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Vivir Mejor

An Integrated Approach to Chronic MaInutritionand 'Living Better' in Rural Guatemala

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An Integrated Approach to Chronic Malnutrition and 'Living Better' in Rural Guatemala

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Abstract

Chronic malnutrition's disproportionate impact on indigenous Guatemalans remains an obstacle to rural development. Emerging research suggests the effectiveness of 'integrated' home garden interventions in the reduction of malnutrition, though little research has explored situated definitions of integration and modern constraints to such approaches. Drawing upon nutritional anthropology and post-development theory, this case study examines a home garden initiative known as the Casa Granja project, administered by the community-based organization Semillas para el Futuro. Based on evidence of the Casa Granja framework's positive, long-term impact on the nutritional status of women and infant children, present research explores the framework's theoretical underpinnings to determine if and how such an approach might be replicated. Thematic deconstruction of interviews and secondary documents reveals four core principles and corresponding practices which constitute the organizational ideology of *Vivir Mejor*, 'living better.' *Vivir Mejor* resonates with post-development plurality and gestures toward values of interrelatedness and self-direction. Analysis concludes that while Casa Granja represents a shift towards new development paradigms, its viability is constrained by funding structures created to service those paradigms. Future research might undertake a systematic review of comparable home garden initiatives to enrich understandings of an 'integrated' approach to chronic malnutrition.

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Acronyms

AR	Anemia rates
ECA	Empresa Campesina Asociativa
FAO	Food and Agricultural Organization of the United Nations
GTQ	Guatemala quetzal (1 GTQ = 0.10 GBP at time of writing)
INCAP	Instituto de Nutrición de Centro América y Panamá (Nutrition Institute of Central America and Panama)
IOs	International Organizations (World Bank, UN, IMF, etc.)
MNPs	Micronutrient powders
NGOs	Non-governmental organizations
RUSFs	Ready-to-use supplemental foods (also known as ready-to-use therapeutic foods or RUTFs)
SAPs	Structural Adjustment Plans
SDGs	Sustainable Development Goals
SPJ	San Pablo Jocopilas
STU	Santo Tomás la Union
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

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Introduction

COVID-19's arrival in Guatemala has thrown the fragility of food security and nutrition into sharp relief. As dietary staples like maize, rice, and beans surge in price, the country's motorways are lined with men, women, children, and elders brandishing *banderas blancas*—white flags and signs indicating a household where food and income are in short supply (Gamarro, 2020; Ola and Ozaeta, 2020). Disparities in public and private health services are stark, and movement restrictions between departments continue to devastate the country's informal economy (Patzán, 2020). Staying home is a luxury many cannot afford (see Figure 1). Domestic and international actors anticipate the pandemic's imminent arrival in rural areas, where poverty and chronic malnutrition render predominantly indigenous communities particularly vulnerable (Cuevas, 2020). Enhanced economic vulnerability to food insecurity and physiological vulnerability to infectious disease are symptomatic of the pervasive and persistent inequality facing Guatemala's rural communities.

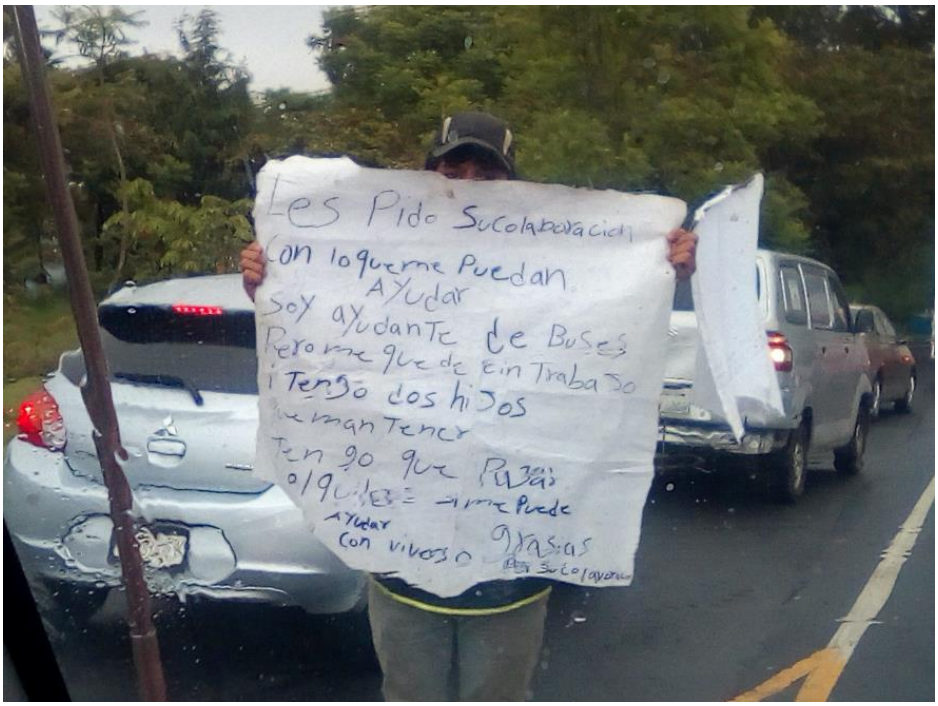

Figure 1: Guatemalan bus assistant holds a bandera blanca requesting financial assistance in caring for his two children, paying rent, and buying groceries (courtesy of Armando Astorga).

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Guatemala is majority indigenous with 21 distinct Maya languages, plus several non-Maya indigenous groups (Grandia, 2012), and approximately half the population resides in rural municipalities (FAO, 2014). The mountainous western region known as the *altiplano* experienced extensive violence during the country's prolonged civil war and is now home to concentrated rates of poverty and illiteracy, plus minimal penetration of public services (INE, 2012). Levels of poverty and chronic malnutrition in Guatemala are among the highest in the world, with approximately half of all children experiencing malnutrition in the form of stunting (ECLAC, 2018; UNICEF, 2009). Stunting and associated micronutrient deficiencies are the result of inadequate nutrition over prolonged periods of time, beginning in early childhood (WHO, 2020). Rates of stunting among indigenous children are approximately twice that of *ladino* populations, the country's minority ethnic elite (Rohloff and Díaz, 2013; Davis et al, 2014). The impact of chronic malnutrition goes beyond public health, as deficits early in life are associated with physical and cognitive impairments that may compromise an individual's capabilities well into adulthood (Dewey and Begum, 2011). In recent years, strategic nutrition interventions have become a priority for a multitude of public, private, and civil sector actors. This case study will draw upon post-development debates and the structural vantage point of nutritional anthropology to examine one such intervention.

Perched on the lower slopes of the Pacific piedmont known as the *bocacosta*, the remote village of Chocolá is the field site for the non-governmental organization (NGO) Semillas para el Futuro, henceforth referred to as Semillas. Semillas focuses its efforts on the persistence of chronic malnutrition among indigenous families in Chocolá, though their mission articulates a more expansive vision of "integrated community development" (De Berge, 2018). Semillas' flagship program is the Casa Granja project: a nutrition and food security intervention which employs local staff and collaborates with rural families[1] to construct and maintain home gardens and small livestock enclosures. Over an extended period of time (minimum one year, usually two years or more), families receive mentoring in the optimization of food production based on: existing

[1] Kinship structures in Guatemala are hardly formulaic, but this analysis will assume Goodenough's (1970) functional definition of the household with its emphasis on the mother-child bond as the nucleus of the family group. This focus is problematic because of its gendered assumption about the reproductive and domestic roles of women (Yanagisako, 1979), but it is based on observations of maternal authority in decisions pertaining to household feeding practices in rural Guatemala (Wehr et al, 2018).

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household resources; the nutritional value of locally-available fruits, vegetables, and animal protein; early childhood nutrition and the addition of nutrient-dense foods to culturally familiar recipes; hygienic food preparation; and recycling of food and garden waste (De Berge, 2018). Custom, household-level programming is complemented by education and leadership programs designed to build collective resilience and encourage civic participation. A three-year independent study known as the Nestlé Project (2014–2017) provides quantitative evidence of the Casa Granja framework's positive impact on family nutrition (Mazariegos et al, 2018). Based on this success, leadership unanimously expresses a desire to expand the Casa Granja framework beyond Chocolá. But civil sector competition, repeated fundraising setbacks, and imminent founder departure pose threats to the project's continuation. Semillas leadership believes that the future of the Casa Granja project depends upon the assistance of or acquisition by a larger development entity (see Appendix I, Interview 1).

Semillas Founder and President Suzanne De Berge partially attributes fundraising difficulties to the tricky business of defining and communicating the nuances of an 'integrated' approach to malnutrition (Interview 1). She notes the ease with which one slips into development jargon that ultimately misrepresents the character of the Casa Granja project. The word 'integrated' is used to describe a range of activities—from sustainable tourism (Simpson, 2007) to water management (Byars et al, 2009) to industrial dairy farming (USDA, 2020). Like 'sustainability,' 'empowerment,' and 'participation,' there is an overwhelming lack of consensus about the meaning of 'integration' and the methods by which it can be achieved (Cornwall, 2007; Koroneos and Rokos, 2012). The abstraction of an integrated approach is an 'essentially contested concept,' in that the term's proper function "inevitably involves endless disputes about proper use on the part of users" (Gallie, 1955: 169).

Like other integrated approaches to nutrition intervention, the Casa Granja framework emphasizes interdisciplinarity. But present research suggests that Casa Granja relies upon a unique ideological framework embodied in the slogan *Vivir Mejor,* or 'living better.' Operating on quantitative and qualitative evidence of the Casa Granja framework's successful reduction of chronic malnutrition in Chocolá, present research attempts to distill the essential principles and practices of *Vivir Mejor* in order to better understand if and how the Casa Granja framework could be translated to new

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development contexts or replicated at scale. Using qualitative methods including a series of semi-structured interviews and the analysis of secondary documents, I have identified four core principles and corresponding practices that distinguish *Vivir Mejor* and the Casa Granja framework from conventional nutrition interventions. Subsequent chapters will introduce pertinent academic debates, namely the work of theorist Arturo Escobar (2018a; 2018b) and the South American philosophy of *Buen Vivir* (Gudynas, 2011). Proposing the Casa Granja project as a quasi-Escobarian 'transition narrative,' critical analysis of *Vivir Mejor*'s principles and practices will be followed by speculation on the nuances of future application. This case study highlights the tensions between an integrated approach to chronic malnutrition and the confines of the modern development complex.

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Methodology

This research sets out to determine the replicability of a context-specific, integrated approach to chronic malnutrition. Through a remote case study of the Casa Granja home garden project and its application in Chocolá, research was planned and executed in accordance with the following research questions:

- What are the principles and practices that distinguish an 'integrated' approach to chronic malnutrition in rural Guatemala?
- What are the obstacles to application of these principles and practices in new development contexts?

This research contributes to emerging dialogue around home garden interventions as a holistic strategy for addressing the prevalence of chronic malnutrition in Guatemala and throughout the Global South.

Field Site: A Brief History of Chocolá

Chocolá clings to Guatemala's western volcanic slopes, surrounded by dense tropical rainforest. With rich soil and high annual rainfall, the region was essential to production of food commodities pre- and post-Hispanic and continues to function as a domestic agricultural hub (Kaplan, 2004). Chocolá is classified as an *aldea* or suburb, recently upgraded from an informal agrarian community, in the department of Suchitepéquez. Annexed by the municipal government of nearby San Pablo Jocopilas (SPJ), the area's population is steadily growing, presently estimated at just over 23,000, though settlements are geographically dispersed (INE, 2020). Founders Suzanne and Earl De Berge visited Chocolá as volunteers in 2004 and founded the organization Semillas para el Futuro in 2007. With Program Manager Armando Astorga joining the team in 2010, the Casa Granja project has expanded to sites throughout SPJ, Samayac, Santo Tomás La Unión (STU), and

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a number of informal rural settlements.[2] For the purposes of this research, I will use Chocolá to refer to the collection of rural villages where Semillas operates.

Figure 2: Map of Guatemala, Chocolá indicated by red triangle (Ezilon, 2009).

The village itself sits atop a series of archaeological mounds marking the remnants of an ancient Maya city, said to be an important polity in the "seminal, but still highly mysterious" Southern Maya Zone (Kaplan, 2004: 84). Historians and archaeologists suggest that the ancient city was instrumental in the cultivation of *cacao*, or cocoa beans. Indeed, Chocolá's climate is ideal for growing the hard-shelled fruit once monetized by the Classic Maya from 250–900 CE (Baron, 2018). The monetization and documented ritual use of *cacao* in Mesoamerica suggest the potential economic, social, and spiritual significance of Chocolá as a pre-Columbian site.

The region's ancient links to *cacao* have since been eclipsed by the coffee boom of the mid-nineteenth century. Guatemalan coffee production was in full swing by 1850, and Finca Chocolá

[2] Including but not limited to the communities of La Piedrecitas, El Esfuerzo, Lolemi, and Pacamaché.

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became one of the country's eminent, industrialized plantations. Totaling 2,500 hectares in its prime, Fina Chocolá was a prolific producer of coffee and sugar cane and one of the first *fincas* to build channels into American coffee markets (Wagner et al, 2001). Nineteenth-century proprietor José Guardiola imported indigenous laborers from the central department of Quiché[3], transplanting them in predominantly Kaqchikel[4] territory—a historical displacement with enduring impact on the region's cultural identity (Kraemer, 2008). Acquired by a German corporation in 1891, Finca Chocolá was privately run until World War II, at which time Germans were forcibly deported from the country and vast plantations nationalized (Kaplan, 2004). At the height of Guatemala's civil war, General Efraín Ríos Montt and his military government de-nationalized *fincas* across the country. Contemporaneous political and economic reforms introduced a register of autonomous agricultural cooperatives, Empresas Campesinas Asociativas (ECAs), which assumed political rule in unofficially-incorporated agrarian communities (El Fondo de Tierras, 2013). The Chocolá ECA became one of the largest agricultural cooperatives in the country, dividing the original Finca's remaining 800 hectares into individually-owned *parcelas*[5], most of which are still devoted to small-scale coffee cultivation.

The 1996 Peace Accords brought a formal end to the violent, 36-year civil war. However, structural and embodied violence against indigenous populations continues (Knowlton, 2017). Class and ethnic divisions are exacerbated by vast land inequality, environmental degradation, and the exploits of extractive industry (Batz, 2017). Today, the Finca's grand *beneficio* building rises above Chocolá's town center, serving as headquarters for the aging ECA. Despite dwindling membership and inner turmoil, the ECA retains considerable political and social influence, namely the power to regulate local coffee processing and pricing (Kraemer, 2008). Modern demand for dense, 'hard bean' coffee grown at higher altitudes has crippled low-altitude coffee-growing

[3] The department of Quiché is home to the K'iche' people. K'iche' is the modern spelling, adopted during standardization of Mayan languages in the late 20th century.
[4] Previously Cakchiquel.
[5] In Chocolá, *parcelas* and home garden plots are separate entities. Home gardens are typically stationed in and around family homes, whereas *parcelas*, being derived from the original Finca, are geographically removed from the village itself. Note that farming is traditionally men's work, thus the majority of *parcelas* are owned and managed by male members of the household while women's domestic responsibilities frequently include maintenance of home gardens. Though gender politics of labor activities are increasingly complex, this is consistent with typical gender divisions of labor in rural Guatemala (Katz, 1995).

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regions like Chocolá (Fischer and Victor, 2014). Still, the crop is woven into Chocolá's social fabric. Despite unreliable yields and poor prices, *"el café es nuestro corazón,"* or "coffee is our heart," is a common refrain about town (Interview 6). Like much of rural Guatemala, Chocolá experiences high levels of poverty and chronic malnutrition, with few education opportunities and a struggling local economy. However, episodes of displacement during the coffee-boom and later the civil war, combined with divisive internal politics, distinguish Chocolá from highland villages with unifying indigenous identities. These dynamics present unique challenges for integrated community development and play a substantial role in the ongoing evolution of the Casa Granja framework.

Data Collection & Analysis

This research employed mixed qualitative methods to deconstruct practical and ideological definitions of an integrated approach to chronic malnutrition, based on Semillas' representation of and individual perspectives on the Casa Granja framework. Data collection included:

- Review of the Nestlé Project,[6] an independent nutrition study conducted by INCAP and the Nestlé Foundation (2013–2016)
- In-depth, semi-structured interviews carried out between April and July, 2020
- Supplemental analysis of secondary data and internal documents provided by Semillas and partner organizations

This case study—specifically analysis of Guatemala's civil sector and fundraising environments—is further informed by my own time living in Central America and working as a regional online fundraising consultant.

A total of 18 interviews were conducted remotely via Zoom, Skype, or telephone (see Interviews in Appendix I). Interviewees were purposefully selected based on their intimate knowledge of the

[6] To establish the methodological prudence and viability of the Nestlé Project as a secondary data source, the project was approved by INCAP's Internal Review Board and satisfied requirements of funding bodies and partner organizations.

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Casa Granja project and/or agriculture and nutrition in rural Guatemala. All interviews were conducted on a voluntary basis, and participants who requested anonymity were invited to select a pseudonym. Securing written consent was problematic in certain cases due to literacy level and language barriers, but several participants expressed a desire for formal documentation. For these reasons, participants were offered a choice between providing oral or written consent. To ensure informed consent (Thorne, 1980), all participants received either a Participant Information Sheet or a detailed explanation of research objectives, significance of participation, and the opportunity to discuss any areas of concern. With permission, audio was recorded and used to verify notes. All files were stored on password-protected devices.

Qualitative methods were intentionally selected as the programmatic and spatial confines of this case study allowed a degree of conceptual flexibility (Morland et al, 2002). Drawing inspiration from Spradley's (1979) 'rapport process,' interviews sought to cultivate a mutually beneficial relationship based on trust and participation. Interviewees were engaged in exploratory conversations, guided by a number of questions tailored to the individual's experience and expertise. Inductive reasoning was used to generate descriptive data, and data was then uploaded to the software program NVivo for thematic analysis. Iterative coding was used to triangulate key principles, practices, challenges, and opportunities. Theoretical sampling was used in later iterations of data collection in the form of follow-up interviews, emails, and cross-reference with secondary documents to corroborate suppositions and fill in gaps. Field notes and memos were used throughout data collection and analysis to track observations and patterns.

Based on the demonstrated value of supplemental document analysis (Bowen, 2009), additional data was derived from a series of secondary documents provided by Semillas staff and partner organizations including INCAP and Maya Health Alliance (Wuqu' Kawok). Secondary documents included fundraising flyers, past survey results, training materials, photos, internal project reports, and proposals for expansion (see Secondary Documents in Appendix II). Though the methodological rigor of certain secondary sources could not be verified, data was frequently compared to comparable studies on malnutrition in Guatemala (Delgado, 2010; Wehr et al, 2010; Martorell, 1992) and third-party accounts of Chocolá as a field site (Kraemer, 2008; Green, 2014; Kaplan and Umaña, 2018).

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Ethical Considerations & Limitations

The COVID-19 pandemic demanded adaptation of research methods. Original proposals included a remote survey and virtual correspondence with local families in Chocolá. However, being aware of the pandemic's immense pressure on rural families and the financial burden of Internet connectivity, the survey component was eliminated. Physical distance forestalled more ethnographic research which would have provided valuable insight on participant experience and enriched assessment of the project's implementation and impact. Limited sample size means conclusions drawn from interviews may not represent the views of a broader population (Almeida et al, 2017). Nonetheless, findings may be of interest to professionals working on nutrition and food security, scholars of development, and funding bodies seeking integrated solutions to chronic malnutrition.

Reflexivity in feminist epistemologies is an imperfect practice and one that is bound to fail (Doucet and Mauthner, 2007; Rose, 1997). Yet, I feel it is necessary to elaborate on the contours of power in my own research. As a white, American woman, my world view has been shaped by social structures and education systems of the Global North. I am deeply conscious of Guatemala's history of racial and class-based violence, as well as the profundity of American exploitation in the region. To avoid reproducing power imbalances, this research was in fact subject to an ongoing process of reflexivity and self-interrogation. To that effect, I have intentionally sought out theorists from the Global South, specifically Latin America, and throughout interviews, I strived to create a sense of mutuality and respect. Findings will be shared with Semillas leadership and made available to all research participants. As a bilingual researcher, my translations are also vulnerable to critiques of cross-language research (Temple, 2002). A number of terms have been maintained in their Spanish form to engage with site-specific meanings and the nuances of translation.

This brief history outlines pre- and post-colonial significance of Chocolá as a field site, enumerating a number of social, political, and environmental transformations that will come to bear on modern food systems in Guatemala and the application of the Casa Granja framework. Future chapters will situate the Casa Granja framework within a variety of nutrition interventions,

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including comparable home garden projects, to inform the analysis of an integrated approach to chronic malnutrition.

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Theoretical Foundations

What we eat is not simply a matter of physiological necessity: nutrition is determined by an array of cognitive, social, cultural, political, and ecological factors. A so-called 'integrated' approach to malnutrition must therefore address the complex and interrelated determinants of nutritional status. Merriam-Webster Dictionary (2020a) lists two related but distinct definitions for the verb to integrate: (1) "to form, coordinate, or blend into a functioning or unified whole," and (2) "to end the segregation of and bring into equal membership in society or an organization." Certainly Semillas' proposition of integrated community development involves the primary definition of integration, as the program takes an active interest in questions of nutrition, food security, agriculture, education, leadership, gender, entrepreneurship, and environmentalism. But the secondary definition, which speaks to the practice of desegregation, takes integration a step further by acknowledging past separation. An integrated approach thus must begin by deconstructing siloed approaches to the study and cultivation of nutrition.

Lenses of Nutritional Anthropology

Food and nutrition are situated within a complex ecology of interrelated systems. Conventional nutritional science, derived from chemistry and physiology, is a distinctly biological discipline. In isolation, it is incapable of addressing the vast array of cultural, socio-economic, political, and environmental factors which perpetuate chronic malnutrition in Guatemala. Alternatively, the lens of nutritional anthropology provides a foundation for a more holistic understanding of nutritional status and its determinants. As a field of study, nutritional anthropology is interested in "the interrelationships of biological forces in shaping human food use and the nutritional status of individuals and populations" (Pelto et al, 2000: 1). Where nutritional science is biological and experimental in nature, the social science of nutritional anthropology is heterogenous and derived from observation (Harrison and Ritenbaugh, 1981). As a subset of medical anthropology, contemporary perspectives evolved from a post-war interest in mapping applied understandings of food scarcity and malnutrition (de Garine et al, 2009; Wilson, 2002). Until recently, scholarship emphasized biocultural perspectives on the 'cultural barriers' to adequate nutrition (Fitzgerald, 1977; Ross et al, 1987). However, critics argue that such a closed-system approach to cultural

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analysis is insufficient and fails to comprehend complex social, environmental, political, and historical influences on nutrition (Leatherman and Goodman, 2011). Critical lenses of nutritional anthropology move beyond culture to consider an array of interrelated environmental and socioeconomic factors, as well as evolutionary and adaptive processes (McGarvey 2009; Ulijaszek, 2018; Ulijaszek and Strickland, 1993). Renewed interest in the structural barriers to adequate nutrition enriches strictly scientific approaches and biocultural perspectives.

Reflecting on the tendency to medicalize malnutrition, Balarajan and Reich (2016) argue that a 'mindshift' is required to move beyond a technical problem-solving approach, towards a greater awareness of the structures which influence implementation of nutrition policies at global, national, and subnational levels. In rural Guatemala, nutrition is embedded in questions of agricultural reform, public health, hygiene and sanitation, economic inequality, education inequality, political corruption, and histories of indigenous subjugation. These complex determinants are not separate from one another, but deeply interconnected. Throughout the Global South, maternal and infant nutrition interventions typically address a range of nutrition-related issues—breastfeeding, dietary intake, supplementary foods, family and community nutrition, hygiene, and disease burden—but studies show that such interventions rarely address "underlying determinants of undernutrition, such as poverty, poor education, disease burden, and lack of women's empowerment" (Bhutta et al, 2008: 417). Even strategies which span a number of disciplines or engage diverse institutions often treat issues as loosely connected but distinct parts. Furthermore, Balarajan and Reich (2016) find that nutrition policy is often 'institutionally homeless'—meaning it does not fit clearly into the roles and responsibilities of one regulating body (2). Tensions between the vast constellation of nutrition determinants and the more immediate need for regulation creates logistical gaps in the implementation of interdisciplinary interventions. Critical nutritional anthropology provides a platform for the integrated analysis of previously siloed development issues and their impact on chronic malnutrition, one which respects the interrelatedness of cultural, socio-economic, political, and environmental systems.

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Global Dynamics of Modern Food Systems

Chronic malnutrition is a subset of chronic food insecurity (FAO, 2008), and is therefore subject to the geo-political transformation of modern food systems. Food insecurity is not simply a matter of quantity: studies show that global agricultural production exceeds consumption in grains, sugars, and fats. Fruit, vegetable, and protein production, on the other hand, cannot meet the nutritional needs of a growing global population (KC et al, 2018). Nascent food security discourse portrays food crises and chronic malnutrition as matters of supply and demand, while the "power politics of the food system" remain conspicuously absent from the policies of national and international development organizations (Patel, 2009: 665). Critical understandings of chronic food insecurity and chronic malnutrition require close examination of the relationships between food production, distribution, and consumption and actors wielding power over those relationships.

In the 1990s, galvanized by a number of Structural Adjustment Plans (SAPs), state reforms aimed at privatization and trade liberalization transformed Guatemala's political and economic landscape (Cardemil et al, 2000). Policies consistently and strategically promoted the modernization of agricultural exports (Way, 2012). Today, the economy depends in large part upon the commodification of monocrops including bananas, coffee, sugar, and palm oil, exported in mass quantities to the United States and other regional trade partners. Industrial agriculture drives the integration of global food markets, while expansion of cash crops displaces subsistence and small-scale farmers throughout the Global South (Desmarais, 2007; Hospes and Brons, 2016). Studies suggest this displacement's detrimental effect on food security and nutrition (Ickowitz, 2019; Immink and Alarcon, 1993). Monocropping in small-scale farming communities has dire consequences for families whose livelihoods, and thereby nutrition and food security, depend on the stability of a single commodity. In Chocolá, generations of coffee farmers have seen the steady devaluation of coffee grown at low altitudes. Many large corporations and small-holding farmers in the *bocacosta* have divested from coffee crops, taking up lucrative alternatives like rubber and palm oil (Fischer and Victor, 2014). Families with minimal resources and the inability or unwillingness to diversify crops are thus vulnerable to the whims of an increasingly global market.

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The marginalization of small-scale farmers at the behest of industrial agriculture perpetuates a host of development problems, including but not limited to vast land inequality. In Guatemala, over half of all arable land is held by less than 2% of proprietors (FAO, 2014). Lack of investment in small-scale farmers contributes to the precarity of Guatemala's food economy, which is exacerbated by political turmoil, irregular weather patterns (some attributed to climate change), and certainly the economic standstill induced by COVID-19 (USAID, 2020). According to USAID's Famine Early Warning Systems Network, by October of 2020, nearly all Guatemalans will reside in zones classified as 'stressed' or 'in crisis' (FEWS, 2020). Reducing nutrition to a matter of intake (foods consumed) and practices (methods by which those foods are sourced, prepared, and accompanied by a healthy lifestyle) disregards the variability of nutritional determinants beyond the individual's control. A geo-political perspective on modern food systems is necessary to reckon with the global power structures that perpetuate chronic malnutrition in rural Guatemala.

Post-Development and Transition Narratives

Post-development scholar Arturo Escobar (2015) argues that food crises are just one symptom of the unraveling of what he calls the 'one-world project'—dominance asserted by Eurocentric dualisms which underlie a vast array of modern development structures, institutions, and practices. Post-development scholarship is hardly a cohesive body of knowledge, with significant internal disagreement about the feasibility and desirability of rehabilitating traditional development constructs (Matthews, 2010). However, all strains operate on the assumed failure of a Eurocentric, modernization-driven development. According to Escobar (2008), the post-war formation of international organizations and unilateral development institutions saw the canonization of modernization theory as the singular pathway to an industrial model of development. Modernization as it pertains to food systems includes reforms which privilege industrial agricultural over subsistence practices. The desire to make 'them' like 'us' results in a top-down, one-size-fits-all paradigm that demands the painful but necessary extermination of all things traditional, including indigenous food cultures, agricultural practices, systems of knowledge, and ways of being (Escobar, 2018b).

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Born from indigenous resistance movements in South America, the emergent philosophy of *Buen Vivir*, 'good living,' similarly denounces the one-world project. Like Escobar, *Buen Vivir* rejects the premise of dualistic hierarchies, specifically that between humans and nature (Gudynas, 2011). While some scholars diametrically oppose *Buen Vivir* and modernization, this radicalization of *Buen Vivir* fundamentally contradicts its insistence upon ontological plurality (Vanhulst and Beling, 2014). Plurality, in contrast to the one-world project, empowers local stakeholders to sow multiple modernities. To this effect, Escobar's (2018b) 'pluriverse' is a politico-ontological proposition which renders visible a range of lives to be lived, built upon a foundation of diversity and harmonious coexistence. "A world in which many worlds fit," it is intentionally dynamic to accommodate interdependence and acknowledges that neither civilization nor the natural world are static.

Both *Buen Vivir* and the pluriverse are polysemic and in constant conversation with one another. But they present a more-or-less united front in their visions of a new development paradigm based on: (1) relocalization, (2) communitarian values, (3) democratic decision-making, (4) autonomy of indigenous peoples, and (5) non-Western forms of knowledge production. Though commonly critiqued for its nostalgia and romanticization of indigeneity, Gudynas (2011) insists that post-development is not a return to the past, but an adaptation of the structures which shape the future. Still, post-development is critiqued for its ambiguity in praxis, on the premise that such progressive ideals are difficult to envision in contemporary society. Indeed, since its inception, *Buen Vivir* has been co-opted by various Latin American governments to justify policies that actively contradict the basic tenets of indigenous self-determination (Merino, 2016). Despite misappropriation, Gudynas (2011) insists than *Buen Vivir* can be both strategic and practical. For example, industrial food production might be permissible under *Buen Vivir*—but regulations and trade relationships would be negotiated, not by governments and transnational corporations, but by producer communities through democratic processes with stringent environmental evaluation.

To imagine a future beyond the one-world project, Escobar (2018a) calls for the assertion of non-Western perspectives on "what constitutes a thriving society." Escobarian 'transition narratives' are context-specific, exemplary constructions of a less-destructive future, one that moves away from an ethos of individualism and towards a philosophy of radical interdependence. Humanitarian

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scholar Antonio Donini (2010) chronicles development's role, via IO and NGO channels, in the indoctrination of Western rationality, arguing that "the key vehicle in this process is the ideology of the project as the privileged, discrete, time-limited, and budget-driven instrument to shape change" (436). If ideology is the instrument of change, an ideological departure from conventional development logic is necessary to circumvent persistent hegemonic paradigms. On the surface, a home garden initiative hardly represents "a radical departure from the prevailing paradigm" (Escobar, 2018a). However, the ideological underpinnings of the Casa Granja framework allude to a philosophy of self-direction and interrelatedness which situates the project directly within prominent post-development debates.

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Setting the Scene

To provide context for the deconstruction of an integrated approach to chronic malnutrition, this chapter will expand upon the complex origins and manifestations of malnutrition in rural Guatemala. A number of state and civil sector nutrition intervention strategies illustrate the shortcomings of time-bound and siloed approaches, whereas the Granja framework—established over the course of the Nestlé Project—presents quantitative and qualitative evidence of an integrated approach's positive impact on rural family health and well-being.

Chronic Malnutrition in Rural Guatemala

The prevailing manifestation of chronic malnutrition in Guatemala's indigenous population is stunting, indicated by low height-for-age and frequently accompanied by mild to severe micronutrient deficiencies (WHO, 2020). Both stunting and micronutrient-related malnutrition are associated with cognitive impairment, delayed development, increased vulnerability to infectious disease, and diminished economic productivity later in life (Dewey and Begum, 2011). Physiologically, the prevalence of stunting and micronutrient deficiencies is partially attributable to lack of dietary diversity (FANTA, 2013). The average Guatemalan diet is saturated in maize, often in the form of tortillas, accompanied by beans and rice. Rural Maya families may cultivate and consume a variety of fruits and vegetables, but rarely stock expensive eggs, milk, and other animal protein (Rohloff and Díaz, 2013). Lack of dietary diversity is exacerbated by poor sanitation, low levels of education, and general poverty (Luna-González and Sørensen, 2018).

Largely homogenous diets with excess cereals and curtailed protein result in high rates of iron deficiency and anemia. Globally, the anemia burden is high (particularly among women and young children), but has reached epidemic levels in the Global South (Miller, 2013; Kassebaum, 2016). In Guatemala, indigenous women and children are prone to deficiencies in iron, as well as zinc, vitamin B12, vitamin C, and niacin (FANTA, 2013). Antenatal iron deficiency has been linked to premature labor, birth asphyxia, impaired neurotransmission, diminished immune response, and higher risk of infectious disease (Abu-Ouf and Jan, 2015; Tran et al, 2013). For indigenous Guatemalans, barriers to diagnosis and treatment include access to health services as much as

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quality of healthcare provided (Berry, 2008). Given the vast array of dangerous health outcomes associated with iron deficiency, anemia[7] is frequently used as an indicator of chronic malnutrition in nutrition interventions. The Nestlé Project's impact on anemia rates (AR) will be discussed in following sub-sections.

Character of Past and Present Nutrition Interventions

Scholars suggest that collective memory and cultural and political identities in Guatemala are shaped by a history of repeated invasion. For Grandia (2012), these violent episodes begin with Spanish colonization, continue with the arrival of German coffee barons and agrarian reforms in the nineteenth century, and come full circle with the installation of development organizations after the signing of the 1996 Peace Accords. The proliferation of SAPs, free trade agreements, and privatization reforms driving neoliberalism in Guatemala have brought new forms of structural violence to post-war society (Benson et al, 2008). Batz (2017) suggests a fourth invasion currently underway at the hands of development megaprojects, a sentiment echoed by Knowlton (2017) with her recent work on the myth of 'post-conflict' Guatemala and ongoing "conquest by corporation" (140). Since the 1960s and over the course of various administrations, the Guatemalan state and military have been "braided" together, as the state's self-proclaimed role as a driver of social change evolved alongside an endless stream of development initiatives (Way, 2012: 125). The historical entwinement of development and violence in Guatemala has sensitized rural indigenous communities to state-sponsored development interventions.

Leading up to and in conjunction with the UN's Decade of Action on Nutrition (2016–2025), the Guatemalan state and an array of development institutions have reinvigorated policy and program emphasis on hunger and malnutrition, with strategies ranging from conditional cash transfers (Gaia, 2010) to nationwide awareness-raising campaigns (Van Trotsenburg, 2019). State programs consistently emphasize basic hygiene, food security vis-á-vis free markets, and small-scale agricultural production driven by the modernization of agricultural technology and financing mechanisms (FAO, 2014). Some state interventions even stake claim to an integrated approach. In

[7] Anemia, measured by hemoglobin levels in red blood cells, is a frequent indicator of iron deficiency, as low iron count typically precedes abnormal hemoglobin levels (Abu-Ouf and Jan, 2015).

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2012, the ‘Zero Hunger’ Pact, or *Plan Hambre Cero,* brought together a variety of stakeholders and set ambitious goals to reduce chronic malnutrition among mothers and young children (SESAN, 2012). The campaign acknowledged relationships between nutrition, food security, climate change, natural disaster, and the development of human capital, and called for institutional collaboration to provide health services, education, food baskets, and supplements. This seemingly interdisciplinary approach alludes to the notion of integration, but conspicuously avoids conversation around the structural inequalities which perpetuate chronic malnutrition among Guatemala’s indigenous populations. A retroactive evaluation by USAID found that the government spent only one third of the campaign’s proposed budget on related programming, citing the insufficiency of government tax structures (FANTA, 2015), though the administrative body was later charged with corruption (Palma, 2016). The SDG Fund which partnered with *Plan Hambre Cero* cites the short duration of the project as one of their principle challenges, reflecting that "the cultural habits, practices and customs of the population require a prolonged process to achieve a change in behaviour" (UN, 2017: 6). While this perspective is a nod to nutrition as a long-term project, it again faults culture while conveniently ignoring structural violence as a contributor to chronic malnutrition.

Lack of funding, short duration, and frequent corruption of government interventions contributes to the proliferation of Guatemalan NGOs working in the nutrition space. NGOification in Guatemala is the subject of much critique (Rohloff et al, 2011; Beck, 2014). Despite best efforts to promote development alternatives, NGOs frequently reproduce the neoliberal character of state interventions (Moore et al, 2017; Harvey, 2003). Enlistment of public-private partnerships is one embodiment of neoliberal attitudes toward nutrition intervention, visible in the technocratic optimism of supplements (Ansari et al, 2018). Supplements—used here to refer to a range of fortified flours, ready-to-use supplementary foods (RUSFs), micronutrient powders (MNPs), and supplements in pill-form—are widely marketed and distributed by state and civil sector actors in Guatemala. Supplements are often perceived as a nutrition panacea, irrespective of constraining ‘human factors’ of product design (Davis et al, 2014). Even in cases of successful rural penetration, implementation and accessibility are often hindered by lack of kitchen hygiene, language barriers, improper usage, unfamiliarity of certain ingredients, and foreign production (Rohloff and Díaz, 2013; Interviews 7, 8, 18). MNPs known as *chispitas* have emerged as one of UNICEF's principle

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nutrition strategies in Guatemala and a popular treatment for anemia throughout Latin America (UNICEF, 2009). However, a recent study in Uganda found that baseline micronutrients were completely unaffected, and in one district worsened, by isolated MNP intervention (Ford et al, 2020). While RUSFs like Plumpy'Doz™ and Nutributter® should not be discounted in cases of extreme food scarcity or severe wasting, increasing application of supplements in the prevention of chronic malnutrition may detract from more sustainable solutions (McLellan, 2014).

The misappropriation of supplements exemplifies the industrial development complex's preference for siloed and time-bound approaches which fail to recognize the underlying determinants of chronic malnutrition. While it is theoretically possible for Guatemalan families to access necessary micro and macronutrients from locally available foods without the aid of supplements, a USAID-sponsored study suggests that it would be complex and costly, requiring at least four servings of vegetables per day and a budget beyond that of most rural indigenous families (FANTA, 2013). Siloed and time-bound approaches obscure the remarkable injustice of this reality. The narrow conceptualization of nutrition as a product of culture or the targeting of singular deficiencies operationalizes nutrition intervention as if variables existed independent of one another. By contrast, home gardens begin to address structural barriers to chronic malnutrition by reseeding small-scale agricultural practices, mitigating dependence on global food economies, and framing nutrition as a long-term, self-directed project.

The Nestlé Project: A Different Kind of Nutrition Proposition

As a nutrition intervention, home gardens are not novel nor a panacea, but offer a markedly different perspective on integration. Home gardens and small-scale agriculture were essential in sustaining the prosperous civilizations of early Mesoamerica (Gillespie et al, 1993; Nigh and Diemont, 2013). In recent years, a number of integrated home garden interventions have combined agricultural training and health education by local staff to achieve positive long-term impacts on rural family nutrition. A joint initiative of the FAO and state agencies in the Lao People's Democratic Republic noted, over the course of just 18 months, significant improvements in nutritional status, consumption of nutrient-rich foods, and increased nutritional knowledge (Bhattacharjee et al, 2006). Despite this success, funding was not provided for continuation. In

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Bangladesh, researchers observed sustained behavioral change in cooking and gardening three years after the conclusion of a home garden intervention, in addition to increased income from vegetable sales at market and more equitable gender relations within the household (Baliki et al, 2019). This suggests that "integrated [nutrition] programs, even if modest in scope, can be drivers of social change" (1217).

In Guatemala, home gardens show promise in the reduction of chronic malnutrition (USAID, 2015). The contemporary Casa Granja framework was fortified and formalized by Semillas in conjunction with the Nestlé Project, a three-year independent study conducted by the Nutrition Institute of Central America and Panama[8] (INCAP), funded by the Nestlé Foundation.[9] Details and figures in this sub-section are drawn from INCAP publications (Mazariegos et al, 2018) as well as project reports and internal documents provided by Semillas (see Appendix II, Documents 4, 5, 7). The INCAP study presents quantitative evidence of improved maternal and infant health based on a comprehensive and educational nutrition, health, and agriculture intervention. From 2014 to 2017, a non-blinded randomized controlled trial tracked the Casa Granja framework's impact on pregnant women and new mothers with infants under 10 months of age. Approximately 200 households were assisted by local staff in the construction and maintenance of home gardens and invited to participate in a series of Education Sessions. Participants were drawn from two villages: San Pablo Jocopilas (SPJ) and Santo Tomás la Unión (STU). SPJ introduced animal protein in the form of rabbits, chickens, and tilapia, while STU emphasized plant-based sources of protein. Local field staff known as *extensionistas* were recruited to provide ongoing *acompanamiento* or 'accompaniment,' consisting of weekly site visits and regular contact with participating families to assist in maintenance and troubleshooting (see the full Casa Granja Framework in Appendix III).

[8] INCAP is a parastatal organization based in Guatemala City. In operation since the 1950s, their work has made significant contribution to a growing body of knowledge on the connection between nutrition and disease (Scrimshaw, 2010; Martorell, 1992).

[9] The Switzerland-based Nestlé Foundation supports action-based, nutrition-related interventions throughout the Global South. While the world of corporate aid remains relatively opaque, the work of Metzger et al (2010) reveals the Foundation's preference for countries where the company holds significant foreign investments. Future research might explore the potentially contradictory motives behind the Foundation's nutrition agenda in Guatemala and the company's commercial interests.

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Home gardens were the core aspect of the Nestlé Project. Averaging 6–8 square meters, each garden was tailored to fit within available space and to address the family's unique nutritional needs. Fruits and vegetables including tomato, arugula, celery, spinach, onion, beet, carrots, and various types of chilis were provided by Semillas as seeds or seedlings, and strategically planted in recycled containers, raised beds, or adjacent plots of land. *Extensionistas* actively promoted the consumption of native, nutrient-dense leafy greens including *hierbamora, quilete, chaya, chipilín, flor amarilla, quixtán, moringa, bledo,* and *pie de paloma*. In SPJ, chickens, rabbits, and tilapia provided eggs and meat as sources of protein. Two years into the study, approximately 75% of participating families had maintained their garden to a satisfactory degree—meaning gardens produced sufficient harvest for families to cut back necessary food purchases. Drop-out was partially attributed to torrential rains that destroyed a number of gardens in one field site.

In conjunction with garden construction and maintenance, INCAP and local partner organizations implemented a series of Education Sessions in the form of small gatherings or one-on-one conversations in the homes of participating families (see Figure 3). Themes were decided according to the needs and interests of participants, with sessions on lactation and breastfeeding; complementary feeding practices; water, sanitation, and hygiene (WASH); and reproductive health. On average, 73% of participating families attended a total of 259 Education Sessions over the course of the three-year study. This attendance rate was considered acceptable given the partial overlap with the annual season for coffee harvesting, which diverts attention and labor for several weeks at a time. The Nestlé Project also made attempts at community organizing, establishing a network of *extensionistas* and training local women as *promotoras* or garden promoters (Document 4). Like Semillas' early efforts at community organization amongst local farmers, these small action groups were not well-attended, and the initiative later fell away (Interview 6).

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Figure 3: Project Manager Armando Astorga leading an Education Session (Document 8).

Impact on child and maternal health was assessed using: (1) anthropometrics (height-for-age), (2) 24-hour diet recall testing for dietary diversity, and (3) anemia rates (AR) in mothers and children. To minimize the intrusive nature of these measurements, INCAP nutritionists were accompanied by *extensionistas* and dressed in casual clothing or traditional *traje.* Between both communities, baseline AR averaged 43.6% for children and 8.5% for women. At the study's conclusion, AR fell to 2.5% and 3.6% respectively. Anthropometrics are an imperfect measure of overall health (Ulijaszek and Kerr, 1999), and future studies which stake claim to an integrated approach might incorporate a series of social indicators to measure impact in other areas. But a survey conducted one year after the Nestlé Project's conclusion suggests the long-term viability of this home garden model: approximately 80% of families continued at least one aspect of the curriculum and local researchers noted decreased rates of illness in mothers and children. Many families who did not maintain gardens continued to enhance the nutrition of their meals with foraged fruits, vegetables, and leafy greens.

The Nestlé Project faced event-oriented challenges in participant retention, and early drop-out required a second round of recruitment several months into the study. Project Leader and INCAP Nutritionist Manolo Mazariegos sees this as a product of miscommunication around the time,

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energy, and resources required to maintain gardens and small animals (Interview 7). Post-Nestlé Project, the Casa Granja framework requires a minimum 12-month commitment with identical coaching and structural support, though activities have been scaled back due to recent funding constraints. Still, the Nestlé Project and Casa Granja framework are distinguished by their long duration, comprehensive curriculum, and insistence upon the employment of local staff. Manolo states unequivocally that "isolated interventions don't work… in agriculture, or health, or nutrition, they don't work" (Interview 7). He cites a lack of understanding around the holistic and all-encompassing nature of nutrition itself, plus an industry-wide tendency to demand long-term impact from short-term interventions. Like Semillas leadership, he is "convinced that this is the way to see results."

The Prospect of Institutionalization

Operating on quantitative and qualitative evidence of Casa Granja's successful reduction of chronic malnutrition in Chocolá, Semillas is seeking opportunities for expansion. Past expansion efforts included the construction of nutrition gardens for a nearby community center catering to the elderly and a number of local schools, plus Casa Granja satellite projects in the nearby department of Retalhuleu and as far north as the department of Quiché. These projects have yielded largely positive results in terms of receptivity, uptake, and harvest (Interviews 8, 12). However, lack of funding combined with the imminent departure of Semillas' aging founders means the organization must encounter some form of financial stability in order to continue current programming, let alone contemplate expansion. The time and manpower required to effectively implement a home garden education tends to be more costly than supplement-based nutrition interventions (Baliki et al, 2019), and post-Nestlé, Semillas has struggled to generate the funds necessary to sustain the Casa Granja project (Interviews 1, 5, 6).

Insufficiency of Guatemalan tax structures and general cynicism around state initiatives, combined with minimal domestic philanthropy, translates to a civil sector dependent upon foreign funding (Sridhar, 2007; Pousadela and Cruz, 2016). When asked if NGOs could survive without foreign income, interviewees responded with a sardonic chuckle and a resounding 'no' (Interviews 5, 15, 17, 18). But the volatility of foreign income—subject to swift economic downturns, competition

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with concurrent crises, and general donor fatigue—presents challenges for grassroots organizations like Semillas. Even when Guatemala and its Central American neighbors are prioritized by donors and IOs, "the process to obtain such funding is complex and involves technical, administrative, and financial requirements that many do not meet" (Pousadela and Cruz, 2016: 611). Chipeta (1997) argues that IOs maintain a general distrust of Latin American NGOs, and conditionality is a product of that distrust. According to Suzanne, these conditional grants are often confining to the point of inhibiting effective implementation (Interview 6).

As a result of Guatemala's generally hostile fundraising environment, Semillas has been forced to scale back Casa Granja activities—rolling back *extensionista* salaries, pausing a number of programs, and bequeathing the community computer lab to a local partner organization (Interview 1). Disenchanted with modern fundraising models and adamant that future iterations remain faithful to the framework's core principles, Suzanne sees institutionalization as the most reliable way forward (Interviews 6, 14). The purpose of present research is to disentangle the ideological underpinnings of the Casa Granja framework in order to better understand its compatibility with future institutionalization.

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Principles and Practices of *Vivir Mejor*

As a health, nutrition, and agriculture intervention, the Casa Granja framework is integrated in the sense that it values interdisciplinarity. The framework also incorporates aspects of education; entrepreneurship; gender issues; water, sanitation, and hygiene (WASH); civil participation; and youth leadership (De Berge, 2018). This amalgamation was partially a product of necessity, as funding troubles prompted Semillas to merge previously separate programs (Interview 1). For Manolo, the definition of an integrated approach revolves around interdisciplinary collaboration between specialties and sectors united by a common goal (Interview 7). That goal would presumably be the reduction of chronic malnutrition, but given the program's scope, both participants and program leadership likely come to the table with a range of complex and potentially conflicting goals. Casa Granja does not explicitly prioritize nutritional versus agricultural objectives, nor does it discount the importance of economic and gender indicators. Suzanne and Communications Officer Thomas Hartig note the difficulty in summarizing the project's complexity in donor communications (Interviews 1, 15). Obstacles to communication likely contribute to financial precarity, as the breadth of the project's offerings may appear disorganized or lacking direction in comparison to the single-issue politics of conventional development interventions (Harvey, 2003). But the Casa Granja framework insists upon the interrelatedness of complex development problems; food and nutrition are the focus, but all variables are viewed as interdependent.

Integration Beyond Interdisciplinarity

In early stages of research, it became clear that the Casa Granja definition of integration transcends interdisciplinarity. Time and time again, Armando and local *extensionistas* used the phrase *Vivir Mejor*, 'living better,' to describe the Casa Granja raison d'être. *Vivir Mejor* is a Semillas 'field slogan' that arose in response to resistance Semillas encountered while operating in Chocolá. Suzanne attributes this resistance to skepticism around 'outsiders' and endogenous development projects:

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> "As Armando tried to explain why Seeds/Semillas wanted to work with them, the more complicated explanations didn't seem to work. Perhaps they were perceived as slick outsider words disguising some ulterior motive. Anyway, he/the team found that the simple statement, that we just wanted to help them live better [*vivir mejor*], seemed to succeed in getting past any barriers of caution" (personal correspondence, 7/8/20).

The concept of *Vivir Mejor* is highly subjective—amongst interviewees, personal definitions varied substantially. For Armando, *Vivir Mejor* implies self-reliance and the capacity to "cure ourselves at home" as much as a synergy with local environments—native foods, recycled materials, compost, and working within rather than against microclimates (Interview 9). For Senior *Extensionista* Clelia Garcia, it entails access to opportunities and a future in which there will always be food, health, and education (Interview 11). Senior *Extensionista* Julio Lopez describes 'living better' as *pasos lentos* or 'slow steps' toward self-sufficiency (Interview 13). Disparate definitions are easily perceived as disjointed, but subjectivity sets *Vivir Mejor* apart from the single-lane track of the one-world project.

Subjectivity governs the oppositional forces of expansion and contraction essential to the Casa Granja framework, visible in the organization's vacillation between long-term and short-term objectives. Suzanne attributes a number of Semillas' failed projects to a disinterest in long-term objectives when faced with the immediacy of survival, pointing out the stubborn devotion of Chocolá farmers to unprofitable and low-yield coffee crops (Interview 6). In the organization's early years, Semillas worked primarily with coffee farmers, promoting crop diversification and introducing agricultural technology to improve yields and stabilize household income. By all accounts, it was an uphill battle, as cultural connection to and economic dependence upon coffee crops created extreme risk-aversity among the village's farmers (Interviews 6, 8, 10, 11). Such resistance catalyzed a mission shift towards issues of food security and nutrition education, birthing early iterations of the Casa Granja framework. Risk-aversity is an obstacle that Semillas is constantly navigating (Interview 14), but responsiveness to the wants and needs expressed by participants conveys the amorphous nature of *Vivir Mejor*. It affords the Casa Granja framework a degree of agility, and acts as a self-directed engine of change as the framework continues to adapt and evolve over time.

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Thematic Deconstruction of *Vivir Mejor*

While codification is perhaps antithetical to *Vivir Mejor*'s amorphous nature, future implementation in new development contexts requires the translation of *Vivir Mejor* in some capacity. The effective translation of the Casa Granja framework to new development contexts requires distillation of *Vivir Mejor*'s core principles and associated practices. Through iterations of thematic coding, the following principles and practices have been identified as integral to future application of the Casa Granja framework:

1. ***Voluntad***, enacted through recruitment by self-selection
2. **Localization**, embodied by local staff known as *extensionistas*
3. **Adaptability**, embedded in the organization's learning culture
4. ***Pasos lentos***, an incremental approach to behavioral change

These principles and practices are not mutually exclusive, but must be understood as deeply interrelated. I will discuss each in detail before concluding with speculation on the future of the Casa Granja framework.

Voluntad: Recruitment by Self-Selection

The translation of *voluntad*, as used in context by interviewees over the course of this investigation, falls somewhere between initiative, willingness, self-motivation, and intention. In multiple instances, interviewees described the prevalence of complacency, apathy, and self-doubt as obstacles to development in the Chocolá community (Interviews 5, 8, 10). Armando related a story of one woman who showed interest in cultivating a fallow piece of land adjacent to her home, but did not wish to pay Semillas' nominal participation fee of 10 GTQ (Interview 8). She indicated to Armando that she preferred to receive services for free from the government. Semillas unequivocally opposes short-term 'handout strategies,' on the grounds that they create dependency and quell personal initiative (De Berge, 2018: Interviews 6, 15). Julio also recognizes a gap between desire and action: "To want is not enough. To want is to want, there are lots of people

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who want. […] But when there is *voluntad* and effort to do things, these are the people that work with us. This is our starting point" (Interview 13). Clelia, too, asserts that while Semillas orients themselves around what the community wants, "some people simply don't want it"—'it' being the operative word for both participation in the program and the vague idea of progress more broadly (Interview 11).

Voluntad is enacted in the Casa Granja practice of recruitment by self-selection. During the Nestlé Project, participating families were recruited by INCAP and paid a small incentive of 200 GTQ per month to maintain participation and thus scientific reliability. Given the study's scope, Semillas has now reached what Suzanne jokingly refers to as "critical mass," meaning the program's coverage and constituency has established a reputation for success in the community (Interview 14). Incentives are no longer viable for Semillas, and in an effort to reduce attrition and identify families with the requisite *voluntad*, Casa Granja participants are now recruited by way of self-selection, typically approaching staff after observing the success of a neighbor's garden[10] (De Berge, 2018). Their existing reputation and consistent presence in Chocolá allow Semillas to be responsive when a group or organization expresses interest in constructing a new garden. Semillas tries to fulfill every request, though this is often dependent on funding and workforce capacity. Nascent gardens are primed for first harvest after 60–90 days, and Suzanne observes that within 6–9 months, neighbors begin to show interest, completing the recruitment cycle (Interview 1) (see Casa Granja Framework in Appendix III).

Suzanne argues that self-selection is the only true prerequisite for participation in the Casa Granja project, and ultimately attracts proactive families willing and able to make the necessary commitments of time and effort:

[10] While women often initiate the process, both husband and wife must enter into contractual agreement with the organization. Semillas is not explicitly 'mother centric' but by default coordinates with maternal authority in household food decisions. When staff observe skepticism among husbands, support is often secured through 'male-oriented' tasks like building animal enclosures and tending to tilapia ponds (De Berge, 2018).

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> "You have to demonstrate to people—in a positive way, in an actionable way, in a very personal way—that they can do something better for themselves with their own resources. They don't have to have a lot of money. They don't have to have huge acreage. They don't have to have anything except the interest in doing it, and the willingness [*voluntad*] to spend some effort" (Interview 14).

While Semillas leadership universally expresses a desire to extend the Casa Granja framework into new communities, they acknowledge *voluntad* as a necessary ingredient for successful application. Without it, home gardens go unattended and become unproductive. Reactive recruitment also facilitates the more direct allocation of resources to those families who demonstrate a willingness to learn and commitment to the process. Recruitment by self-selection speaks to the agency implicit in *Vivir Mejor*; willingness to act is a prerequisite for change.

Voluntad as a prerequisite becomes problematic when expanded as a principle at applied at scale. The practice of self-selection inevitably excludes the poorest of the poor, those who cannot afford to relinquish precious time and resources. A home garden requires space and stable residence, meaning those who rent, or who must negotiate with pernicious landlords, or whose plots of land are simply unsuited to cultivation are also excluded. Though *voluntad* seemingly implies informed participation, asymmetry in chains of reciprocity is a major critique of participatory approaches to development (Mauss, 2000). This dynamic has been observed in other Guatemalan settings, wherein participants must prove that they deserve to receive a particular service and are then burdened with the performance of gratitude in order to offset services provided (Moore et al, 2017). While Semillas takes significant measures to understand and inform both families and communities prior to engaging, it's easy to see how assessing something as slippery as *voluntad* might be problematic at scale. An individual's or a community's *voluntad* judged solely by subtle personal interactions may not account for complexity of environmental factors or change in sentiments over time. *Voluntad* might be afforded by personal circumstance and/or relationships of trust within the community. As a principle, it is slippery and self-selection an exercise in humility. Semillas provides basic starter items—seedlings, animals, and construction materials—to any family who shows a genuine interest in building and cultivating a home garden, with the open acknowledgement that a number of families will withdraw from the program or fail to

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maintain their garden, and that investment will be lost. Yet one can imagine that with more rigorous reporting and procedural standardization required to institutionalize the Casa Granja framework, assessing *voluntad* might require codification—a daunting task, as it is neither static nor objective. In place of self-selection, the forceful imposition of the Casa Granja framework is contrary to the principle of *voluntad*, and could potentially corrupt the ideology of *Vivir Mejor*.

Localization: *Extensionistas*

Relocalization is a constant in post-development discourse, framed as a counterbalance to the erasure of diversity enacted by the one-world project (Escobar, 2008). The locality of Casa Granja field staff known as *extensionistas* is nonnegotiable for Semillas leadership. Armando insists that "the [local] people have the knowledge," and Julio agrees that *extensionistas* are uniquely positioned to leverage existing knowledge alongside technical training to "remind" local families of what they already know (Interviews 8, 10). During the Nestlé Project, workshops on terminology, protocols, and documentation were designed to complement existing knowledge of traditional foods, local weather patterns, and agricultural customs (Document 4). Intimate knowledge of political dynamics and existing social networks prepares *extensionistas* to navigate interpersonal obstacles in a region with a history of invasion, displacement, and political violence. Armando says that the multi-directional transfer of knowledge *"local-a-local"* is better received in Chocolá, where being an 'insider' is critical to effective implementation (Interview 8). Speaking of his field team, Armando jokes, "the only outsider is me!" His long-term residence is outside Guatemala City, but he spends the majority of his time in Chocolá. To truly know a community, he believes one must "live there, eat there, and defecate there" (Interview 8). *Extensionistas* are intimately acquainted with the rhythms of local life, food culture, and household customs. Their familiarity facilitates the development of close relationships through weekly site visits, designed to provide personalized feedback, education, and assistance. Suzanne laughs when asked about the process of graduating families from the program: families often object to the prospect of losing

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weekly visits, suggesting that relationships endure even when a family no longer requires garden assistance (Interview 2).

Relationships between participants and staff bolsters the organization's reputation in the community and establishes alternative channels for knowledge production. Julio describes the pleasure of reviving traditional foods that have fallen out of public favor: "I knew *flor amarilla* from my grandmother. And when I say I knew it from my grandmother, I was maybe six years old. Imagine that! Now I'm almost 59. That is to say, it was a long time ago. Sadly, many young people today, we ask them if they know *flor amarilla* and one of the saddest responses is, 'I never eat greens'" (Interview 13). Promoting the consumption of nutrient-dense greens is not only a matter of nutritional intervention, but a continuation of food traditions. Recognizing that loss of traditional foods can result in loss of language and ultimately culture, post-development debates argue the importance of validating memory and inheritance as forms of knowledge production (Escobar, 2018b). According to Julio, *Vivir Mejor* is just a process of reconstructing the relationship between people and food. "They already know," he says (Interview 10). An *extensionista* is simply tapping into knowledge which lies dormant. *Hierbamora*, for example, grows wild in abundance, though many don't recognize it as being edible and don't think of preparing it in a meal or cultivating it in a garden, despite it being a hardy crop and rich in protein (Interview 13). Post-development theory would argue that conventional hierarchies of power and knowledge are subverted when subtle, experiential, inherited, and embodied ways of knowing thrive alongside scientific traditions of observation and experimentation.

While validating inheritance and memory as forms of knowledge production, empowerment of *extensionistas* tips the scales of agricultural authority. The Casa Granja model promotes personal development and local innovation, with regular staff meetings providing a forum for *extensionistas* to share ideas, test new techniques, and troubleshoot obstacles. One such innovation was the green tortilla (see Figure 4), a dietary staple enriched with locally-available, nutrient-dense greens (Interview 5). Early attempts were met with skepticism due to the overpowering flavor of *moringa*, so Semillas tested a number of recipes and found that *pie de paloma* was more readily accepted. The Casa Granja framework's emphasis on resourcefulness and hidden resources—planting leafy greens in an old tire or beets in a discarded plastic container, for example—fosters agency and

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experimentation among *extensionistas*. This attitude gave rise to a series of innovative animal enclosures, repurposed animal waste, and an emphasis on compost. *Extensionistas* instruct families in the proper disposal and regenerative potential of garden waste, minimizing environmental impact and eliminating the need for expensive fertilizers (Interviews 6, 8). Post-Nestlé, compost practices are continued by 69% of participants surveyed (Document 2). New ideas are not always implemented successfully; inventive uses of medicinal plants have yielded mixed results. In place of traditional supplements, Julio encourages his families to consume one cup per day of an herbal tonic made from *chichicaste,* similar to nettles and a widely available and effective source of iron and chlorophyll (Interview 10). Still, Armando observes a preference for supplements in pill form which he attributes to the authority of doctors and the pharmaceutical industry, plus a socially conditioned distrust of natural remedies (Interview 9). Even when it yields mixed results, experimentation validates local knowledge production and demonstrates the organization's investment in the continuing education of *extensionistas*.

Figure 2: Green tortillas on a traditional *comal* (Document 8).

Local innovation refines the site-specific application of the Casa Granja framework and strengthens Chocolá's rural economy. Mass-migration throughout Central America is demonstrably linked to mass-unemployment and general socio-economic precarity (Sanchez et al, 2016). Opportunities are often limited to seasonal labor on mega-plantations or migration to urban

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centers and/or the U.S. (Interviews 1, 9, 11, 17). The employment of local *extensionistas* creates local jobs, providing rare job security and a comfortable salary, and Semillas routinely contracts additional auxiliary labor for tasks like soil preparation where household members may not be able to accomplish tasks themselves due to physical ability, pregnancy, etc. (Document 4). Training and employment of *extensionistas* is, by far, the principle financial investment in the Casa Granja project (see Projected Annual Expenses in Appendix IV). For Semillas leadership, *extensionista* salaries are nonnegotiable (Interviews 5, 15). In 2019, as donations fell and the organization faced potential termination, *extensionistas* voted to take pay cuts to ensure that fellow team members would continue to receive a reduced salary (Interview 14). The Casa Granja framework's considerable investment in local livelihoods exemplifies *Vivir Mejor*'s commitment to localization.

The word *extensionista* is widely used in Guatemala to describe local staff and program officers, and its English cognate alludes to the practice of farmer education known as agricultural extension. But its use in relationship to the Casa Granja project lends a novel depth to the role. Armando describes *extensionistas* as "*orientadores de la comunidad*," guides, mentors, or coaches in their communities (personal correspondence, 27/7/20). In context, *extensionista* implies a gentleness and a sense of co-navigation that characterizes the relationship between staff and participant. As mentors*, extensionistas* encourage participants to learn from mistakes. The goal is building self-confidence and resilience, so that a family feels prepared to adapt their home garden to meet their unique household needs, produce nutritious food year-round, and accommodate a range of seasons and climactic conditions. Investment in local staff is also an investment in the local community. Relocalization of expertise opens channels for alternative ways of knowing and being, addressing imbalances in distribution of power and resources and allowing marginalized groups to assert novel visions of the future.

Adaptability: Learning Culture

In the case of Casa Granja, "one size does not fit all"; site-specificity is absolutely integral to this integrated approach (De Berge, 2018: 3). Effective home garden implementation and participant retention requires ongoing adaptation at individual, household, community, and organizational

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levels. Semillas maintains a commitment to learning and innovation among participants as much as staff and leadership. This begins with the two-pronged diagnostic (see Appendix III). Upon arriving in a new community, *extensionistas* work with families and stakeholders to evaluate the environment in terms of cultivable land, local climate, and village customs. On a household level, *extensionistas* gauge participant interest as well as time and resources available. With a plan in place and "learning as the fundamental driver," (De Berge, 2018: 7), the organization is agile enough to continually course correct based on feedback from participants, *extensionistas*, and community stakeholders. In Semillas' early days, an organizational course correction involved shifting away from formal workshops and classroom learning, towards a 'learn by doing' approach. The significant obstacles to schooling in Chocolá[11] translate to low levels of formal education among the adult population (De Berge, 2018; Document 1). Semillas founders observed consistent disengagement with technical jargon and formal classroom settings (Interview 5), and accordingly adjusted the Casa Granja framework to emphasize applied learning opportunities in situ.

While Armando's training as an agronomy engineer informs many technical adaptations, many are a product of trial and error on the part of *extensionistas* and participating families. Broccoli and cauliflower, for example, became popular crops after several seasons of experimentation (Interview 8; Document 10). Staff, and by extension families, learned through trial and error that florets could be trimmed back to produce a more bountiful harvest, and scraps could be fed to rabbits, simultaneously reducing waste and minimizing the need for livestock inputs. Similarly, after the devastation of multiple celery crops, Semillas found that plants were particularly vulnerable to damage during the rainy season, but many families were willing to temporarily repot plants indoors (Interview 2). Where limited indoor space could not accommodate the celery plants, families were instructed and assisted in building small outdoor awnings (Document 4). *Vivir Mejor* embraces trial and error as a mainstay of the learning culture, but the risk associated is not necessarily compatible with the industrial development complex's notion of a good development 'investment.' The increasing tendency to conceptualize development funding as social investment,

[11] The nearest secondary school is a 45-minute bus ride away in the municipality of Mazatenango, and school fees remain prohibitively high for many (Interview 1). During the civil war, schools across Guatemala were inoperative for a number of years, leaving an entire generation with minimal education (Justino, 2010; Interview 17).

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visible in the rise of social entrepreneurship, adopts principles of rationality and efficiency that do not value risk and experimentation (Hailey and Salway, 2016). Looking towards future partnerships or institutionalization, the dynamism and agility of Semillas' learning culture could potentially be compromised by conditionality and/or risk-aversity of funding entities.

Armando asserts that rural villages of Guatemala are astoundingly similar in the challenges they face, namely high levels of poverty and malnutrition, lack of government services, and geographical isolation (Interview 8). He argues that these similarities, plus *Vivir Mejor*'s locality and commitment to learning, make the Casa Granja framework adaptable to any number of development contexts. In 2019, invited by the organization Amachajul, Semillas conducted a series of workshops approximately 200 kilometers north in the village of Chajul, Quiché. Founders of both organizations acknowledged the rarity of this collaboration, as Guatemala's NGO sphere is often competitive and funding for collaborative projects is not readily available (Interviews 2, 12). Workshops were co-facilitated by Semillas *extensionistas* and Amachajul's local leadership. The condensed and adapted Casa Granja framework emphasized the production of microgreens and mushrooms, given their short gestation period and compatibility with local diets (see Figure 5). Mushrooms were a particularly fortuitous crop; hanging beneath a protective awning, they were able to withstand rains and flooding that later washed away many of the microgreen gardens. Beginning with just 16 bags of mushroom spores, Amachajul is now launching a small enterprise, with 100 bags expected to produce a total of eight harvests in six months (Interview 12). The enterprise will donate a portion of harvests to Chajul's poorest residents and sell the remaining mushrooms at local markets. Despite the success of mushrooms, overall adaptation of the Casa Granja framework yielded mixed results, as a variety of garden components did not take root in Chajul.

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Figure 3: Bag of mushroom spores (courtesy of Janet Bourque).

While adaptation of the Casa Granja framework was successful in some respects, distinctions between the villages of Chajul and Chocolá complicated the integration of certain home garden techniques. Indeed, both villages are rural with minimal government services and predominantly indigenous populations, plus high levels of extreme poverty, chronic malnutrition, and illiteracy (Caumartin, 2005; Delgado, 2010). Both populations are engaged primarily in agricultural labor and demonstrate considerable resistance to outside intervention (Interview 12). Despite these similarities, the villages diverge in their unique cultural, historical, and environmental conditions (see Distinctions Between Chajul and Chocolá in Appendix V). Chajul and Chocolá are uniquely influenced by a variety of cultures, histories, religions, agricultural practices, and microclimates. While Semillas leadership asserts the universal viability of the Casa Granja framework (Interviews 1, 8), mixed results from past extension efforts raise questions around the definition of successful integration in new field sites. The depth of site-specificity required suggests that integration of the Casa Granja framework is a time- and labor-intensive process, one which requires the perseverance of all parties involved. Semillas' learning culture permits responsiveness to the changing needs and desires of Chocolá residents, but *Vivir Mejor*'s adaptability hinges upon the sustained engagement of each family, each community.

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Pasos Lentos: Behavioral Change

Semillas internally refers to Casa Granja as a nutrition 'intervention,' but research leads me to question this as appropriate terminology. The word intervention implies a drastic change, instigated through the interposition of external actors (Merriam-Webster, 2020b). The Casa Granja framework relies primarily upon existing resources, accessible foods, and the expertise of local *extensionistas*. In this sense, it is neither drastic nor external. The time-scale of *Vivir Mejor* is unique, distinct even from post-development discourse. Whereas the verbiage of *Buen Vivir* ('good living') suggests a static, future state of being, the Semillas phrase *Vivir Mejor* ('living better') suggests more tolerant, malleable definition of development. *Vivir Mejor* validates incremental improvements in quality of life that perhaps a singular 'good living' does not. It permits, or rather encourages, the subjective definition of forward progress with the understanding that good nutrition is foundational, and that incremental improvements will have a ripple effect on the health and well-being of future generations.

Janet of Amachajul echoes Semillas leadership in reminding me that development is an exceedingly slow process (Interview 12). Amongst interviewees, there is general consensus that the pace and duration implicit in *Vivir Mejor* distinguish Casa Granja from other nutrition interventions (Interviews 7, 9, 10, 13, 15). Manolo, describing his work with projects prior to and since the Nestlé Project, reflects on what he observes to be a lack of long-term approaches: "We never returned to see if the families were applying what they were taught. This is the main weakness in this type of intervention. We cannot go farther, mostly because of the time and effort required, but also the resources which are usually very limited" (Interview 7). He acknowledges that few IOs demonstrate interest in sustained financial support, citing a lack of understanding around the holistic nature of nutrition and its impact on broader development outcomes. Since Semillas' genesis in 2006, the organization's leadership and *extensionistas* have been slowly building relationships of trust, despite social and political barriers. Sharing his own experience as an early participant, Julio reinforces the necessity of trust, time, and patience throughout phases of planning, construction, maintenance, and harvest: "We had to get rid of some stuff, we had to uproot some trees. It seemed insane what we were doing, but we did it. We just needed some courage, a little effort, a little sacrifice. At the end we started to make the beds, to sow everything.

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But when we began to harvest, we said wow, this is great" (Interview 13). In other words, building trust and seeing results takes perseverance because the notion of 'living better' is not a final product but an ongoing process.

What Suzanne calls "the long view" (Interview 1), Julio's "*pasos lentos*" (Interview 13), and Armando's insistence that "it is not a race" (Interview 9) all convey the patience and perseverance Semillas believes necessary to affect behavioral change. Behavioral change as it pertains to nutrition does not necessarily require the maintenance of an expansive home garden, but rather the effective absorption of health education. As a nutrition objective, behavioral change is a contrast to the short-term, aid-oriented relief of supplements. Communications Officer Thomas Hartig suggests that Casa Granja is more comparable to education initiatives than nutrition interventions, in that benchmarks are constantly evolving and success is long-term (Interview 15). Behavioral change is featured as an objective of other community-based nutrition interventions, one example being Madagascar's SEECALINE—a large-scale, 'preventative' program targeting over half the country's districts at the turn of the millennium. Like Casa Granja, SEECALINE employed local health workers to conduct education programs with mothers and young children, incorporating aspects of nutrition, hygiene, and cooking demonstrations (Galasso and Umapathi, 2007). SEECALINE demonstrated significant reduction in chronic malnutrition over the course of almost a decade (Suraiya et al, 2003). Though notably, it did not include an agricultural component, and critics argued that impact was limited by "access to complementary resources" and the "ability to act on [those resources]" (16). This suggests that while education is the foundation of behavioral change, home gardens enrich nutrition outcomes.

Strategies of behavioral change might be critiqued for putting the onus of change on the most marginalized rather than those in power. For Anne Kraemer Díaz, Executive Director of the rural healthcare services and education organization Maya Health Alliance (Wuqu' Kawok), behavioral change looks more like solidarity: "It can be very top-down. But you can also do it by saying, 'we're with you' and I think that's a different way of doing behavior change. It's saying, we understand, we're with you, we want to help you, we want to work with you. It's setting goals together based on what they think they can do" (Interview 18). Escobar (1992) echoes this commitment to self-determination: "[Post-development] is not a teleological project (moving

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people towards a pre-determined direction) but one which recognizes people's agency and learns how to foster and co-move with them" (28). But given the position of authority occupied by NGOs in rural Guatemala, it's difficult to imagine a truly equitable form of solidarity between constituents and nonprofit professionals. Such an incalculable timeline hardly fits within the industrial development complex's demand for quantifiable results in a fixed period based on limited resources. While the process-oriented principle of *pasos lentos* seeks a more sustainable and self-directed version of rural development, *Vivir Mejor*'s pace and duration may struggle to adhere to the demands of modern development structures.

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Future of the Casa Granja Framework

Voluntad, localization, adaptability, and *pasos lentos* are identified here as the core principles of *Vivir Mejor* and a foundation for the Casa Granja framework. Taken as a whole, *Vivir Mejor* gestures towards a more self-directed development, one that is in line with notions of plurality and interrelatedness but struggles to accommodate other post-development ideals. Still, these principles and practices represent a shift away from siloed, time-bound approaches characteristic of past nutrition interventions. Speculating on the replication and potential institutionalization of the Casa Granja framework, it is unclear how future efforts will maintain the integrity of *Vivir Mejor* as a post-development transition narrative.

A Transition Narrative

While *Vivir Mejor's* subjectivity resonates with calls for plurality, the communitarian values promoted in post-development discourse present challenges in Chocolá. The unifying cosmovision which drives *Buen Vivir*'s influence in South America champions communalism, territorial rights, and the reinforcement of indigenous cultures and traditions (Gudynas, 2011; Merino, 2016). But indigenous sovereignty and collective land ownership are not tenets of the Casa Granja framework, and universalizing statements about the individualism of the Global North and indigenous communal integrity of the Global South (Escobar, 2018a) are oversimplified. Reinvigoration of indigenous communal values is a complex proposition in Guatemala, where distinct Maya groups have existed independently for centuries. It also fails to account for places like Chocolá where ties between people, and between people and the land, have been weakened by repeated displacement and cultural interruption (Interviews 8, 12, 14, 18; Kraemer, 2008).

The 'barriers of caution' which gave rise to *Vivir Mejor* are rooted in Guatemala's history of political violence and endogenous intervention. These dynamics are exacerbated by the prevalence of *chisme,* gossip or rumors. *Chisme* is seen as a divisive force in Chocolá, one which creates a general atmosphere of suspicion between indigenous groups and between neighboring households (Interviews 14, 18). Suspicion's adverse effects on intra-community collaboration worsened during the civil war and modern feuds continue along religious divides. As a result, efforts to

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facilitate collaboration between local factions are often met with hesitation, disinterest, or outright refusal. Armando tells a story about the village of San Antonio, where *extensionistas* proposed construction of a small lake to occupy a fallow piece of land, situated on the border of 2–3 *parcelas* (Interview 9). The lake would be stocked with fish and retain water during the dry season to sustain the farmer's particularly thirsty crops, such as ginger, yucca, and pineapple. *Parcela* owners dismissed the idea and refused to work together in any capacity. While Suzanne foresees "neighborliness, sharing, and increased interest in community or civic action" as long-term outcomes of the Casa Granja project, a unifying morality has yet to bridge Chocolá's vast historical, social, and cultural divides (personal correspondence, 7/8/20).

Vivir Mejor retains a distinct emphasis on subjective improvement in quality of life, and that subjectivity could be critiqued as individualism. As Suzanne describes, divisive politics require a measure of neutrality, and 'living better' conveys a slower, softer approach to development that may be palatable to those who express reservations:

> "Our whole thing about the mutual respect, the mutual learning… No politics, no religion. Armando's common way of expressing it to new people is, we are just interested in helping people live better. Period. You know, we don't care who you vote for, or if you vote, or what church you go, or if you go to church, or anything. We just want to help you live better" (Interview 14).

Suzanne believes that political neutrality is actually a stepping stone towards communalism in a divided community, though civic ideals have become a more abstract goal in recent years (Interviews 1, 14). To this effect, Julio shares a recent story of a neighbor, struggling to feed his family due to the pandemic: "We were harvesting greens in the garden. A neighbor saw us and asked us to sell them. But we didn't sell them. We gave them to him. We had enough, and we shared with them and with more people" (Interview 13). The concept of a unifying indigenous value system is reductive and incompatible with Chocolá's history of displacement and cultural disruption, but the Casa Granja framework at least gestures towards civic participation and intra-community collaboration in a way that hopes to heal past divides.

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In 2012, as a gesture towards communal values, Semillas staff and participating families constructed a community garden in the center of Chocolá. The Mandala Garden (see Figure 6) occupied a plot within the ECA compound, providing space for the cultivation of medicinal herbs and native species, plots for families with limited home gardens, and a site for cooking and gardening demonstrations (Document 3). The project showed promise, however, as a result of political disputes and miscommunications between Semillas and the ECA, Semillas was ejected from the site and the garden forcibly abandoned (personal correspondence, 12/8/20). Having cut ties with the ECA after this episode, Semillas now conducts demonstrations in model gardens kept by successful participating families, but eluding political entanglements is an ongoing challenge.

Figure 6: Mandala Garden (Document 3).

Communal values do not map directly onto the Casa Granja framework, but *Vivir Mejor* is consistent with post-development principles of localization and alternative knowledge production. It also makes more oblique reference to democratic values and even indigenous sovereignty with its interest in self-direction and community organizing. Perhaps the most salient element of post-development theory embedded in *Vivir Mejor* is insistence upon interrelatedness. To return to the definition of integration as desegregation, *Vivir Mejor* conveys an understanding that nutrition *is*

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health which *is* education which *is* financial stability which *is* agricultural productivity which *is* environmental responsibility. As Clelia says, they are inseparable:

> "You have to have everything. If I want to have good nutrition, I need to have a garden to be able to feed myself. […] Education is especially important compared to the other aspects. It's going to help you better understand the tools that we will give you. For example, if I am sick, I can't be healthy, I can't take care of my things, I can't have my life because I can't do my activities. […] If I don't have money, I don't have work for myself or income, I can't buy. There's food that I can't produce. We have to have a little of everything to live better [*para vivir mejor*]" (Interview 16).

Interrelatedness is rarely stated as a dimension of food systems, save in conversations of global economic integration (Hospes and Brons, 2016). A philosophy of interrelatedness as it pertains to nutrition recognizes not only relationships between actors (producers, distributors, consumers, regulators, etc.), but between systems and within natural environments. Efforts to balance inputs and outputs evokes a stewardship consistent with post-development's dissolution of the binary between humans and nature (Balch, 2013). These parallels with various aspects of post-development discourse suggest Casa Granja's approach to integrated community development as a quasi-Escobarian transition narrative, albeit one tempered by reality.

Opportunities for Continuation

Speculating on the possibility of expansion, by institutionalization or otherwise, effective translation of *Vivir Mejor* as a post-development ideology depends upon adherence to these principles, though not necessarily their associated practices. While the Nestlé Project provides a loose template, Semillas and INCAP leadership agree that this was a product of close working relationships and attitudes of mutuality between Project Leader Manolo Mazariegos and the Chocolá team (Interviews 2, 3). Suzanne feels that acquisition by a larger organization is the only way to sustain the Casa Granja project, but that the organization has yet to encounter the 'right' kind of partners and/or financiers (Interview 1). She expresses openness to a variety of institutions, suggesting the FAO, UNICEF, a foreign embassy, or a university partnership. But nutrition

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interventions on the part of IOs typically adhere to a fundamentally different development ideology, one reminiscent of the one-world project and not likely to be permeated by the principles of *Vivir Mejor*. According to Suzanne, the principal distinction between Semillas and other NGOs is an appreciation for "the flexibility over the form" (Interview 14). Manolo and INCAP were able to accommodate this flexibility to an extent (Interview 7). But expansion will likely require a degree of form and professionalization. In an ideal world, leadership envisions a community-led, Chocolá-based agronomy school where teams of *extensionistas* from across the country would be trained to implement the Casa Granja framework in their own communities (Interviews 14, 15). The vision was inspired by U.S. Agricultural Extension Services, though this is perhaps a dubious model to follow given its market-oriented programs seeking higher yields and greater returns at the price of environmental sustainability (Bahn and McAleer, 2007). The accessibility and practical application of the U.S. template are a natural fit with Casa Granja's learning culture, though an academic institution could canonize local knowledge in a way that negates its alternativity. While it would afford greater autonomy, this endeavor still requires degrees of professionalization and standardization that potentially contradict the principles of *Vivir Mejor*.

As a post-development transition narrative, *Vivir Mejor* is a decidedly bottom-up approach. The Casa Granja framework is self-directed in that it is powered by and constantly adapting to the wants and needs of the Chocolá community. That degree of responsiveness and agility is not common to larger institutions (Donini, 2010). DiMaggio and Powell (1983) speak to normative processes of institutional isomorphism, by which organizations are homogenized and professionalized through standardization of training, ethos, and discipline mechanisms. As organizations grow, normative practices become entrenched and structures become resistant to change, inhibiting an organization's ability to identify and adapt to shifting wants and needs. Though the Casa Granja framework has been uniquely successful in addressing the wants and needs of the Chocolá community, it's difficult to imagine if and how modern institutions as they currently exist might accommodate the subjectivity of *Vivir Mejor*—standardization and indoctrination would be antithetical to its very principles. The institutionalization, and more specifically the professionalization, of Guatemala's civil society has also changed the character of many NGOs and community-led initiatives, undermining equity-based relationships between development professionals and local communities (Moore et al, 2017). Distance between the

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organization and constituency quickly compromises *voluntad* and the autonomy of *extensionistas*, as the imposition of new leadership would potentially dissolve hard-won relationships of trust. Given the exquisitely delicate balance of *Vivir Mejor* as a site-specific ideological framework, it is likely that the Casa Granja project would be corrupted by top-down approaches.

Conscientious application of the Casa Granja framework requires adherence to *Vivir Mejor*'s core concepts, plus accommodation for the messiness of real-world application. An NGO alliance, like Madagascar's SEECALINE program, may present a more decentralized approach to institutionalization. SEECALINE's expansion was facilitated by the "contractual engagement" of regional NGOs, selected in a "bidding workshop" and tasked with programming and data collection across a number of designated sites (Galasso and Umapathi, 2007: 6). NGOs are stereotypically more agile than IOs and therefore better equipped to ensure the site-specificity of nutrition education. The alliance effectively highlighted strengths and interests of specific communities, however, a coordinating actor—in SEECALINE's case, the World Bank—was required to conduct a variety of administrative tasks, notably the generation and distribution of funds. SEECALINE was criticized for its dependence on external funding and discontinued after a decade of what FAO reviewers deemed 'excellent' work (Suraiya et al, 2003). Inevitably, the demand for top-down accountability in the form of conditional funding often reproduces the same hierarchies that community-led organizations claim to resist (Banks et al, 2015). Even as a transition narrative which attempts to break free from hegemonic development paradigms, the Casa Granja project is thus constrained by the funding structures created to service those paradigms.

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Conclusion

This case study demonstrates the nuances of defining an integrated approach to chronic malnutrition in Guatemala. Siloed and time-bound nutrition interventions present a contrast to the Casa Granja framework: an integrated approach which considers the myriad determinants of nutritional status and the interrelatedness of cultural, socio-economic, political, and environmental systems. The Casa Granja framework further asserts the ideology of *Vivir Mejor* as a stepping stone towards a more self-directed version of modernity. The principles of *voluntad*, localization, adaptability, and *pasos lentos*, and their consistency with a number of post-development ideals, situates the Casa Granja project at a crossroads in development discourse. Insistence upon plurality, interrelatedness, and self-direction go beyond the teleological confines of modernization and the one-world project, but deleterious funding mechanisms may constrain the impact and hinder the continuation of community-based nutrition interventions. If ideology is capable of infiltrating and transforming modern development constructs, the transference of *Vivir Mejor* is essential to maintaining the Casa Granja framework as a transition narrative through processes of replication or expansion.

The successful reduction of maternal and infant chronic malnutrition in Chocolá makes a compelling case for the continuation and potential expansion. Semillas is not the first to stake claim to an integrated approach, but readers might consider this document a prototypical case study, in that "it is not merely the average or typical instance of a phenomenon but is one that, in the eyes of the researcher, furnishes a model of how particular phenomenon might develop in the future" (Morland et al, 1992: 2). The Casa Granja project diverges from a history of isolated nutrition interventions in its ideological foundations and practical application. I suggest that because *Vivir Mejor* is not formulaic and requires extreme site-specificity, it does not lend itself to institutionalization—but the modes of project continuation explored here are purely speculative and by no means exhaustive. To supplement the liminal nature of this case study, future research might undertake a systematic review of comparable home garden initiatives in order to explore novel definitions of integration, identify additional opportunities for continuation, and better ascertain the transferability of *Vivir Mejor*. Present research is also limited spatially and temporally, and should not be misconstrued as a universal solution to chronic malnutrition. While

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the site-specificity of the Casa Granja framework is essential for its success, it may also present obstacles to expansion, in that such a tailored application requires time, resources, and patience not typical to nutrition interventions. Despite its limitations, this case study may act as inspiration or even a cautionary tale to those seeking ways to build and sustain integrated approaches to nutrition and rural development, in Guatemala and Latin America more broadly.

At this stage, the future of the Casa Granja framework is purely conjecture. Suzanne admits that with current budgets and the increased difficulty of fundraising during a pandemic, Semillas may only be equipped to sustain the project for another year: "I think that it's obvious that as an organization, unless something bizarre happens, unless the Tooth Fairy comes between now and then, I think the organization will disappear. [...] It's very likely that we will simply end up doing what Earl [husband] keeps saying we should do, which is declare victory, and say thanks, and it's done" (Interview 14). While COVID-19 exposes the fragility of modern food systems and Guatemala's weak social safety net, the Casa Granja case study conveys the complicated work of sustaining development efforts, particularly those that go against the grain of conventional development ideology. But like Suzanne, Clelia believes that impending termination would not destroy Casa Granja's legacy in Chocolá: "Speaking for myself, my work with Semillas, it has left a mark on me. […] There are families who have adopted it, who have learned, who have changed their way of living. And without Semillas, they will be able to keep going. Not all of them, but yes, some of them" (Interview 16). Perhaps this is truly the definition of integration—not integration of concepts, but integration with the community itself. Absorption to the point of redundancy reinforces that *Vivir Mejor* or 'living better' depends upon the people, not the program.

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Appendices

Appendix I – Interviews

	Interviewee	Date	Title	Organization
1	Suzanne De Berge[12]	25/03/2020	President	Semillas para el Futuro
2	Suzanne De Berge	16/04/2020	President	Semillas para el Futuro
3	Manolo Mazariegos	22/04/2020	Medical Nutritionist, Maternal and Child Health Specialist	Instituto de Nutrición de Centro America y Panamá (INCAP)
4	Anne Kraemer Díaz, MA	13/05/2020	Executive Director	Maya Health Alliance (Wuqu' Kawok)
5	Suzanne De Berge	28/05/2020	President	Semillas para el Futuro
6	Suzanne De Berge	11/06/2020	President	Semillas para el Futuro
7	Manolo Mazariegos	19/06/2020	Medical Nutritionist, Maternal and Child Health Specialist	Instituto de Nutrición de Centro America y Panamá (INCAP)
8	César Armando Astorga García	22/06/2020	Project Manager	Semillas para el Futuro
9	César Armando Astorga García	24/06/2020	Project Manager	Semillas para el Futuro
10	Julio Cesar Lopez Yax	25/06/2020	Senior Extensionist	Semillas para el Futuro
11	Clelia Socorro Ixquiatap Garcia	29/06/2020	Senior Extensionist, Project Coordination	Semillas para el Futuro
12	Janet Bourque, MEd	30/06/2020	Owner, Vice President	Bright Star Philanthropy Partners (affiliate Amachajul)
13	Julio Cesar Lopez Yax	06/07/2020	Senior Extensionist	Semillas para el Futuro
14	Suzanne De Berge	06/07/2020	President	Semillas para el Futuro
15	Thomas Hartig	07/07/2020	Communications Officer	Semillas para el Futuro
16	Clelia Socorro Ixquiatap Garcia	08/07/2020	Senior Extensionist, Project Coordination	Semillas para el Futuro
17	Eli Pérez	15/07/2020	Scholar and nutrition specialist	
18	Anne Kraemer Díaz, MA	22/07/2020	Executive Director	Maya Health Alliance (Wuqu' Kawok)

[12] Interviews 1–5 were conducted as informal conversations and not recorded, intended to collect preliminary information. Findings reported in this document may include basic information and background provided during these early conversations, but all quotations are drawn from formal interviews on or after 11 June 2020.

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Appendix II – Secondary Documents

	Author(s)	Title	Organization	Date
1	Anne Kraemer, Derek Steele, Earl De Berge, Alfredo Toriello	Resident Survey: Chocolá, Guatemala	Semillas para el Futuro/Behavior Research Center	2007
2	Earl De Berge	Survey of Members of Huertos Familiares: Chocolá Guatemala	Semillas para el Futuro/Behavior Research Center	2011
3	César Armando Astorga García	*Jardín Mandala* (Mandala Garden)	Semillas para el Futuro	2012
4	César Armando Astorga García	*Informé Final Proyecto Nestlé* (Final Report Nestlé Project)	Semillas para el Futuro	Dec 2016
5	Earl De Berge	Summary of Survey Results: Participants One Year After the Nestlé Project Ended	Semillas para el Futuro/Behavior Research Center	2018
6	Suzanne De Berge, Thomas Hartig	The Casa Granja (Backyard Farm) Program	Semillas para el Futuro	2019
7	Suzanne De Berge, Thomas Hartig	Casa Granja and Agricultural Extension	Semillas para el Futuro	2019
8	César Armando Astorga García	*Alimentación Saludable para la Madre, el Niño y la Familia* (Healthy Feeding for the Mother, the Child, and the Family)	Semillas para el Futuro	May 2020
9	César Armando Astorga García	*Sembrando la Comida en Tiempo de la COVID-19* (Growing Food in Times of COVID-19)	Semillas para el Futuro	May 2020
10	César Armando Astorga García	*Barrio Alternativo Agrícola* (Alternative Agricultural District)	Semillas para el Futuro	2020

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Appendix III – The Casa Granja Framework

Compiled from Semillas internal reports, program documents, marketing materials, and informed by interviews.

1. Participatory Diagnostic
- Assess family nutrition needs
- Identify hidden resources
- Establish capacity and agree on inputs

2. Strategic Plan
Joint selection of garden elements based on:
- Nutritional value
- Cultural acceptance
- Environmental adaptability

3. Assisted Implementation
- Prepare soil mix and custom plant beds
- Construct livestock enclosures
- Provision of locally-sourced seeds, seedlings, and 'starter' animals

4. Maintenance and Adaptation
- Mentoring in production and harvest
- Weekly site visits
- Periodic education sessions
- Troubleshooting and experimentation

5. Reactive Recruitment
- Observation by neighbors
- Contact with organization
- Participation agreement established with heads of household

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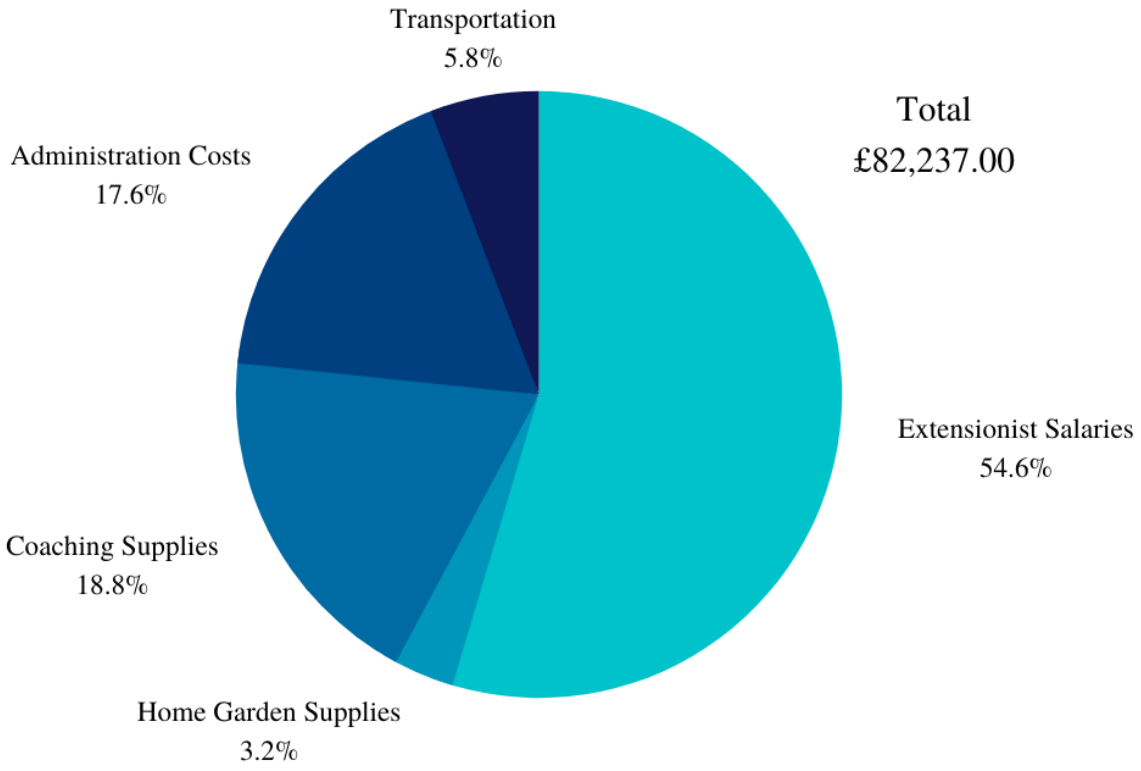
Appendix IV – Casa Granja Projected Annual Expenses

Figures drawn from Document 7. Based on 125 families over a 12-month period.



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Appendix V – Distinctions Between Chajul and Chocolá

Information on Chocolá has been previously cited in this document. Information on Chajul is drawn from several interviews, principally Amachajul's Janet Bourque (Interview 12), plus several doctoral theses documenting history of the Ixil Maya (Mazariegos, 2020; Batz, 2017) and a working paper assembled by Oxford's Centre for Research on Inequality, Human Security and Ethnicity (Caumartin, 2005).

Distinction	**Chajul**	**Chocolá**
Indigenous Identity	Almost exclusively Maya Ixil territory. Comparably strong connections to indigenous identity and practices.	Historically displaced groups of Maya K'iche', plus local Kaqchikel and Mam populations. Divided cultural identity with loose connections to indigenous practices.
Religious Affiliations	Spiritual beliefs and practices deeply rooted in Ixil traditions.	Strong presence of the Evangelical Church, dispersed practices associated with a variety of Maya traditions.
History of Violence	Epicenter of genocidal violence during the civil war, hundreds of massacres by army forces against Ixil villages.	Site of intra-community violence during the war, few documented massacres by state actors.
Household Structures	Significant portion of male population killed during the war or have since migrated. Households often consist of widows and children.	Semillas works primarily with families; men often undertake seasonal work on distant mega-plantations, departing for weeks at a time.
General Climate	High elevation, cloudy, cooler temperatures.	Lower elevation, hot, humid, heavy rains.
Agricultural Viability	Rocky hill sides, cultivable land may be an hour's walk from the village. Agricultural practices often rooted in indigenous tradition, may thwart introduction of farming technology.	Fertile volcanic soil and heavy rains, variable microclimates but suited to the cultivation of numerous crops. History as a hub for agricultural innovation.
Core Crops	Cultural attachment to corn, everything else is "spare parts" (Interview 12).	Cultural attachment to coffee.

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