe that science will figure out the next step we need to take, and the technicians and engineers will let us know what it is. Similarly, when most people hear talk of carbon sinks, reducing emissions, or a country's "ecological footprint", their eyes glaze over and they may think that they have nothing to contribute to the conversation, or that there is nothing that they can do about it; that it's not their problem. Also, people don't often think of "development" as development. But if we are to learn about how and why climate changes, and how people can affect the climate (and development), then we will also have to work at the local level and listen to the observations and knowledge of the people who experience it at this scale, especially since humans can impact climate change through their beliefs and actions.

7.2 THE NORTH AND THE SOUTH

The differences between the North and the South (the northern and the southern hemispheres) have been theorized and discussed in many ways and by different disciplines. However, for our purposes it is pertinent to compare them in terms of environmentalism/ecology and development, primarily to help us examine the relationship between immigrants and local people and how their many differences, sociocultural ones in particular, impact their relationship and efforts to work toward sustainable development.[67]

In the North, the environmental movement is largely associated with the wilderness crusade, which focuses on the preservation of wild areas. This concern has arisen outside of and apart from the production process. The U.S., for example, is a very large country and the issue of wilderness is for the most part detached from the idea of explicit environmental degradation caused by humans (at least as compared to what we see in the Third World). Essentially, environmentalism in the North calls for a change in *attitudes* toward the natural world (Guha and Martinez-Alier 1997a). Environmentalists are sometimes equated with "tree-huggers", but the origin of that word is important for this discussion: It originated with the Chipko movement in the Garhwal Himalaya in 1973. Guha and Martínez-Alier (1997a) report that in a space of seven years, more than a dozen occasions were recorded where, in a creative way of protest, illiterate men, women, and children threatened to hug forest trees rather than allow them to be logged for export. Notably, the peasants were not interested in saving the trees per se, but in using them for agricultural and household needs. The movement did turn its attention to broader ecological concerns in later years, but the point to be made here is that they were initially made out to be

[67] Of course not all immigrants are from the northern hemisphere, but many are, and the comparison of the two brings to light relevant observations for the present study regardless.

tree-huggers – romanticized as preservationists – when in fact they were only trying to preserve their way of life.

As a further illustration of the disjuncture between the North and South, in affluent countries the impacts of climate change are often portrayed through romantic images such as the disappearance of charismatic megafauna (the polar bear, for example) and of pristine, unspoiled nature, depicted as important for aesthetic appeal, for posterity, as a sort of spiritual sanctuary, and valued because it is viewed as truly natural and untouched by humans. Nature as a reservoir of biological diversity may also be mentioned, though many people do not understand the literal importance of this for humans or for nature in general. Climate change is also deliberated through the behavior and rhetoric of political actors and movie stars, grabbing the attention of everyday people in terms of "if they think it's important, I should too" (Boykoff 2008).

This brings us to an important distinction: That between the anthropocentric (human-centered) view and the biocentric (humans as only one element in the ecosystem) view in religion, science, and philosophy. The environmentalism that Northerners are generally associated with is biocentric and gives man a more humble place in the natural order. However, this view has at times been criticized for exhibiting a lack of concern for human beings (Guha 1997; Guha and Martinez-Alier 1997c). Rather, the large, mainstream environmental groups focus on the health of the planet – the wilderness, forests and oceans that cannot protect themselves – and in this way members of these groups consider themselves as part of a vanguard. With all of the environmental concerns that have come to the fore in the last decade, these issues have been magnified and become more urgent. Similarly, Hulme discusses how the notion of nature or climate as fragile, which thus needs to be protected or 'saved', are goals that have stemmed from the Enlightenment and the romanticism that followed, where the symbolic is

emphasized over the substantive (2009). It is also helpful to consider the linguistic uses of the words environment and ecology: The word ecology is not usually used in a normative or evaluative sense (as the word environmental/ism is sometimes used), but rather it is an academic discipline and a way of thinking and analyzing.

Some argue that concern for the environment, time for recreation (especially in nature), and other similar ideals are post-materialist concerns: That they have stemmed from rapid economic growth which resulted in the satisfaction of material needs and expectations, and subsequently allowed opportunities for leisure, time off work, and ownership of cars, which free people up to contemplate and enjoy nature. Guha and Martinez-Alier, however, take issue with this explanation, because it does not illuminate environmental concern in the South (1997a). They assert instead that the root of the environmental movement in the South has resulted from visible environmental degradation stemming from a "lop-sided iniquitous and environmentally destructive process of development" (Guha and Martinez-Alier 1997a:17).

Taking the biocentric/anthropocentric division one step further, we can consider the preservationist/utilitarian debate, where some argue strongly for the preservation of 'pristine', 'unspoiled' nature and, at the opposite end of the spectrum, the belief that nature is here for the use of man. In the North, there is tension between those who want to preserve wilderness or the environment and those who want to use it (which in some cases stems from the Judeo-Christian belief that man was meant to dominate nature): In most cases, it is the people or environmental groups who fight the "interests" who want to use the land (e.g., logging, housing developments, shopping malls, roads, oil and gas drilling). Guha and Martinez-Alier (1997c) point out that in the South, this situation is nearly the opposite: It is the "interests" who are preservationist (e.g., international environmental organizations, the powerful commercial-industrial sector, who assert

that they're going to 'manage' the environment) and the *people* who want to use or to keep control over it – the subsistence and largely rural sector – similar to the original tree-huggers of Garhwal Himalaya (see Figure 16 for a visual conception of this trend).

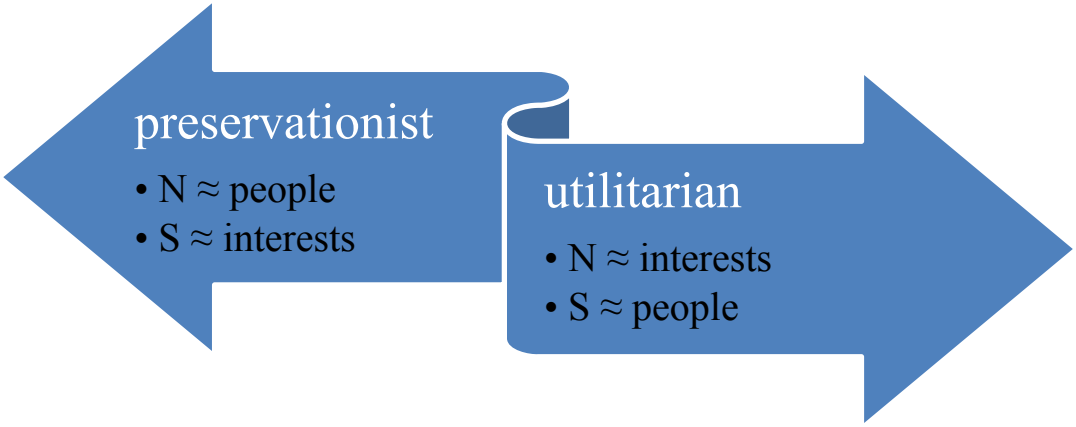

Figure 16. Preservationist vs. utilitarian tendencies in the North and the South

These arguments make sense in light of the research being discussed. In large part, more recently arrived immigrants to the Vilcabamba valley are concerned about the environment, but not in terms of their livelihood: Instances of visible environmental degradation are not intimately and directly connected to their daily lives; it is something 'out there' that needs to be dealt with. And when they talk about preserving the environment, they have the attitude that they are "siding with the people," so in some sense, they miss the point of ecological concerns in the South. Relevant to this is the tendency of Westerners to romanticize and idealize the Noble Savage, a notion that assumes that indigenous people are in tune with nature and thus best know

how to take care of it. As mentioned earlier, the Northern environmentalist view is in a way paternalistic – you protect things that can't protect themselves – and when you are on the side of preservation, you are on the side of the people against the interests who want to exploit nature. Transferring this to Ecuador, you keep your preservationist/environmentalist viewpoint and assume that you're demonstrating empathy for the position of the people. The fact that you may also be offering them much-needed jobs to help them 'progress' fits right into this schema. This is another disarticulation between the North and the South and between newcomers and Ecuadorians.

It is no wonder that Ecuadorians can't understand how these crazy gringos think. From their point of view, the new immigrants seem out of touch with reality, and rightly so. Where do they get these ideas? If I emigrate to where they're from, will I understand, and will I get to have a life like they do?

7.2.1 The Relationship between Poverty and Environmental Degradation

Common perceptions are that wealth provides the means to correct environmental damage, that wealthy people are more environmentally conscious because they can afford to care for quality of life issues, and that poverty is a main cause of environmental degradation (Guha and Martinez-Alier 1997b). These assessments coincide with the idea that environmentalism stemmed from a post-materialist or post-industrial society which allowed opportunities for recreation and the appreciation of nature. Recent research, however, has called these assumptions into question. Sandvik (2008), for example, examined data from 46 countries on public concern for climate change, with results indicating a *negative* association between concern and national wealth. Also, in an examination of six case studies from across Latin

America, Swinton et al. (2003) found that the motivation for natural resource depletion is more a result of skewed policy incentives than from lack of capacity.

These arguments are relevant to the present research for two reasons: They inform us about both development and sustainability. Poverty has been blamed for environmental degradation, and conversely, environmental degradation has been blamed for underdevelopment and poverty (e.g., Shepherd 2005). If the solution to both is "sustainable development," then we need to really think about the link between these two phenomena. What is missing is people (and what they have to do with environmental degradation, and why). The remainder of this dissertation will further elaborate this point and explain how this can be addressed.

The idea that economic growth is the chief remedy for both poverty and environmental degradation is reflected in the Brundtland Report, which was the first official use of the term "sustainable development" (World Commission on Environment and Development 1987). In this report, sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987:43). The main message of the report was that poverty is the main cause of environmental degradation, and it explicitly recommended economic growth (as in the neoclassical theory of underdevelopment), renamed 'sustainable development', as a solution to both problems (Guha and Martinez-Alier 1997b). Once again, it is assumed that poverty arises from a lack of development (or from underdevelopment), and that development will solve poverty. However, these forms of development have clearly not alleviated poverty. Since this is one of its fundamental goals, we can conclude that there is something fundamentally wrong with the development models that we have relied on for over 60 years.

7.2.2 "*Sumak Kawsay*" ("*El Buen Vivir*") in the Ecuadorian Constitution

Ecuador's new Constitution (Asamblea Nacional del Ecuador 2008) incorporates the idea of *sumak kawsay* (Quichua) or *el buen vivir* (Spanish) as a development model oriented towards good living, or living in harmony with nature and strengthening environmental rights for this end. Put another way, it is an attempt to codify sustainable development[68] by explicitly assigning rights to nature; it is intended as well to draw attention to the importance of environmental issues. This legislation has been heralded as the first of its kind in the world.

The 2008 Constitution of Ecuador states the following:

- We have decided to construct a new form of coexistent citizenship, in diversity and in harmony with nature, to achieve the good life, the *sumak kawsay*.
- Nature or Pachamama, where life is reproduced and exists, has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution. Every person, people, community or nationality, will be able to demand the recognition of rights for nature before public institutions.
- The State will motivate natural and juridical persons as well as collectives to protect nature; it will promote respect towards all the elements that form an ecosystem.

An indigenous leader who was present at the Rights of Nature Conference, which was convened in order to discuss how best to implement these new provisions, said that "If we have our land and clean air and water, our communities can have *sumak kawsay*— the good life. I

[68] The indigenous peoples' representatives and environmental nongovernmental organizations that drew up these provisions were aided by lawyers from the Community Environmental Legal Defense Fund (CELDF) of the United States (e.g., Worldwatch Institute 2010).

don't know why you are calling this a new development model—we have always lived this way. The duty of the state is to ensure that these fundamental rights are protected in order to safeguard the well-being of our people" (Worldwatch Institute 2010:143). Indigenous people do have the reputation of living in harmonious coexistence with nature (as in the Noble Savage), although as stated earlier in other parts of this dissertation (in Sections 1.1.2 and 7.2), the dichotomy between Western/indigenous is one that we need to overcome. However, I argue that assigning rights to nature in this manner will not ensure or even ultimately promote the notion of *sumak kawsay*.

The Ecuadorian Constitution encourages people to protect nature and to demand the recognition of nature's rights before public institutions. This rhetoric is similar to that of the environmental movement in the North. The way the rights of nature have been framed is thus a moral imperative that follows from the biocentric perspective; other species of plants and animals, and nature itself, have an intrinsic right to exist. The biocentric elaboration of the rights of nature will not inform us about sustainability in practice (although that is the intention) because it will not help us to understand why and how environmental degradation occurs.

To return to the earlier discussion of the anthropocentric versus biocentric viewpoints in religion, science, and philosophy (and hence, environmentalism): We can continue to debate the merits of each, but neither will help us to understand the *dynamics* of environmental degradation – *the forces that work to cause it* (Guha and Martinez-Alier 1997c)! As stated in the last section, we need to think about the in-between of anthropocentric and biocentric, and the links between poverty and environmental degradation, if we are going to reach sustainable development. The following figure demonstrates the differences between the biocentric and anthropocentric perspectives, and begins to draw the contours of the middle ground, which I assert is where true sustainability lies (see Figure 17).

BIOCENTRIC	CULTURE + ECOLOGY = SUSTAINABILITY	ANTHROPOCENTRIC
preservationist, use bans	**place- and context-based**	**utilitarian**
ecological reasoning	ecological reasoning, humans integrated	economic reasoning
environmentalism	**livelihoods**	**jobs**
universalist	complexity, local differences, heterogeneity	universalist, homogeneity
natural-science based, top-down mgmt.	**interaction of environment & society**	**scientific industrialism**
scientific conservation	multidisciplinary, integrated knowledges	answers/solutions, efficiency
	holism, synergy	
	human & environmental health	
	social + economic + environmental goals	

Figure 17. The biocentric-anthropocentric continuum

According to Ecuadorian economist Alberto Acosta, "This Constitution, this is perhaps one of its best merits, opens the door in order to dispute the historic meaning of development" (2008:45). Perhaps it still may, in the form of public and academic discussion. However, on the implementation side, there are already contradictions between what has been proposed and the statements and actions of the Correa administration, in particular considering its extractive model of economic development, although one with greater state control.

This will keep its activities within the realm of scientific industrialism, a transcultural environmental tradition that is located across the world. Associated with the state and with state power, it involves experts, engineers, and technicians who uphold an identical vision of efficiency and large-scale, centralized, top-down resource management (Guha and Martinez-

Alier 1997d). There are many agronomists, engineers, and technicians in Ecuador, and many people place great faith in their expertise and scientific backgrounds as educated persons. It is the training of these specialists, which stems from the development milieu in which they were trained, however, that is part of the problem. It is aligned with ideas of modernization, progress, abiding confidence in science, and market-based reasoning, and is associated with the processes of big D development that have contributed enormously to land degradation and the loss of both biodiversity and cultural knowledge (cf. Apffel-Marglin 1998; Apffel-Marglin and Marglin 1996; Shepherd 2005; Tillmann 1997). These notions, in turn, derive from the paradigm in which they were created, namely, the Productionist paradigm, which we'll discuss in the next chapter.

In conclusion, this chapter has sought to explain the problematic nature of the overarching ideas of globalization, environmentalism, and developmentalism in regard to the present study. In doing so, I have sought to illustrate part of the disjuncture between the identification of 'problems' in certain locations and some of the reasons why they are so difficult to address. As Albert Einstein has said, however, "We can't solve problems by using the same thinking we used when we created them." It is time to start to thinking in fundamentally different ways.

8.0 WHAT IS IT THAT WE REALLY WANT TO ACCOMPLISH? ON THE RELEVANCE OF PARADIGMS

It is clear that sustainability and sustainable development are important goals. However, one of the primary tasks in working to meet these goals is to outline the paradigm that we are going to operate under, and we also need to define exactly what the term "sustainability" means. These two factors will determine whether and how sustainability and sustainable development are accomplished.

To illustrate the importance of a paradigm, it will be helpful to describe the historical trajectory of the fields of agronomy and ecology. Principally, ecology is considered as the study of natural systems, while agronomy centers on applying the methods of scientific investigation to the practice of agriculture. The two fields were rather briefly brought together in the late 1920s with the development of the field of crop ecology, the study of where crops are grown and the ecological conditions under which they grow best (Gliessman 2007). Although crop ecologists suggested the term agroecology as the applied ecology of agriculture in the 1930s (Bensin 1930), the subsequent distancing of the fields of ecology and agronomy from one another caused the term agroecology to fall by the wayside.

This bifurcation of the fields of ecology and agronomy is associated with other significant and relevant events. It is around this period of time where a number of overlapping circumstances resulted in what we now call the Productionist paradigm. Among them are the

years surrounding World War II and the geopolitical atmosphere of the time, increasing concern for the food needs of a growing world population, and the foundations of big D development. After the Allied victory in World War II, the conscience and confidence of the victors prompted them to begin to address poverty and to aid progress around the world. According to Dichter, "The United States especially, with its action-oriented, problem-solving culture, led the early development organizations to take on the task of helping others develop and did so with considerable self-assurance" (2003:5). At the core of this undertaking is an unquestioned "ironclad faith in a way of life" (Dichter 2003:49), where it is believed that scientific progress and technology will provide the keys to future progress.

The Productionist paradigm thus grew to be the overarching framework and basis for the assumptions of scientists and policy makers. Like other paradigms, it largely determined how problems were defined (Thompson 1993) and how phenomena were explained. Lang and Heasman describe a paradigm as an underlying, fundamental set of framing assumptions from which new knowledge is generated (2004). The main assumption of the Productionist model is that underdevelopment is caused by an inadequate development of production forces, a situation that can be corrected by the diffusion of capital, know-how, and technological innovations (Yapa 1993).

When ecology and agronomy diverged after World War II, consistent with this paradigm, agronomy became increasingly results-oriented, focusing on the growing mechanization of agriculture and expanding the use of agrochemicals (Gliessman 2007). Essentially, it became a tool of development, focused on "solutions" and the "modernizing" of agriculture, which involved the research and development of agricultural inputs and the top-down transfer of technology. Before the mid-twentieth century, most crops were produced largely without the use

of chemicals. Insect pests and weeds were controlled by cultural methods such as crop rotations, timing of planting to avoid high pest population periods, mechanical weed control, and other time-tested and regionally specific farming practices. While these are still in use in many places, especially in so-called less developed parts of the world, development processes, changes in technology, prices, cultural norms, and government policies have led to today's industrially intensive agriculture (Bates and Hemenway 2010). Before 1950 most of the rise in global food production came from increasing the amount of land under cultivation, whereas since 1950 most of the increase has come from mechanization and intensified use of agrochemicals and high-yielding crop varieties (Montgomery 2007a, 2007b). Dramatic intensification of agricultural methods during the Green Revolution is credited with averting a food crisis over the past few decades. Increased harvests stemmed from the development of high-yield "miracle" varieties of wheat, rice, and corn capable of producing two or three harvests a year, increased use of chemical fertilizers, and massive investments in irrigation infrastructure in developing nations. In terms of food security, and considering the very real problems of climate change, the next question that we have to ask is: Where do we go from here?

To finish our discussion of where we've come from, it is also illuminating to explain the origins of the term "Green Revolution". The first use of the term has been attributed to William Gaud of the U.S. Agency for International Development in a speech given to the Society for International Development in March 1968 (Yapa 1993). Gaud alluded to the possibility of a green technical revolution in food production as a way to counter a "violent Red Revolution like that of the Soviets" or "a White Revolution like the Shah of Iran" (Gaud 1968). This arose from Malthusian concerns over a growing world population, food shortages, and growing hunger, which could fuel social unrest and political upheaval (Thompson, et al. 2007). The Green

Revolution was thus used as an instrument of U.S. foreign policy (Cullather 2004; Thompson, et al. 2007) and was also presented to the U.S. Congress as a means to provide bright market prospects to the pesticide, fertilizer, seed, and tractor industries (Yapa 1993).

After World War II, ecology, on the other hand, moved in the pure science and nature direction. The gulf between ecology and agronomy continued to widen until the late 1950s, when the maturation of the ecosystem concept spurred a renewed interest in crop and agricultural ecology. It was not until the 1970s, however, that the two disciplines again began to really intersect: Some ecologists began to see agricultural systems as legitimate areas of study, and conversely, more agronomists recognized the value of the ecological perspective. In addition, some researchers began to note the benefits of mixed farming systems used by traditional farmers in less developed countries (e.g., Gliessman 1982, 1990; González Jácome 2010). These farming systems used few external inputs, created and maintained agricultural diversity, and took advantage of existing biological mechanisms and the synergies that they create, and thus were illustrative of ecologically-based agroecosystem management. Consequently, the foundations of the field of agroecology grew, and by the early 1980s it had "emerged as a distinct methodology and conceptual framework for the study of agroecosystems" (Gliessman 2007:19).

Ecologists are now very involved in the study of agriculture, as are agronomists, and the field of agroecology straddles established boundaries: It is both the study of ecological processes in agroecosystems as well as a "change agent for the complex social and ecological shifts that may need to occur in the future to move agriculture [and society] to a truly sustainable basis" (Gliessman 2007:19). The field has contributed to the development of the concept of sustainability in agriculture (Douglass 1984), an understanding of what sustainable agro-food systems are, and to the overriding concept of ecological, social, and economic sustainability in

general (Altieri 1999; Amekawa, et al. 2010; Thompson, et al. 2007), which we'll discuss in the next section.

8.1 SO WHAT EXACTLY IS SUSTAINABILITY, AND WHY DOES IT MATTER?

Basically when we talk about sustainability we mean something that can endure. However, the concept involves so much more than natural resources. Rising concerns about environmental effects, including climate change, and the knowledge that humans can have a significant impact on them means that sustainability not only involves the environment but people as well. Aside from the impacts of human perceptions (and thus, their behavior and actions), on the environment, human beings are also an important resource that we need to sustain: For example, labor, part of the stock of human capital, is affected when there is outmigration and a lack of available jobs. Human health and well-being also have to be sustained. Therefore, we have to consider the effects of our actions, technologies, and livelihoods on the health of both people and the environment on which we depend.

The natural sciences can analyze various aspects of nature, including its capacities and what has been extracted from it or imposed upon it. However, sustainability is about more than that; it is also about the sustainable or ecologically efficient obtainment of human well-being and about how to change human societies and economies. A societal objective in this regard is stable, maintainable, and widely shared economic output, as opposed to an unstable, burgeoning economy that cannot be maintained and does not consider ecological and social well-being

(Paehlke 2005). Therefore, it is also about rebalancing social and economic priorities. To this, there is unfortunately no quick-fix and no technological solution.

One reason that the Productionist paradigm is not sustainable is because it relies on cheap energy for both inputs and transport. Many of the external inputs that are necessary are either scarce or damaging to use or to produce. For example, the synthetic chemical fertilizers and pesticides used in modern agriculture are produced using fossil fuels and mined mineral deposits. An important source of nitrogen for fertilizer is that obtained from industrial fixation. Bates and Hemenway state that "Many other aspects of industrial agriculture are [also] unsustainable, from the topsoil loss that approaches 75 billion tons annually to the looming depletion of the critical fertilizer phosphorus and the negative returns typified by crops that use 10 calories of fuel energy to produce one calorie of food energy required to produce agricultural inputs" (2010:50).

Other unsustainable aspects of the Productionist model are its reliance on natural resources (presumed as either limitless, or the limits of which can be overcome with technological innovations), the detrimental ecological effects of monoculture, and the externalized costs exacted on nature and humans, such as pollution, contamination, waste, loss of biodiversity, and health problems. In addition, its focus on plentiful, cheap food has ultimately caused a decline in the prices of agricultural products, which has prompted people to discontinue farming and has facilitated mass rural to urban migration in search of employment. Since the Productionist paradigm perceived of agriculture as an engine of economic growth, it is ultimately not surprising that this has occurred. It has also been a goal of development to economically and socially transform agriculturalists from backward to modern, from subsistence to market-oriented, and from underdeveloped to developed. Trickle-down theories of development assumed that farmers would be brought into the market economy if not through agriculture, then

through increasing jobs available through modernization and industrialization. Issues of food security have resulted, especially since farmers no longer grow food for subsistence.

Other realities have also served to signal the end of this paradigm. It is ill-equipped to address issues of uncertainty, complexity, and sociocultural and ecological diversity because of its emphasis on the one-size-fits-all model. Confidence in the power of science has become understood as the power to dominate nature; rather than respecting nature with science, we have attempted to control it instrumentally. Also, productionism has had a profound effect on knowledge attainment; for example, it has undermined experiential knowledge of low-input agriculture (Hassanein 1999). People have become accustomed to techno-fixes and easy 'solutions'. In addition, problems such as poverty and malnutrition continue, and concerns about climate change have been magnified. In brief, all things considered, the Productionist paradigm has failed abysmally in terms of both humans and the environment; it is not capable of addressing the complex problems of food insecurity, ecological degradation, and human well-being. There is an urgent need for broader, more integrated development strategies.

Veteto and Lockyer state that "achieving sustainability entails actions grounded in detailed knowledge of local ecological, political–economic, and socio-cultural systems combined with a global awareness and scientific acumen" (2008:48). This forecloses the approach of the Productionist paradigm to development, which focuses on ultimate outcomes and reductionist and often oversimplified solutions. This way of effectively achieving sustainability is precisely why the approach of the earlier immigrants to development has been so much more successful than other approaches. Long-term immigrants who are well-integrated into the community have an intimate knowledge of the local ecological, political-economic, and just as importantly, social-cultural system. They also have a different view that comes from exposure to other

places, ideas, and knowledges. In effect, they are implementing development with a small d, not conceived from the start as development per se; it has been more of an imperfect but functional and iterative process. We have to adapt what we do to where we do it (like the earlier immigrants), rather than try to change a people or place to fit an idea or project that is desired by others (like the more recent immigrants).

This requires whole systems thinking, which brings us to its opposite, problems with parts, or species thinking. Thus, when a farmer follows the advice of a technician or agronomist who recommends that "If you have problems with pest X, apply pesticide Y," his problem may *at first* seem to be resolved. However, ecology, much like culture, is an integrated system; actions affecting one part of the system can affect others. In effect, ecology provides a nice analogy to how we have to think in order to conceptualize and move toward sustainability, and not just because the environment is involved. We study ecology because we are interested in, for instance, land degradation, but we also study ecology because it helps us to think in terms of holism and systems thinking. Parts in themselves don't help us to think about sustainability. Ecology is, by its very nature, not interested in just the components of nature individually but especially in how the parts interact. Hendrick Tennekes once said that "In an ecosystem no one is boss, virtually by definition" (Hulme 2009:312). This is not easy for someone trained in the Western tradition to conceptualize.

Typically, the environment is thought of as a set of separate resources, but in fact it is a complex set of interacting resources that need to be understood as a dynamic system. Especially in terms of climate change, we need to think about how nature copes with crises through resilience, or being able to maintain in the face of disturbance (Adger 2000). Greater diversity ultimately means greater stability and resilience.

Advances in the field of ecology help us to apply it to the analysis of sustainability. The 'new ecology' (Biersack 1999; Botkin 1990; Scoones 1999; Zimmerer 1994) addresses critiques of earlier conceptions of ecosystems as mechanistic and deterministic. In addition, ideas about the balance of nature, homeostasis, and equilibrium were the norm, and humans were considered as outside of ecosystems. In contrast, the new ecology considers humans as an integral part of the ecosystem (moving beyond the nature/culture divide and other similar dichotomies) and thus it requires systems thinking, a mental framework for seeing interrelationships rather than things, and seeing patterns of change rather than static snapshots. Two other contemporary foci in the field of ecology include the importance of history and the influence of human agency and impacts (Scaglion 2008; Walters and Vayda 2009). These three viewpoints make possible a new, more comprehensive perspective on managing coupled systems of people and nature through building resilience and adaptive capacity within the system, rather than attempting to control it instrumentally, e.g., for stable optimal production and short-term economic gain.

Thinking in terms of ecology helps us to understand the importance of contextualized problem solving. Places and contexts are different, socially, ecologically, and economically. The difference this can make for development that is truly sustainable is very significant – impossible to ignore. We can think about increased emphasis on skills and knowledge management in relation to sustainability as contrasted with the Productionist paradigm in which, for instance, a single technician manages huge tracts of cropland, no matter where it is, on a recipe basis. With all of the various kinds of diversity in the world – e.g., cultural, biological, ecological – it makes sense that the blueprint model or homogeneous technological packages will not work in the long run.

8.1.1 The Life Sciences versus the Ecologically Integrated Paradigm

At present two different paradigms are poised to take over where the Productionist paradigm left off: The Life Sciences paradigm and the Ecologically Integrated paradigm. Some argue that the 21st century will be the century of biology. The industrial nature of the Productionist paradigm is being moderated and reformed by new biological thinking (Lang and Heasman 2004). The Life Sciences model is centered on a mechanistic and rather medicalized interpretation of human and environmental health. The prefix 'bio-' has become extremely popular, being used in words ranging from bioengineering to biofuels to bioprospecting to biotechnology. Its focus is on issues of quality, health and hygiene standards, safety, market integration, product standardization, and intellectual property rights (IPR). It is claimed that this paradigm can remedy a number of the drawbacks of the Productionist paradigm by reducing environmental impacts, improving human health through increased food production, and creating new products that will benefit human and environmental health (although these health benefits are often contested because of the unknown effects of, e.g., biotechnology) (Lang and Heasman 2004). For these reasons, it is being called the Gene Revolution. Essentially, science and technology are being combined with growth-oriented development targeted at global markets. Its critics assert that it is simply a modernization of the Productionist paradigm, with the agricultural treadmill, large-scale production processes, and commercial dependencies that go along with it. Not surprisingly, the Life Sciences paradigm is being supported by considerable public and private investment.

In contrast, the Ecologically Integrated paradigm takes a more integrative and less engineering approach to nature, along with a holistic view of health and society: Individual and population health is thought to depend upon a combination of the stocks of natural resources, the

functioning of ecosystems, and cohesive social relations. Therefore, it seeks to integrate environmental, nature and conservation policy with industrial and social policy. This paradigm is represented, for example, by agroecology, conservation biology, landscape ecology and other systems approaches that include the analysis of (agro-food)-ecosystems, the interactions between multiple coexisting populations and landscapes, and more recently, the study of socio-ecological dynamics at different scales (and concerns about global change, such as climate change) (Thompson, et al. 2007; Thompson and Scoones 2009). This sort of analysis requires more nuanced, qualitative understandings of causality and change, attending to ethnographic understandings of place-specific processes.

At its core the Ecologically Integrated paradigm recognizes mutual dependencies, symbiotic relationships and more subtle forms of manipulation, while aiming to preserve biodiversity and ecosystem functions (Lang and Heasman 2004; Thompson, et al. 2007). It incorporates heterogeneity in various forms rather than relying on the homogeneous technological packages and top-down transfer of knowledge and information of the Life Sciences and the Productionist paradigms. For example, it seeks to learn from as well as contribute to traditional farming knowledge. Both the Life Sciences and the Ecologically Integrated models adopt concepts of intellectual property, although very different ones: The Life Sciences through the patenting of genetic materials and the Ecologically Integrated by building on and refining knowledge built up over many generations (Lang and Heasman 2004). These three paradigms are compared and contrasted in Table 6.

Table 6. Comparison of the Productionist, Life Sciences, and Ecologically Integrated Paradigms

PRODUCTIONIST	LIFE SCIENCES	ECOLOGICALLY INTEGRATED
post-World War II development	grounded in the sciences of biology, chemistry, and genetics	grounded in biology and ecology, social science, and cultural experience
science of parts; species thinking	science of parts; species thinking; study of specific biophysical processes (as if independent from others)	science of integration; systems thinking; recognizes mutual dependencies, symbiotic relationships and more subtle forms of manipulation
'modern' agriculture, Green Revolution	'modern' agriculture, Gene Revolution	ecology-based approaches; aim to preserve and enhance ecological diversity, rely on ecosystem functions
(linear) progress, science and technology, production, economic growth-oriented development	science and technology, production, economic growth-oriented development targeted at global markets	science and appropriate technology, production, sustainability, livelihoods, empowerment
emphasis on production, especially quantity, uniformity, and cheapness	emphasis on issues of quality, health and hygiene standards, market integration, product standardization, intellectual property rights	emphasis on poverty reduction, food security, sociocultural and ecological fit, health, environmental and social sustainability
nice looking, large, uniform, bug- and spot-free produce perceived as quality produce	safe, plentiful produce; biotechnology	quality centers on e.g., healthiness of the product, maintenance of livelihoods and the environment
industrial, focus on "solutions", blueprint model	represented by molecular biology and genetic engineering; blueprint model	more integrative and less engineering approach to nature
assumes that health gains follow from sufficiency of supply	more medicalized view of health and society	holistic view of health and society
homogeneous technological packages, transfer of technology, experts, top-down dissemination	homogeneous technological packages, transfer of technology, experts, top-down dissemination	heterogeneous approaches (place- and context-based); blending disciplinary perspectives; combinations of technologies, skills, and knowledges
control or 'overcome' complexity and diversity	control or 'overcome' complexity and diversity	Recognize and adapt to change, complexity and diversity; flexibility
environmental assumptions: cheap energy for inputs and transport; limitless natural resources; industrial agriculture; externalization of waste/pollution	more efficient use of natural resources; continuation of growth-oriented development aimed at global markets; achieving higher output	environmental assumptions: resources are finite; need to move away from extensive monoculture and reliance on fossil fuels; need to integrate environmental, nature, and conservation policy with industrial and social policy

8.1.2 Agroecology

I began to discuss agroecology earlier in this chapter and will return to it now in order to illustrate how it is an example of the Ecologically Integrated paradigm in practice. In doing so, I will also explain how agroecology can be synonymous with "good development", which was discussed in Chapter 5.

Fundamentally, the behavior of agroecosystems depends on the interactions between the various biotic and abiotic components. Agroecology employs a holistic perspective, which in essence means that instead of focusing research on very limited problems or single variables in a an agroecosystem, these problems or variables are studied as part of a larger unit (Gliessman 2007). Some scholars refer to this as systems thinking, and contrast this with species thinking, which is used for example in conventional agriculture. Species thinking is reductionist; you can study a few components of the system and how they relate and leave the others out. For example, in the mid-20th century, chemists recommended adding the scarcest mineral to crops as fertilizer (usually nitrogen, phosphorous, or potassium) (Bates and Hemenway 2010). This mechanical approach soon became a widely accepted agronomic principle and, obviously, part of the basis for the Green Revolution (cf. the 'recipe' referred to earlier in the chapter). Similarly, strategies for controlling pests and diseases have tended to focus on short-term, single-technology interventions, particularly chemical pesticides. If more than one technology is used, very little attention is given to their interaction or to the compatibility of the different technologies (Thomas 1999). It is an attempt to move beyond complexity and diversity, rather than adapt to them and to create synergies. The goal is simply to increase production or output, and success is measured by short-term, neoclassical economic evaluation such as the amount of

output and profit. However, in a complex adaptive system, simple rules of cause and effect do not apply. There is no way to get around this complexity; the key to dealing with it is synthesis.

In contrast, agroecological approaches do not stress boosting yields under (man-made) optimal conditions as Green Revolution technologies do, but rather work with nature to construct a functional biodiversity where it is possible to initiate synergisms, providing ecological services such as the activation of soil biology, the recycling of nutrients, the enhancement of beneficial insects, etc. (Uphoff 2007; Uphoff, et al. 2006). The agroecological approach promotes biodiversity, recycles plant nutrients, protects soil from erosion, conserves water, uses minimum tillage and natural control mechanisms, and integrates crop and livestock enterprises on the farm. It seeks to go beyond a few-dimensional view of agroecosystems, such as their genetics, agronomy and profitability. Instead of focusing on a few particular components of the agroecosystem, it emphasizes the interrelatedness of multiple system components and the complex dynamics of socio-ecological processes. Thus, ecosystem processes are supported, ensuring stability, resilience and thus sustainability of production under a whole range of soil and climatic conditions, particularly under marginal ecological conditions where land degradation occurs most rapidly (Thompson, et al. 2007).

One of the most important considerations in agroecology is soil health. Healthy soils are the foundation for growing healthy plants with reduced inputs from off the farm, but they are also the basis of a healthy ecosystem. Crop health (and good production) depends on maintaining soil ecology by returning to the soil the minerals lost in farming and the organic matter that supports the nutrient cycles of soil life. The rate at which topsoil is being lost worldwide is astonishing, but this is something that often takes a back seat to problems like climate change. However, the two problems are very much related, which a holistic view and an

understanding of ecology allow us to see. It is imperative that we reform agricultural practices in both industrialized and developing countries in order to retain and rebuild soil fertility and the soil itself, which is a renewable resource only at a "glacial pace" (Montgomery 2007a, 2007b).

On March 8, 2011, Olivier De Schutter, the U.N. Special Rapporteur on the Right to Food, presented his new report "Agro-ecology and the right to food" before the U.N. Human Rights Council. According to this report, based on an extensive review of scientific literature published within the last five years, agroecology, if sufficiently supported, is a mode of agricultural development that can double food production in entire regions within 10 years while mitigating climate change and alleviating rural poverty (De Schutter 2011). The report also asserts that agroecology strongly contributes to broader economic development. Recommendations include moving away from the emphasis on input subsidies; investing in knowledge, forms of social organization that encourage partnerships, and agricultural research and extension systems; empowering women; and creating macro-economic enabling environments, including connecting sustainable farms to fair markets.

Implementing agroecological practices is not an easy process: It requires different types of skills and knowledge, especially locally-based traditional knowledge and modern biological and ecological knowledge, along with a good understanding of local socio-cultural and economic systems. It is a fundamentally different way of thinking about agriculture, sustainability, ecology, food, and development. Agriculture is more lived experience rather than packaged knowledge; we need to get the culture back into agriculture (Gliessman 2007; Merrill 1976).

One of the tough messages of agroecology is that we need to adapt what we do to where we do it, unlike in technology-intensive systems where people try to adapt the land and ecology to their techniques. We need to consciously adapt agriculture to reality rather than try to do the

opposite. Human practices and traditions shaped to the land can be sustained; the opposite cannot (Montgomery 2007a, 2007b). These very same lessons are crucial for good development. We need to use a minimum of external inputs and try to work within the constraints of the system, rather than try to implement something foreign or try to change nature, because we can't. We need a more integrative and less engineering approach, and we need to recognize the benefits of initiating synergisms – when the combining of practices, activities, communication, perspectives, and knowledges produces even better results than individual ones do; put another way, their combined effect is greater than the sum of their individual outcomes. While individual practices help, it is the combination of practices and the synergies that are produced that contribute the most to success; this is true for both ecology and for development. In this way, we can take advantage of the inherent strengths of natural and socio-cultural systems, which will increase resilience, adaptation, and security, as well as lessen vulnerability. This will allow us to have socio-ecological systems that are culturally sensitive, economically viable, and ecologically sustainable.

8.1.3 Research on Sustainability

As delineated in Figure 17 (Section 7.2.2), sustainability is found between the two ends of the continuum between biocentrism and anthropocentrism. Culture and ecology are both important to sustainability; thus, furthering our knowledge and comprehension of it requires that research be place-based and investigate the interactions between environment and society. In this way, we can focus on understanding the specific contexts that shape and are shaped by human practices.

Unfortunately, we cannot direct our attention solely to the end products of human activities, past or present, in order to further our knowledge of sustainability. Ideas such as the success or failure of projects or civilizations or, as Morehart (2011) points out, empty signifiers such as tradition, tell us little about how processes of interactions were sustained. Rather than romanticizing tradition or traditional agroecosystems, we need to see what we can learn from them. Failures are not usually directly environmental, but organizational; they are related to the social, cultural, political, and economic settings that people and environments occupy. Subtle changes in the geopolitical or cultural environment can lead to instability, which is why resilience is also important. For poor communities, losing the insurance supplied by healthy ecosystems can be a matter of life and death, because healthy ecosystems supply a number of ecosystem services (refer to footnote 33, p. 81, for the definition of ecosystem services).

It is also necessary that research on sustainability be interdisciplinary, which calls for researchers from different disciplinary backgrounds to cooperate, communicate, and integrate their methods, knowledge, and theories (Lélé and Norgaard 2005; Max-Neef 2005), which is never an easy task. Interdisciplinarity will help to surpass the nature of ahistorical, subject-specific disciplines (i.e., problems with "parts") and can result in emergent new understandings and synthesis of complex issues as well as generate new questions. Agroecology, for example, is not a discipline, but rather an interdisciplinary and integrative *approach*. Taking this one step farther, in addition to the integration of different academic disciplines (the natural and social sciences and the humanities), we also need to think about the incorporation of different forms of knowledge (e.g., traditional, scientific, local, cultural, spiritual, experiential) (Méndez 2011).

In terms of combining different types of knowledge, there are benefits of considering both scientific and local knowledge: What Western knowledge or science has to offer that local

knowledge lacks is a broader appreciation of context beyond the local level that may actually favor local sustainability. On the other hand, local knowledge and input can be extremely useful in the analysis of a problem, and it can ensure that researchers are addressing the right questions and providing valid and practical solutions. This makes it easier to recognize patterns, connectedness, context, and relationships, which can then be structured in more effective and efficient ways: New institutional formations can be arranged to structure the more sustainable relationships, based on new framings of the issues at stake and the agents involved (Pahl-Wostl, et al. 2008). In short, the emphasis is now moving from the need to simply 'know more' and deploying even more information to policy and expert circles to developing adaptive cross-sectoral capacities and new uses of knowledge to respond adequately to the changing dynamics of social-ecological systems in concrete contexts of action.

9.0 CONCLUSION: REVISITING THE IDEA OF DEVELOPMENT IN VILCABAMBA

In Vilcabamba, many people (except for the more vocal group discussed in Chapter 4) seem resigned to the fact that they are, for example (in their own words), being invaded by foreigners (as some put it), that the community has already been devastated by drought, migration, agrochemicals, the fact that the land won't produce ("might as well put a price on it"), the loss of culture, and lack of identity. Dichter states that "Only when the majority of people in a country sense enough choice to be in some degree of control of their daily existence, if not of their lives, can it be said that development is occurring" (2003:6). Most Vilcabambeños don't feel in control. They feel like they don't have choices; that there are no jobs; that they have to migrate, although it is extremely difficult to even do that. Many of them also feel like their traditional knowledge and experience isn't important or doesn't matter because it's been surpassed by education in schools (valued as better and more important) and by modern scientific knowledge. Rapid developmental and cultural changes have resulted in dramatic shifts in the value ascribed to time, place, and tradition. They have a sense of the past and where they feel that they need to be or should be in the modernity that's been forced upon them, but no way of getting from the past to the future. Eduardo said that "*Se perdió la identidad. Somos gente mediocre, no somos ni de allá ni de acá. Estamos en el centro allí bailando* (People lost their identity. We're mediocre people, we're neither here nor there. We're in the center here, dancing)".

Being modern is a recurring theme that I heard during the course of my fieldwork. At times it was discussed ambivalently, while other times it was associated with pride or status. Some still refer to themselves as *campesinos*; others desire to move to the city or to emigrate and don't want to say that they're from the country. Similarly, through his fieldwork in the province of Azuay, where levels of migration are also very high, Pribilsky found that appearing modern provides status and the "desire to challenge the disparaging images of being rural folk and adopt those of *iony* modernity" (2009:194) (iony derives from the theme I [heart] New York, where many people from Azuay have migrated to, and is seen on t-shirts, bumper stickers, and elsewhere).

On the other hand, those who self-identify as *campesinos* associate their history and livelihood with working the land, and sometimes quite proudly. Interestingly, those who do so are mainly those who are still in touch with more traditional ways of farming. As Pribilsky describes it, "In the absence of other easily discernible ethnic identifiers, the crops villagers grew, the foods they ate, and the pace and rhythm of an agricultural calendar made claims on and formed the basis of local identity" (2009:187). In the Vilcabamba valley, however, the crops they grow are in many cases different than those they grew before, and their food sources are different as well. There is also a gap between those who continue to have great faith in the advances of modern agriculture and those who remember or know and continue to use time-tested methods of farming. One of these farmers said that "*Cuando la ciencia técnica y el empírico se coinciden, se funciona mejor. A veces no concuerdan la ciencia y la experiencia. Los científicos son afuera del contexto.* (When science and reality coincide, everything functions better. Sometimes science and experience don't agree. Scientists are outside the context.)"

The reasons for this disjuncture between the city and the countryside are due in part to the industrial development that has taken place in cities and how this has impacted life in rural areas, where many people feel left behind by the forces of development. Their feelings of isolation and neglect, and the perceived indifference of the government and those outside Loja province were discussed in various places in this dissertation, beginning with the introductory chapter. Also, with the recent disruptions in the agricultural calendar, due especially to climate change but also to the effects of development processes on farming practices and other aspects of life, they view their identity and aspects of time very differently than they did before. Hopefully at some point there will be a better reconciliation and transition between the past, present, and future, and better integration of science and local knowledge.

Pancho mused that "*En la época de oro, cuando empezó la propaganda del valle de la juventud, habían más arreglos. Los extranjeros empezaron a llegar, Johnny Lovewisdom era el pionero. La gente tenía fe, tenía creencias. Pero ya no hay de que vivir, y los jóvenes salen* (In the golden age, when the propaganda about the valley of youth started, there were more repairs [meaning money invested by the government in development, infrastructure, etc.]. The foreigners began to arrive, Johnny Lovewisdom was the pioneer. People had faith, they believed. But now there is no way to make a living, and the young people leave)." By the golden age, he was referring to the 1970s, when the Ecuadorian economy rapidly expanded due to the oil boom (which just as rapidly contracted in the 1980s with structural adjustment policies). During this time there were sizable public investments in credit programs, structural works, and enhancement of services in rural areas, which brought improvements to the lives of rural people. However, it also led to tremendous dependencies (Zamosc 1994): Due to ISI and modernization policies, peasant incomes began to depend on the price of agricultural

commodities and on the urban demand for labor. Mass unemployment was followed by mass migration to the cities. In addition, because all these adjustments involved changes in patterns of production and consumption, Ecuadorian peasants found themselves relying more and more on the market for fertilizers, agricultural inputs, transportation, and even food. To further complicate matters, as non-agricultural growth accelerated, the disparities between rural and urban incomes rose, creating major social tensions as expectations for better lives remained unfulfilled for the majority of the rural people. When rural areas are bypassed by development, they often become worse off than they were before.

As Ecuador has become more integrated into the global economy, many young people, in particular, emulate the West in terms of clothing, music, perceived values, and consumerism. They view Westerners as having easier lives (which many do). Many Ecuadorians do not want the young people to "copy", but yet it seems like it can't be stopped. Many wonder, what else can we do? This desire to copy comes not only from consumerism but also from globalizing development processes.

The long-term immigrants think that Ecuadorians shouldn't emulate the West. These earlier arrivals to the valley were part of the counterculture movement of the 1960s and beyond; they question various aspects of life and are interested to learn from tradition. In rejecting parts of their own cultures (such as overconsumption, industrialism, hectic and complicated lives, detachment from other people and nature), they gave up comforts and conveniences and went in search of alternatives. This means that, essentially, they are more likely to take risks than many other people. They are not actually environmentalists but rather are more like agrarians, who search for a mean of stewardship and sustainable use (Guha and Martinez-Alier 1997d) and have a relationship with the land. Agrarianism is a marginal strand in the environmental movement of

the North, whose core is a more biocentric view focused on conservation and preservation (see Section 7.2). Their position thus falls midway along the biocentric-anthropocentric continuum (Figure 17), where culture and ecology merge to generate sustainability.

These earlier immigrants see the needs of Ecuadorians in a different way than Ecuadorians see their own needs, which now tend toward the culture of immediacy; fast, easy money; short-term interests; 'solutions' or quick fixes to their problems; and going to the U.S. or Europe for what they perceive is a guaranteed easier life. Since these long-term gringos, who are now in many senses Ecuadorian, not to mention well-liked and respected, run counter to this tendency, it in effect causes them to take pause: This is different from the other images that they have of Westerners (e.g., in the media, newcomers, tourists).

In contrast, many more recently arrived immigrants try to make living in Ecuador a clone of the life they had elsewhere. They seek to impose their own values, expectations, and customs on their new place of residence, saying things like "this is not how we do it where I'm from." In the process, they lose the very qualities of life they were so eagerly seeking, if indeed they were looking for different qualities of life. One newcomer said that he was just going to live in Vilcabamba when "the weather is bad in Florida." This new type of development that Vilcabambeños are undergoing is simply real estate development. In order to have the least amount of detrimental impact, however, foreign living is best left to those who love places and people, who love to explore how others think and feel who are not like them. This can only be done by totally immersing oneself in that culture. Although in some cases newcomers may have good intentions, their interactions with autochthonous individuals tend to be neocolonial in nature. Their standards of consumption, criteria of success or failure, systems of values, and behavior patterns are very different from those of Ecuadorians; these reflect their affluence, and

their interactions with autochthonous individuals often put the local people in a position of dependence on the immigrants. It is against this backdrop that we will discuss how long-term immigrants have effectively been doing participatory development in the valley of Vilcabamba.

9.1 PARTICIPATORY DEVELOPMENT

As mentioned in Chapter 5, participatory development is a process in which communities or individuals join forces with outside actors to plan and carry out activities related to the community's development. It centers on outsider's facilitation of the community's process, focusing on decision-making by the community. However, intentional participatory research and development programs have sometimes failed in the sense that they have often not delivered many or all of the anticipated benefits, and occasionally they have been counter-productive. These problems have frequently been a consequence of serious misunderstandings on the part of outsiders concerning the predicaments and perspectives of the local people. In particular, they have sometimes not taken local dynamics seriously (Thompson, et al. 2007).

In development contexts, participatory action research (PAR) requires

1. a community partner(s)
2. clear goals/objectives determined in conjunction with partner(s)
3. adequate resources, time, and energy
4. requisite expertise
5. rigor and relevance

Ideally, PAR invites practitioners to consider development as best initiated, shaped, and directed by the people whose well-being it is intended to effect. Taking the view that the intellectual, cultural, and physical potential of rural populations has been a neglected development resource,

it seeks to empower their otherwise marginalized views and knowledge and to see them as a potential to be used for their own development. An important facet of PAR, therefore, is to enhance the capabilities and ambitions of community members: Social dimensions are emphasized, with the empowerment of individuals being seen as central to achieving both economic and ecological sustainability (Thompson, et al. 2007). Other essential elements are joint problem definition, authentic communication (incorporating transparency, respect, and confidence), and involvement in decision-making.

Thinking of the development that has taken place in the Vilcabamba valley between autochthonous individuals and immigrants of long-standing in the community, we can see that many of these requisites have been incorporated. For local people, it is a chance to engage in a more equal relationship where the mutual benefits are clear, which in turn allows them to voice their opinions and to question the actions of foreigners. The immigrants who are involved in these processes are well-integrated into the community; they are invested in relationships of mutual trust with local people, and have an intimate knowledge of local culture and ecology. They wear multiple hats: At various times, they have served as cultural brokers, facilitators, mediators, information sources, confidants, and advocates. They have also prioritized long-term processes, not short-term projects. Both parties have a vested interest in the relationship.

Scott (1998) has described the kind of knowledge that emerges from these processes: Mêtis is "forms of knowledge embedded in local experience" (as with the long-term immigrants) – a gradual process of great subtlety – which he sharply contrasts with "the more general, abstract knowledge displayed by the state and technical agencies" (which can be compared to the more detached and abstract knowledge of newcomers). Early immigrants often participate in life in every way, including celebrations, drought, floods, loss of electricity, lack of water,

social/economic/political life, elections, holidays, births, deaths, sickness, religion, family, vehicles, houses, animals, etc., which aids in the development of this form of knowledge. Scott says that "It is, in fact, the idiosyncrasies of mêtis, its contextualities, and its fragmentation that make it so permeable, so open to new ideas. Mêtis…places a premium on practical knowledge [and] experience…" He goes on to describe how it is particularly appropriate for instances where "the uncertainties are so daunting that we must trust our (experienced) intuition and feel our way." (Scott 1998:327).

This is a crucial aspect of the interactions between long-term immigrants and local people. In order for development to be truly effective, there is a need to start with people and not with goods. However, goods do not have minds of their own, and with goods there is no need for communication. Goods, particularly when economists and statisticians deal with them, become GNP, imports, exports, investment, infrastructure, and what not. Impressive models can be built out of these abstractions and quantitative terms, and they certainly have their usefulness in the study of developed countries, but tell us much less about development problems and poverty as such. On the other hand, dealing with people raises huge intellectual challenges, which requires more than economists, administrators, and money. The methods of production, patterns of consumption, and systems of ideas and values that suit relatively affluent and educated people are not likely to suit less affluent populations. Once again we are faced with the issue of appropriateness; the methods, technology, and implementation must be adapted to the people involved; they need to be helped to help themselves in order for development to be sustainable, and this requires a dynamic approach. Unfortunately, it has often been the case that poor countries have been encouraged to adopt production methods and consumption standards which destroy peoples' possibilities for self-reliance and self-help.

The capacity for sustainable development through PAR is improved when consultants are able to build on relationships that are already there, and when social distance is minimized. If people perceive that there is a great social distance between them and those who are attempting to collaborate with them, it makes this process more difficult and less likely to take place. Undoubtedly, most of the long-term immigrants *are* somewhat better off than the majority of local people, but these differences are not gross ones, and they are minimized, because they realize that it is important that these inequalities are not obvious.

The aim of PAR is ultimately to have a positive impact and to make the world a better place. The learning inherent to the process *can* be an end in itself because it generates awareness and empowers people to learn for themselves. However, the concepts of PAR don't always translate easily into practice. Furthermore, transforming ideas into action and impacts is difficult and often site-specific. If we examine the evidence presented here, however, we can see that the long-term residents and local people have together experienced a number of successes in this area: For example, *Proyecto Toronche,* tempeh making, the water project from *El Bosque* to San Pedro, *Colinas Verdes*, the water committee, *Productos Los Huilcos,* and the work in conservation, livelihoods, and education.

In this way, the synergy that develops between the well-integrated expatriates and Ecuadorians supports change. The expats are more likely to take risks (part of the reasons that they ended up in Ecuador), whereas Ecuadorians often exhibit path dependence due to their vulnerability: It is easier, cheaper, and less risky to follow established practices than to invest in alternatives. The relationships that form between expats and local people strengthen the capability of poor households to cope with the complexity and uncertainty they are exposed to, without which they are reluctant to take chances and to innovate, and therefore remain trapped in

low-risk (in terms of a steady income) but often low-yielding livelihood strategies that often separate them from their families. Importantly, any changes that are proposed stand in some organic relationship to what they are already doing. Strengthening poor rural households to create more resilient and robust food systems and remain active and productive agriculturalists despite experiencing shocks and stresses of different kinds and magnitudes is a key challenge for development (Thompson, et al. 2007). It is not simply a matter of raising yields in order to halt world hunger. Unless life in rural areas can be rejuvenated, the problem of poverty is insoluble and will inevitably get worse.

9.2 SOCIAL MOVEMENTS, NETWORKS, AND CULTURE

Social movements and networks can also influence processes of development. In the recent past, for example, some social movements have acted in defense of locality or community against the nation and the model of scientific industrialism. For example, social movements among indigenous people in Ecuador, in particular in the Amazonian region, have been the topic of considerable academic discussion (e.g., Erazo 2003; Korovkin 2001; Perreault 2003; Sawyer 1997, 2004; Wilson 2002). Social movements are phenomena with technical, scientific, social, economic, political, and philosophical components (Jamison and Perkins 2010). They can therefore play a role in challenging dominant views and in expanding the dialogue around alternative ideas of little d development (Mitlin, et al. 2007).

Social networks can also contribute to creating positive change. Assadourian (2010) discusses how social networks can tap into the various resources at their disposal – financial, cultural, political, and familial resources – in order to initiate cultural changes. Referring to

James Davison Hunter's analysis of how this phenomenon occurs, he reminds us that cultural change is best understood through the examination of networks, rather than certain heroic individuals redirecting the course of history.

It certainly appears that the heart of the matter in moving toward sustainability is change resistance, or the social side of the problem, which is very difficult to surmount. This is probably part of the reason why education alone is not enough to change behavior: Institutional and social supports are also required. For example, through testing three models of climate-related environmental action – one focused on information transfer from science to the public, another on sociodemographic characteristics, and a third on socio-cultural variables like interpersonal rules and social networks – Jaeger et al. (1993) found the latter model to be strongly superior to the others. Social movements and networks seem ideally suited to recognize, read, and engage constructively with the underlying processes of development, if that is their focus (see also Hawken 2007).

In the present case, the social networks that have been built up between Ecuadorians and long-term immigrants have clearly been an asset to the community and have been instrumental in creating change. People's perceptions, which shape how and what people know and "see", and therefore how they act, are directly influenced by their social, political, and institutional milieu. Thoughts and actions are therefore socially embedded, which is part of the reason why thoroughgoing change is so difficult to achieve. These networks, however, have been able to penetrate the social embeddedness of people's perceptions and to provide a wider perspective. In this way, people's views, knowledge, and capabilities are empowered and enhanced, and sometimes questioned and modified. Substantive changes on the individual or community level thus begin within the context of local values and culture, and there is a shift from a focus on

outcome to a focus on process and avenues for constructive action. Development means "what we want to accomplish," or, as defined by Finan, "directed change toward the minimization of poverty and the expansion of opportunity" (1997:84).

One mechanism in this process is the ability to make the invisible and abstract more real, comprehensible, and achievable. This occurred in the present study, for example, when the beneficiaries of *Proyecto Toronche* realized the advantages of using drip irrigation, and in a very indirect way, the numerous drawbacks of deforestation and burning. Previously, there was a psychological barrier to believing that these alternatives could work. In the same vein, Carolan (2006) discusses how merely educating people about the costs and benefits of sustainable versus conventional agriculture is not usually enough to produce substantial changes in farm management practices. What is necessary, in addition, is that people comprehend or "see" not only the visible advantages and disadvantages of each but the invisible or epistemologically (and sometimes physically) distant (not readily perceived by direct perception) advantages and disadvantages. For example, the benefits of conventional agriculture are readily apparent (e.g., absence of weeds and pests, large yields), but the costs are not (because they are partly externalized to society). The opposite is true of sustainable agriculture: Its advantages include decreases in soil and nutrient loss, increases in beneficial soil microorganisms, and decreases in the amount of pesticides used, which are not readily perceived or visible. In general, the modern tendency is to see and be conscious of only the visible and to not see, or to forget, the invisible things that are making the visible possible and that keep it going (Schumacher 2010 [1974]). Even modern development has tended to frame the preconditions of success as things that are created – ordered, bought, or comprehensively planned – rather than as a process.

Culture is an integrated system of human knowledge, belief, and behavior. However, taken together, the knowledge, beliefs, behavior, and relationships that operate in our present situation are major obstacles to sustainability. In addition, there is no glue that holds social formations together and promotes a culture of sustainability; rather, human relationships are to a large extent based on economics. We need to reconnect the parts of the system that is broken, and this requires not a silver bullet but many little hammers. Natural science and economics are essential to the new paradigm, but they are not enough to drive the changes that are needed. An alternative model of development requires the true integration of various disciplines in order to work toward a systemic model rather than a lineal one, and in addition, development should be subject rather than object based (Walsh 2010). In other words, an integral or comprehensive development plan will work toward the satisfaction of human needs and well-being – people, rather than objects, will be the center of attention (Red Cántaro 2005).

Sustainability needs to be understood as a fundamental cultural idea (Adams 2006). What will help in this regard is to have development take place not in terms of grandiose projects but rather in consideration of the specific needs of regions or districts. It is crucial for the issues surrounding sustainable development to be grounded in real places and according to local social, economic, and environmental contexts. This requires an economic and cultural structure (focused on fostering inner cohesion and identity) as well as a variety of occupations available, accompanied by a focus on empowerment and strengthening human capacities, which will increase intrinsic and extrinsic motivation. Humans do have underlying motivations or drives which are psychological or social in character.

These facts help us to understand not only why social and cultural change is so difficult to achieve, but also why a change in intellectual direction does not result in immediate changes

in the ideas and projects that continue or are undertaken, or how they are implemented. We know that we need to work toward sustainability and sustainable development, but it is much easier said than done. A lot of trial and error has taken place, and a great deal of necessary knowledge already exists, but it needs to be pulled together and systematically organized. The future of development will depend on the organization, communication, and implementation of this knowledge. It is not enough to merely have new policy.

Once again, as quoted at the end of Chapter 7, "We can't solve problems by using the same thinking we used when we created them" (Albert Einstein). However, recent developments in Ecuador are further examples of this type of thinking. As discussed in Chapter 7, nature was granted "rights" in the Ecuadorian Constitution of 2008. The mining law, which was put into effect in 2009, is in conflict with the uses of water as set forth in this Constitution (first, for human consumption and second, for agriculture). The Correa administration continues to follow its extractive model of economic development by allowing mining concessions in various places in Ecuador, even though it requires 8,000 liters of water to extract one ounce of gold. In order to have "conservation with development," Correa has, for example, declared that mining will not affect the landscape of Tres Lagunas, south of Cuenca, and has declared the area a zone of protection (Ochoa 2011) (which focuses only on the epistemologically near criteria of "conservation"). Upon his visit there, only people in favor of the mining were given access and a chance to talk with the President. Again, although both economics and the environment have been taken into account – if only on a very superficial level – people, a crucial component of sustainable development, are missing from this equation.

Various other proposals for sustainable development are further examples of linear thinking. Three such proposals are market environmentalism (e.g., carbon markets, emissions

trading, REDD[69]); ecological modernization, which requires more direct regulation of various industrial and consumption practices (a stronger managerial focus); and attention to individual consumers and their role in social networks and movements (Hulme 2009). The first two demonstrate the same thinking that was used when our problems were created, and suggest solving them through the market and state-sponsored interventions. Neither address poverty nor environmental degradation (at least not directly), and certainly not the link between them (what people have to do with environmental degradation, and why it occurs). The last is represented by the research and case studies in this dissertation.

This thesis has sought to demonstrate, at least in part, the complexity of the problems of environmental degradation and climate change. It has also attempted to show how true sustainability and sustainable development, incorporating both people and culture, can be achieved. Environmental sustainability has a priority, non-negotiable role; it is a prerequisite for either social or economic sustainability. We can start with the Ecologically Integrated paradigm as a framework for our thinking and for future research (Table 6, p. 220), and aim for the center of the biocentric-anthropocentric continuum (Figure 17, p. 207). In addition to the good life, the term *sumak kawsay* is also defined as living well or collective well-being, issues that many over the years have already emphasized is essential for development on the human scale. Essentially, the crises that we are facing are not at their core environmental ones, but are rather crises of development. The importance of PAR and social movements, networks, and culture in both achieving effective development and in moving toward sustainability cannot be underestimated. This also calls for a renewed emphasis on education and institutional and social supports.

[69] Reducing Emissions from Deforestation and Forest Degradation (REDD), a set of steps designed to use market and financial incentives to reduce the emissions of greenhouse gases from deforestation and forest degradation.

Inherent to all of these notions is a focus on process and avenues for constructive action, considering the specific needs of real places and according to local social, economic, and environmental contexts. In this way, perhaps we can truly work toward *sumak kawsay*, the good life.

GLOSSARY

achira – (Spanish) canna (*Canna edulis*); arrowroot. A traditional Andean cultivar whose roots are made into a starch or flour; native to South America.

agroecology – the use of ecological concepts and principles to study, design, and manage agricultural and food systems. Agroecology searches for solutions appropriate to the resources and constraints of specific places, taking ecological, economic, and social dimensions into account.

agrochemical – a generic term for the various chemical products used in agriculture (which includes a broad range of pesticides, insecticides, herbicides, and fungicides, as well as synthetic fertilizers, hormones, and other chemical growth agents) (Wikipedia). At times the term "pesticide" is used to refer to the various agrochemicals.

bizcochuelo – (Spanish) a dessert made from flour, eggs and sugar.

campesino – (Spanish) a peasant; a person lives in the countryside and/or who makes their living from the land.

caña or **caña de azúcar** – sugar cane. One of the most important cash crops in the valley of Vilcabamba.

canje – (Spanish) trade or barter, usually without the exchange of money. Also: *trueque*.

capacitation – training, education; empowerment; support and strengthening for people, businesses, or organizations.

chacra – (Spanish) – small farm.

cooperativa – (Spanish) cooperative.

curandero – (Spanish) a folk healer or medicine man/woman. Also: *shaman*.

cuy – (Quichua) guinea pig. A customary and traditional food, especially in the highlands.

ecosystem services – benefits and services that result from healthy ecosystem functioning, including fresh water; food; timber, fiber, and fuel; biological products; nutrient and waste management., processing and detoxification (recycling and distribution of nutrients); regulation of infectious disease; cultural, spiritual, and recreational services; and climate regulation.

extranjero – (Spanish) a foreigner. Can either be used in a neutral fashion or to indicate an amount of discontent, referring more so to a stranger.

gringo – (Spanish) a foreigner; generally refers to a person from a non-Spanish speaking country. In Vilcabamba, signifies a person from outside of Ecuador. The word is sometimes used in a disparaging fashion. Reference.com states that "The usages of *gringo* sometimes are derogatory, paternalistic, and condescendingly endearing, especially when a foreigner condescends to the people and culture he or she is visiting."

hacendado – (Spanish) owner of a hacienda.

hacienda – (Spanish) a large estate or ranch.

hectare – unit of land measurement equal to 2.47 acres.

horchata – (Spanish) a delicious and popular drink typical of Loja province, usually made into a tea, ruby-red in color and consisting of 28 herbs (different than the milkshake-like beverage of the same name, which is found from the Southwestern U.S. to Northern Ecuador).

huasipungo – (Quichua) a system in which an agricultural worker (often an Indian) and his family were bound to a landowner. In exchange for working on the hacienda, the worker (*huasipunguero*) had access to a small plot of land. The arrangement usually resulted in the Indian becoming indebted to the landowner. The term may also refer to the plot of land used by the worker. For the workers, the *huasipungo* system was based on a trade and subsistence economy.

huasipunguero – (Quichua) an agricultural worker, usually of indigenous descent, who worked the land for a *patrón* or *hacendado* and was allowed access to a small plot of land in return.

huerto – (Spanish) a mixed garden in which there are multiple strata of different trees and plants, and sometimes animals as well.

huilco – (Quichua) also spelled *wilco*. A tree which was formerly ubiquitous in Vilcabamba and considered sacred by the indigenous Paltas, and later by the Incas. From the *Mimosaceae* family, *Anadenanthera colubrina*.

humita – (Spanish) a delicious corn cake-like food made from fresh ground corn off the cob, grated cheese, eggs, butter, and a little sugar, mixed together, inserted into a corn husk wrapping, and steamed. Traditional to Loja province.

Inca – (Spanish) a highly developed, complex society of indigenous peoples, originally based in Peru, who spread their reign over other parts of the Andean region of western South America until the time of the Spanish conquest. Also: *Inka*.

máchica – (Quichua) flour of toasted barley, sometimes used with sugar and cinnamon to make a warm gruel or drink.

Madre Tierra – (Spanish) Mother Earth. Also: *Pachamama* (Quichua).

Mandango – a rock formation that caps the mountain immediately to the west of the town of Vilcabamba. It resembles the profile of a face looking skyward, and may be one of the reasons that the valley was considered sacred to the indigenous people. A number of legends are associated with it.

mestizo – (Spanish) a person of mixed race; in Ecuador, this refers to a person of mixed white and indigenous ancestry.

minga – (Quichua) a reciprocal work group. These were common in prehispanic times and in some forms still persist today. In Ecuador, a person may be required to contribute a certain number of days or hours to participate in, e.g., the building of a school or a water pipeline. In many cases individuals are permitted to pay someone else to perform their work for them.

minifundio – (Spanish) a smallholding of land under 5 hectares (12.35 acres).

Oriente – (Spanish) east. In Ecuador, also refers to the Amazon region, to the east of the Andes mountains.

Pachamama (or Pacha Mama) – (Quichua) Mother Earth. Also: *Madre Tierra* (Spanish).

panela – brown sugarloaf, made from sugar cane and used as a sweetener.

páramo – (Spanish) high plain.

patrón – (Spanish) employer; boss; landlord.

pesticide – see "agrochemical".

plátano – banana.

Quechua – the language spoken by the Incas. Quichua (also spelled Kichwa) is the dialect spoken in Ecuador.

Quichua – the dialect of the Quechua language that is spoken in the northern Andes. Also: Kichwa.

San Pedro – 1) the town San Pedro de Vilcabamba. 2) *Echinopsis pachanoi*, a cactus that contains mescaline, and therefore has hallucinogenic properties; *sampedrillo* (Spanish) or *aguacollo* (Quichua).

shaman – a folk healer or medicine man/woman. Also: *curandero*.

sucre – (Spanish) the Ecuadorian unit of currency, used before the adoption of the U.S. dollar in the year 2000.

sumak kawsay – (Quichua), **el buen vivir** (Spanish) the good life, related to living in harmony with nature. A tenet of Ecuador's 2008 Constitution.

tamale – (Spanish) dish made of minced and seasoned meat packed in cornmeal dough, wrapped in *achira* leaves, and steamed.

tempeh – (Indonesian *tempe*) fermented soybean cakes, originally used in Indonesian cookery; a vegetarian source of protein.

tienda – (Spanish) a small store.

trueque – (Spanish) trade or barter, usually without the exchange of money. Also: *canje*.

Vilcabamba – (Quichua) a town in southern Ecuador, founded in 1576. From *vilca*, meaning sacred, and *bamba*, valley or plain: Sacred Valley. *Vilca* may also come from *huilco* or *wilco* (see definition under *huilco*).

yuca – yucca, cassava, manioc; an edible tuber. Scientific name *Manihot esculenta*, a woody shrub of the *Euphorbiaceae* (spurge family) native to South America.

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