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World-Making in Process: Agroecology, Learning, and Co-Design for Ecological Resilience and Cultural Survival in Maya-Achí Territory

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World-Making in Process: Agroecology, Learning, and Co-Design for Ecological Resilience and  
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By

Michael Bakal

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Committee in Charge:

Professor Kris Gutiérrez, Chair  
Professor Thomas Philip  
Professor Ananda Marin  
Professor Erin Murphy-Graham

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## Abstract

# World-Making in Process: Agroecology, Learning, and Co-Design for Ecological Resilience and Cultural Survival in Maya-Achí Territory

by

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Doctor of Philosophy in Education  
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A case study of an agroecology program in Guatemala's dry corridor, this dissertation develops and systematically studies the implementation of a methodological approach for integrating Indigenous and Western sciences in processes of community-based co-design.

In recent years, the United Nations and other international bodies have paid growing attention to the impact of global climate change on Indigenous Peoples. Increasingly, this attention has shifted from a sole focus on Indigenous communities' disproportionate vulnerability to the critical role that their knowledge and worldviews can play in responding to this global crisis. Yet despite the growing recognition of Indigenous knowledge, there are few specific methodological frameworks to guide the design of community-based programs that integrate Indigenous and Western paradigms to foster the resilience of communities.

Drawing on four years of collaborative research with the organization *Voces y Manos* in the Maya-Achí region of Baja Verapaz, Guatemala, this design-based study addresses a critical gap in the literature by pursuing two inter-connected aims: (1) To co-develop, with *Voces y Manos* colleagues, a systematic, four-stage approach called Participatory Design for *Buen Vivir* (PDBV) to guide efforts involving both external researchers and Indigenous communities in co-design processes; (2) To longitudinally study how shared visions — what I call “collective design imaginaries” — came to take shape among members of the *Voces y Manos* team as they implemented the PDBV approach. Together, these aspects of the research contribute both to the practice-based, methodological literature and to advancing our empirical understanding of tensions and points of synergy that can be achieved between Indigenous and Western approaches to enhancing the climate change resilience of communities.

Building on mounting critiques of the conventional framework of “development” as a Eurocentric imposition, the methodology of PDBV aims to more closely align community-based work with Indigenous communities' self-defined life projects. To move beyond broad and general calls for a “post-development” paradigm, the methodology of PDBV consists of the following four iterative steps: (1) Eliciting an understanding of communities' valued cultural practices, knowledge, and self-defined visions of change; (2) Developing a theory of change framework for guiding program implementation; (3) Implementing activities and iteratively reflecting on systematic challenges that emerge while translating theory into practice; and (4) Leveraging lessons learned to strengthen the theory of change and to develop new long-term strategies. Each chapter of this dissertation tracks one of these four phases of design.

In addition to outlining the methodological approach, I systematically analyze the affordances and constraints of this methodology, using *Voces y Manos*' efforts to promote agroecology as a case study. In the Maya-Achí region, agroecology is one of the key means through which Indigenous knowledge is being utilized to respond to the climate emergency. Drawing on thousands of years of Maya agricultural expertise, practices of agroecology are recognized both by many Maya-Achí leaders and by international scientific bodies for their ability to foster climate change resilience. However, the value and significance of agroecology are understood in distinct ways by these two groups.

The PDBV methodology showed promise for aligning community outreach workers' commitments and visions of agroecological change with those of the community members with whom they collaborate. These included commitments to eliminating the use of agrochemicals; sustaining collaborative learning and cultural practices; respecting mother earth; respecting elders and reclaiming ancestral knowledge; and preserving native seed varieties. If the terms and frameworks of Buen Vivir and agroecology gestured toward these kinds of commitments, I argue that the specific form they took could not have been specified in advance. Thus, my analysis shows how meanings of Buen Vivir — and practices associated with it — were co-constructed in dialogue and in practice. This shows the promise of the PDBV methodology for moving beyond abstraction to the identification of specific practices whose promotion is simultaneously attentive to environmental concerns, matters of farm productivity, and to cultural regeneration. At a time when Indigenous knowledge has often been either devalued or granted merely symbolic status, this research illustrates the concrete possibility of constructive engagement between Indigenous and Western knowledge systems and offers pragmatic tools for aligning climate change resilience efforts with Indigenous communities' goals and priorities.

## Acknowledgements

This dissertation documents what for me has been an extraordinary journey of learning and growth. The community-based project, social movement, and analysis of both has been a collaborative process through and through, carried out with a wonderful group of people in and outside of academia. I want to acknowledge each of you, as this work would not have happened without your contributions, encouragement, friendship, guidance, and inspiration.

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Tecú Osorio and Gloria González: one cannot overstate the significance of the New Hope Foundation for me personally or for our world. Thank you for your visionary leadership, and for your generosity of time and spirit.

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# INTRODUCTION

## *World-Making in Process: Agroecology and Maya-Achí Resistance to Ontological Occupation*

*The larger context. . . is what in the tradition of Gramsci and Hall is called an organic crisis, a relatively rare occurrence. I refer to it as planetary crisis, civilizational crisis, or a crisis of climate, energy, poverty and inequality, and meaning. By adding meaning, I want to direct our attention to aspects of the crisis that have to deal with a host of formerly unaccented aspects, including ways of being, knowing, and doing (ontology); spirituality; identities; and culture, emotions, and desires. Conjunctural analysis would investigate the particular forces and sites of tension, antagonism, and contradictions at which this type of crisis manifests itself.... (Escobar, 2020, p. xi)*

*In San Felipe del Agua, milpa is more than the fields and crops: it is a network of families, commerce, and practices, much of which is very old. The milpa of San Felipe comprises traditional knowledge, handmade tools, the zebu-crossed criollo cattle used for plowing, burros, dogs, backyard tortilla factories, kitchen tables, meals, and hard work—it is a way of life centered around the maize, and a testament to not only biodiversity, but cultural diversity (Shiva, 2016, 2016, p. 52)*

### **Rabinal, Baja Verapaz, Guatemala**



Location map of the department of Baja Verapaz and the municipality of Rabinal



Rabinal Church and Central Park, Baja Verapaz

Amid growing international attention to climate change, the United Nations has recognized that Indigenous communities and their traditional ecological knowledge (TEK) must be at the center of the global response to the climate emergency (Nakashima et al., 2012). This is not only because many of the world's most climate-vulnerable ecosystems are inhabited by Indigenous communities, but also because these communities steward the majority of the world's biodiversity (Nakashima et al., 2012; Ramos-Castillo et al., 2017). Yet despite this increasing recognition of the role of Indigenous communities' traditional ecological knowledge (TEK), the mainstream attention has generally focused on the application of Indigenous knowledge to solve problems which are still conceptualized according to Euro-Western paradigms. In other words, the aim has been to leverage Indigenous knowledge and assimilate it within pre-existing Western frameworks, leaving aside the many proposals of Indigenous communities for more fundamental social transformation.

In contrast to the mainstream, developmentalist approach, a growing body of Latin American scholarship seeks to engage with Indigenous thought in order to pursue fundamental transformations to prevailing modern/colonial ways of being and knowing (Maldonado-Torres, 2007; Mignolo & Walsh, 2018). Scholars and practitioners in this tradition aim to “design for the pluriverse” by developing programs, policies, and built environments based on epistemologies and ontologies emerging from the global South, especially from Indigenous communities (Demaria & Kothari, 2017; Escobar, 2011, 2015, 2018; Whyte, 2017). Yet while this pluriversal design scholarship offers an inspiring counterproposal to the mainstream assimilationist approach, it has provided few methodological tools for instantiating Indigenous knowledge and philosophies in concrete practices of knowledge co-creation or collaborative design.

This dissertation leverages insights from the learning sciences and Indigenous approaches to advance understandings of the collaborative design and learning processes involved in world-making, or the attempt to “design for the pluriverse.” Specifically, I track the co-design of a program implemented by the organization Voces y Manos aimed at promoting agroecological farming techniques amongst subsistence farmers in Rabinal, Guatemala, a Maya community devastated by genocide in the 1980s and today heavily impacted by climate change. In one register, this work seeks to offer a methodological contribution: I aim to co-develop and study the affordances and constraints of a methodology I call *Participatory Design for Buen Vivir* (PDBV). I ask: *what were the tools, processes, and practices involved in PDBV, and how did these create a framework for attending to the challenges of navigating present-day circumstances while working toward a utopian future?* In addition to the development of tools specific to the context of agroecology in Maya communities, I also attempt to think “beyond the case” (Abramson & Gong, 2020) to consider how this methodology might offer principles and practices relevant to other contexts of collaborative design, particularly of Indigenous communities in the global South.

In a second, empirical register, I aim to study how shared visions — what I call “collective design imaginaries” — are co-constructed and come to shape the aims and working practices of collectives. I ask: *What design imaginaries took hold among the Voces y Manos team as we*

*engaged in this work? In what ways did these design imaginaries leverage the place-based wisdom of the past to address challenges of the future*<sup>1</sup>? In using the term *collective design imaginaries*, I refer to the pedagogical and learning processes involved in the development of shared, utopian visions amongst groups. By studying whether and how *the place-based wisdom of the past* mediates the response to present and future circumstances, I aim to explore the limits and possibilities for transforming dominant onto-epistemologies of development, which privilege future-looking, “expert” knowledge at the expense of place-based, *conocimiento ancestral*, or ancestral knowledge. Together, these questions seek to lend greater methodological and empirical specificity to calls for world-making, thereby helping make this commitment more tangibly responsive to communities.

A key warrant for this study is that while agroecology is widely recognized as key to the response to the climate crisis, it has been articulated in varying ways vis-a-vis the tension between decolonial and mainstream paradigms. Broadly defined as “the application of ecological concepts and principles to the design and management of sustainable agroecosystems” (Gliessman, 2018, p. 599), mainstream, developmentalist approaches tend to treat agroecology as a set of tools and techniques for making farms more diverse and resilient, with only limited engagement with Indigenous onto-epistemologies (e.g., IPCC, 2022). On the other hand, many agroecology scholars see agroecology as deeply grounded in Indigenous lifeways, and as offering a fundamental challenge to capitalism, colonialism, and the modern onto-epistemologies on which they rest. However, this assertion is usually made with limited empirical analysis of how precisely non-Western frameworks come to shape the vision and practices of agroecologists, how such visions are sustained in the face of assimilationist pressures, and how Indigenous communities and outside researchers can work together without subjugating Indigenous knowledge systems. By attending to the co-development of knowledge and shared visions among Maya agroecology practitioners, outside researchers, and outreach workers, I aim to show how the meaning, aims, and practices of agroecology are co-constructed through relational design processes.

Toward these aims and to frame the overall dissertation, this introductory chapter proceeds as follows: First, I provide historical and contextual background on the Maya-Achi community of Rabinal, Guatemala; Voces y Manos, an organization working to revitalize agroecology in Maya-Achí territory; and my own positionality and approach to collaborative research. Second, I argue that agroecology offers an ideal site for studying processes of world-making, precisely because of its divergent conceptualizations — either as a set of “climate smart” techniques, or as a more fundamental challenge to capitalist relations and ontological separations between human beings and the natural world. Third, I review two bodies of research which informed my approach to design and analysis: post-development, and cultural-historical theories of learning. I argue that taken together, these traditions create a powerful framework for

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<sup>1</sup> I run up against some language constraints here, as these cuts between past, present, and future may make more sense within Western than Indigenous temporalities. As I will discuss in chapter 1, an “expansion of the present” may be a more useful frame for what we are attempting.

understanding how efforts to sustain milpa farming—not only as a food production process but also as a relational set of cultural practices—unfold in practice and interaction. Finally, I explain how, specifically, these traditions informed the methodology of Participatory Design for Buen Vivir and provide an overview of each of my empirical chapters.

### **Community Context: Agroecology and Buen Vivir in Maya-Achi Territory**

This design-based study took place in the municipality of Rabinal, Baja Verapaz, a Maya-Achi community located in the Dry Corridor of Central America, one of the world's most vulnerable regions to climate change (Van der Zee Arias, 2012; UN, 2022). Rabinal's total population is estimated at around 40,000 inhabitants, spread among a small urban center and 67 rural hamlets (or aldeas). Eighty percent of the Rabinal population speaks the Maya-Achi Language. Families in the rural aldeas (and some in the town center) own small plots of roughly 1-2 acres where they grow milpas (corn fields intercropped with beans, squash, and a range of edible plants) during a relatively short, 3-4-month rainy season, and raise chickens, turkeys, ducks, pigs, or cattle. For most families, farm yields do not allow for full self-sufficiency, so they must supplement incomes by other means. Dating back at least to the 1800s, many Rabinal families have migrated to Guatemala's southern coast to do seasonal work for meager wages on banana, sugar cane, coffee, or palm oil plantations. Increasingly, incomes are supplemented by remittances from family members who have emigrated from Rabinal, primarily to Guatemala City or the United States.

The Maya-Achi are survivors of what Maya-Quiché scholar Giovanni Batz (2018) calls the “four invasions”: the colonization of Indigenous territories beginning in the 1520s, the land expropriation and displacement of Indigenous communities to make way for coffee plantations and other agribusinesses in beginning in the late 1800s; genocide during Guatemala's 36-year period of state-sponsored violence (1960-1996); and the arrival of megaprojects and extractive industries which continue to displace and oppress Maya communities in the post-war period. Rabinal was one of the communities most drastically affected by Guatemala's internal armed conflict of 1960 – 1996. In Rabinal, resistance to a World Bank-financed dam project led the Guatemalan army to label many of the villages of Rabinal “guerilla communities.” Between the years 1979 and 1983, U.S.-backed death squads carried out at least 29 massacres in Maya-Achi villages which claimed the lives of an estimated 5,000 people (Hautecoeur et al., 2007; Janssens, 2012; Nolin & Russell, 2021; Suazo, 2009).

Even as Maya-Achi communities continue to heal from and repair the social fabric torn apart by the armed conflict, their lives and livelihoods are again being upended, now by climate change. Einbinder et al., (2019) report that climate change has produced droughts so frequent and severe that they threaten to end production of staple and sacred milpas which have been cultivated by Mayan farmers for thousands of years. In response to the crisis, Maya-Achi farmers and organizations have been turning to agroecology as a means of promoting food sovereignty and climate change resilience as well as preserving their culture and way of life. One of these

organizations is Voces y Manos, a small Rabinal-based NGO with whom I conducted my dissertation research and have worked since 2009.

### **Voces y Manos: Organizational History & Context for the Study**

Voces y Manos was founded as a youth development organization in 2009 by young adults who had recently graduated from the Fundación Nueva Esperanza (New Hope Foundation, or FNE), a bilingual middle school serving children of the survivors of the Rabinal massacres, and international partners. I became acquainted with FNE in 2007 when I participated in a solidarity delegation organized by the American Jewish World Service to learn the history of the Guatemalan genocide and support its longstanding partner, FNE. Together, two FNE graduates (Yenifer Valey Gómez and Macario Vásquez Reyes) and two of the AJWS delegation participants (myself and Andrew Carmona) founded Voces y Manos as a youth-led community association to build upon the partnership seeded during the delegation. During this time, as I was starting my teaching career in Los Angeles, I spent summers working with Yenifer and Macario on youth curriculum development, building a close personal and professional relationship with them. Along the way, we have collaborated with many others, some of whom have joined the organization as international board members. Andrew Carmona and Kimberly Vinall played particularly consequential roles during the period that is the focus of the dissertation (2020-2024) and the preceding decade. During its first 10 years of work, Voces y Manos primarily focused on youth participatory action research, youth leadership, and critical media analysis and production, drawing heavily on Freirian critical pedagogy. Given our longstanding interest in Freirean approaches, much of dissertation and preceding work is in dialogue with critical pedagogy, considering its affordances as well as also how agroecology and Indigenous approaches extend some of its tenets (see Bakal and Reyes, 2023).

As climate change became especially acute in the Maya-Achí territory—and inspired by the global youth climate justice movement—Voces y Manos launched a new program to engage young people in leading the effort to respond to climate change by revitalizing and spreading ancestral ecological knowledge and practice. Armando Raxcacó, Voces y Manos' Executive Director, Lilian Bolbito Gonzalez, Edilcer Juárez, and Gregorio Sical—all highly experienced agronomists with extensive University as well as community-based training—played key roles in facilitating and expanding Voces y Manos' transition to agroecology.<sup>2</sup> Funding from Rotary International significantly expanded the scope of the project, and enabled Voces y Manos to hire recent graduates of the Fundación Nueva Esperanza school and Voces y Manos' youth leadership program. Clara Luz Manuel Guanché, Astrid Tista, Diyana Gómez Cordero, Alejandra Rosales Morales, and Loida Eunice Sanjay Sabán, all graduates of FNE, played very

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<sup>2</sup> My practice throughout this dissertation is to use the real names of my collaborators and pseudonyms for all other community participants. This is to properly credit my colleagues with ideas that were truly co-developed, while protecting the privacy of community participants. All study procedures were approved by the committee for the protection of human subjects at UC Berkeley.

significant roles in the development of the program. These young adults began working as interns on the projects, and over time, have taken on growing levels of responsibility. Now, they work as “promotores de Buen Vivir,” or “promoters of living well,” where they, along with Armando, Gregorio, and Lilian, work directly with 250 Maya-Achí families across eight aldeas (hamlets) to support their adoption of agroecology.

A key activity in the design of the agroecology initiative was the development of a theory of change to guide our work. In 2020, before the project was put on a roughly 1-year hiatus due to the Covid-19 pandemic, Voces y Manos carried out an extensive process of community consultations which aimed to elicit (and construct) local understandings and practices consistent with the philosophy of Buen Vivir, an Indigenous and communal conception of “living well.” Below, I will elaborate further on this notion of Buen Vivir and its role in design, yet in general terms, Buen Vivir replaces capitalism’s emphasis on material accumulation with a notion of wellbeing that emphasizes respect and reciprocity in communal life and with the natural world, drawing on the diverse cosmologies of Indigenous Peoples of the Americas. To develop and operationalize our local definition of Buen Vivir, we extensively read the Latin American decolonial and agroecology literatures and sought to place them in conversation with insights from community consultations and from promotores’ daily lives and community work. Through this process, we arrived at a theory of change consisting of four *caminos* (pathways) toward Buen Vivir: (1) food sovereignty; (2) buen vivir pedagogy; (3) respect, equilibrium and wellbeing with the earth; and (4) community organizing. (See figure 1). This framework guided the work of Voces y Manos in agroecology over the subsequent four-year period.

While organizing activities around this theory of change provided a “North star” to guide the work, profound challenges of translating theory into practice remained. As water scarcity, drought, and heatwaves increasingly became the “new normal” of subsistence milpa farmers, community members faced grave, immediate needs which could not wait for Buen Vivir to be realized on the societal scale, through a complete transformation national and international laws and policies. Responding meaningfully to farmers’ immediate material needs—while also working toward a far-reaching utopian vision—became a key tension for Voces y Manos to navigate, and which quickly emerged as a key area of inquiry for my dissertation. This was a

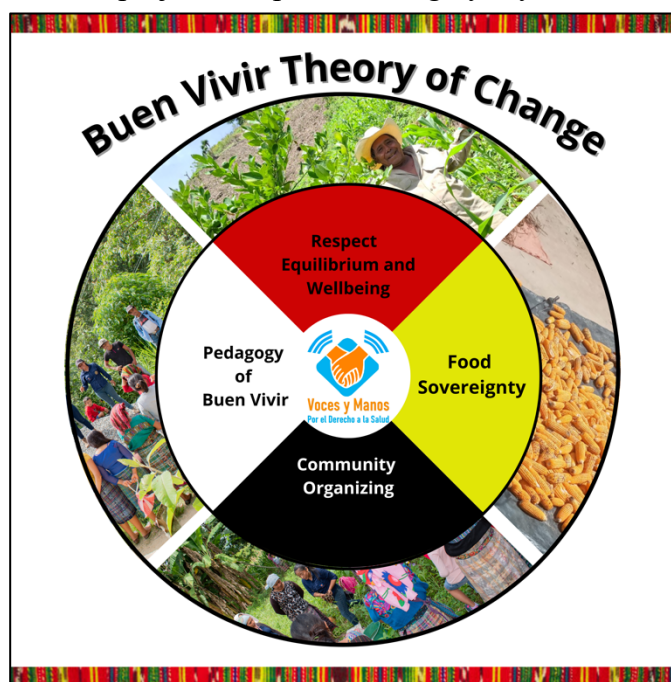


Figure 1. Voces y Manos Buen Vivir Theory of Change framework

tension which had only received limited scholarly engagement, a gap which became evident as we in Voces y Manos read the decolonial, learning sciences, and agroecology literatures to inform our practice. In the texts we studied as a team (and the additional reading I did for my research) we encountered many inspiring accounts of collectives building more autonomous communities by using agroecology; yet we found few tools to help us navigate the pressure to respond tangibly to the near-crisis conditions farmers faced.

With a sense of responsibility for helping farmers survive climate change, Voces y Manos team members and I found this to be a glaring disjuncture. To be sure, we were not the only group who felt a responsibility for simultaneously helping communities manage present-day survival while also working toward more far-reaching, utopian horizons. How had other groups managed this tension? How might we? This dissertation concerns, in large part, the process by which a grounded theory of Buen Vivir was developed, translated into practice, and how these tensions and contradictions between future visions and present-day circumstances were navigated.

## **Research Approach and Positionality**

In a very clear and direct way, my work in the community of Rabinal is only possible due to the heroic efforts of the survivors of the Rabinal massacres — particularly Don Jesús Tecú Osorio and his family and colleagues — who created the Fundación Nueva Esperanza to pursue justice and a more dignified future for their children. They did so with the partnership of international solidarity organizations, who not only helped FNE obtain resources, but also sought to shine a spotlight on the role of the United States and Canada in enabling genocide and ongoing racism, impunity, and economic exploitation to take place in Guatemala. These organizations and individuals modelled an approach to long-term solidarity and accompaniment that shapes my approach working in Maya-Achí communities from the social position of a “gringo” — a white person from North America.

The position of gringo is distinctly recognizable in the Rabinal context, similar to how we may think about whiteness or economic privilege in the U.S. context, yet distinct in that it is a position that affords power, above all, in its privileged access to travel to and resources from the metropole. In Rabinal, it is a social position usually associated with the occasional missionaries, aid workers, researchers, priests, and (rarely) tourists who come through the region. It is a position usually met with respect, deference, or fear, as the possibility of sinister motives (e.g. to extract knowledge or resources under the guise of humanitarian work) always looms.

It is a social position which has usually been managed in ways that stabilize existing power structures, yet there have been important exceptions, from the Catholic priests who taught liberation theology and risked their lives to stop the military’s merciless killing to the solidarity groups who accompanied community leaders during the difficult years of exhuming mass graves and pursuing truth and justice amidst ever-present death threats. Models of that latter approach, scholar-activists Nolin and Russell emphasize that though our work may be geographically

located in Guatemala, the issues we address are not fundamentally “Guatemalan problems,” but rather “global to local problems” (Nolin and Russell, 2021; Russell and Nolin, personal communication, November 2022). The purpose is not to help “them”—an isolated community facing particularly tragic circumstances—but rather to transform a global economic and political order which has countenanced and enabled genocide and ecocide for sake of profit of economic elites concentrated in the global North.

Informed by this stance toward international solidarity, I do not see design-based research as a decontextualized search for prescriptions to help local communities learn to better solve their own problems (perhaps with outside ‘aid’ from the North, a framing which conveniently ignores the role of the North in creating those problems). Instead, I am interested in ties between the local and the global — how community-based work may help address day-to-day issues, while at the same time helping to illuminate practices, principles, values, which might point the way toward broader social transformation (Gutierrez and Jurow, 2016). As Prasad (2018) describes, working to address structural problems as they manifest at local scales can shed light on the workings of social structures and how they impede change. At the same time, efforts to revitalize community life in the wake of genocide and sustainable food systems in the face of ecological destruction offer potentially powerful lessons on the broad transformations our historical moment requires. More specifically, at a time when Western science and technology are viewed by many as solely capable addressing the climate crisis, the Maya-Achí vision of social change offers an important counter-narrative: one that is profoundly informed by historical memory, and whose vision of future-oriented change is deeply informed by wisdom of past generations.

As a citizen of a nation-state which played a decisive role in the colonization and genocide of Guatemala’s Maya communities, I feel a sense of responsibility toward ensuring this dissertation contributes both toward more collaborative modes of knowledge generation, and also tangibly toward relational repair and the redistribution of ill-gotten resources. In the realm of knowledge generation, my aim is to contribute to the body of decolonizing methodologies (Smith, 1999) which aim to change the terms on which Western institutions think about and act on the interlocking crises of poverty, inequality, and ecological damage. I see it as vital that universities work toward the enactment of different models of partnership and knowledge generation; to move from cultural invasion (Freire, 1970) to what Rosado-May (personal communication, May 2024; Rosado-May et al., 2020) calls the intercultural co-creation of knowledge. As a design-based researcher, I seek to develop models which work both toward these new paradigms of knowledge co-creation and co-design, while also being responsive to communities’ concrete and immediate circumstances. Thus, I want this work to contribute toward transformation, however small, at both the level of epistemic justice as well as pragmatic solidarity (Farmer, 2004).

Though I had worked for many years in Rabinal prior to the start of the dissertation, I came to this project with almost no background knowledge on farming. I thus sought to leverage my relative ignorance of milpa farming and access to decolonial and learning sciences scholarship as a dialogical tool to deeper reflective practice and co-design with the Voces y Manos team. Between 2020 and 2024 (20 months in Guatemala; the remainder of the time using digital

technologies), I collaborated on this project as a co-researcher and co-designer. This process involved extensive accompaniment in agroecology fieldwork (both shadowing promotores and doing farmwork with agroecology experts in the community), ongoing reflective practice, assistance with administrative tasks and fundraising, participation and reading and discussion of relevant theoretical and practical texts, and accompaniment in the social movement activities in which Voces y Manos participated and which reciprocally informed our community work.

My long-term involvement in Voces y Manos, and dual roles as a researcher, program designer, and board member created distinct affordances and constraints for collaborative design and for research. The fact that I entered the project with such little experience in agroecology meant that I could not position myself as an “expert” even if I wanted to. As I conducted my dissertation research, I felt an authentic sense of co-learning. Voces y Manos team members—many of whom I’ve known and collaborated with a decade of more—generously explained their farming practices and guiding philosophies to me as they would to a novice (this is optimal, for one who studies learning!). I was also genuinely excited to read and discuss texts I had encountered through my graduate studies that seemed to connect directly to our community work, and my co-workers seemed to share in this excitement.

In addition, we started this project from a foundation of trust and longstanding collaboration. This meant that we entered the co-design process with the kind of relational histories that enabled us to collaboratively co-construct project ideas together – to productively agree and disagree generatively, with mutual respect. It also meant there was a widespread understanding that my dissertation research was only one part of a broader, long-term collaboration. This enabled us to organize research questions and methods in ways that placed communities’ short- and long-term priorities front and center. For example, when our community focus groups drew attention to the concern over the loss of ancestral farming knowledge, Voces y Manos colleagues and I developed a successful grant proposal to teach about Maya agroecology in schools. This program will remain in place after the dissertation concludes. Thus, compared to a more conventional arrangement of design-based work (e.g., of an outside researcher playing a short-term, consultative role), I believe long-term relational histories enabled this design-based research to have more consequential impact aligned with community priorities, and enabled me to triangulate my research findings, informed by prior contextual knowledge and experience in the community.

At the same time, my dual role as a board member and researcher also created power dynamics which required careful attention. In my capacity as a board member often based in the United States (and attendant racialized/gendered social position as a “gringo”), I have played a significant role in securing grants and donations for Voces y Manos. On one hand, this was a practical, strategic use of my social position in an unequal system obtain resources for a grassroots organization. On the other hand, it created a dynamic which—however much we attempted to subvert it—placed me in a position of relative control over resources. This likely meant my voice was unduly influential in shaping the direction of projects, beyond the role of, say, an outside researcher-consultant (which already would be inflected by unequal power

dynamics). What this likely meant is that questions I asked wearing my “researcher hat” (e.g., “let’s think about how does this project ideas connects back to our theory of buen vivir.”) could not be fully separated from suggestions I might make wearing my “board hat,” with the implicit authority of donors’ or board members’ expectations. While the underlying structural dynamic is difficult to fully address, our aim was to make these power dynamics explicit targets of change. One specific way we aimed to do this was by organizing design activities in ways that would elevate all voices, creating rich dialogue across experiences and roles, to collaboratively inform the design of the project. In fact, one of the methodological aims of PDBV is to address precisely this dynamic, which is likely an underappreciated constraint on the work of many community-based organizations. (For an insightful analysis, see Jurow et al., 2016).

Another personal challenge this raised was that I found myself often toggling between roles and wearing multiple hats at the same time. Though I initially treated all the notes I took from my daily activities with Voces y Manos as part of the corpus of data to include in my research, it quickly became clear this was untenable, and I put in place narrower parameters for data to include in each of my distinct empirical chapters. This was helpful for creating manageable data sets for analysis and for providing some order and coherence to my life, yet it also meant that I may have lost some of the richness and comprehensiveness of data analysis I may have achieved as a full-time ethnographer. On the other hand, working as a project co-designer committed to achieving long-term outcomes meant I was constantly attempting to apply theory to real-world contexts. Rather than a threat to validity, I found that my affective sense of exhilaration when transformative change seemed to be happening, or frustration when good ideas were thwarted was a useful analytic tool: it provided me a clearer sense of lacunae in the academic literature, and by constantly placing theory and practice in conversation, it helped me better understand, evaluate, and eventually contribute to theoretical and methodological literatures.

### **Agroecology as a site of world-making**

In the broadest terms, my dissertation attempts to intervene into the growing body of literature concerned with the notion of world-making, a concept whose growing popularity reflects a collective sense that our conjuncture requires more than mere policy adjustments, but rather fundamental transformations, and attendant desires to live outside the bounds of modernity/coloniality (Maldonado-Torres, 2007; Mignolo & Walsh, 2018). As a vision of transformation, the notion of world-making suggests that change has a fractal or scalar quality, in which relations and practices at small scales can contain the seeds of broader social transformations (Gutiérrez et al., 2020; Rogoff, 2023; Wright, 2020). The notion of worldmaking also draws attention to the designed nature of the world, reminding scholars and practitioners that they not only design the world, but that “*the world designs us back*” (Escobar, 2018, p. 4). By designing with relationality in mind, proponents argue, it is possible to enact a different kind of world—a pluriverse—and with it, more communal forms of subjectivity (Escobar, 2018). Yet outside of education, scholarly engagement with worldmaking have generally been carried out at

a high level of theoretical abstraction which has granted only limited attention to matters of *place* and *process*.

Maya agroecology—as a material set of land-based, relational practices passed down across hundreds of generations—offers a rich domain for witnessing *world-making in process*, grounded in the particularities of place. As alluded to above, leading scholars and practitioners of agroecology see it constituting a fundamental challenge to colonialist relations of exploitation. Vandana Shiva (2016), the acclaimed physicist and environmental justice activist, writes that agroecology holds promise for replacing the dominant “industrial paradigm” of agriculture with an “ecological paradigm” (Shiva, 2016, p. x-xi). Along similar lines, agroecology scholar Omar Giraldo (2019) argues that agroecology challenges the very epistemic, ontological and ethical premises of capitalist modernity. He writes that:

The political ecology of agriculture is indeed the battleground where social movements are struggling over agricultural hegemony. *The battle is not just over its political instruments but particularly the ontological, epistemic, and ethical conditions that allow for the construction of territorialities composed of diversified croplands, community forests, mountains, and rivers*—which ultimately is a compelling image from their rural utopia—in opposition to large landholding agribusinesses with their green deserts bereft of small-producer families (LVC, 2015b) (Giraldo, 2019, p. 76, my italics).

This idea that agroecology contests not only capitalist modes of production, but even the deeper basis of western ontologies, epistemologies, and ethics offers an inspiring vision of worldmaking — one which links local practices in the countryside to the construction of a fundamentally more relational world. Yet in laying out what is at stake in the struggle between competing agricultural models, scholarship often tends to transpose this broader ideological terrain of struggle onto the minds of individual agroecology practitioners. Indeed, agroecology scholarship suggest participating in agroecology projects and movements opens the eyes of campesinos, aligning them with a political project that in fact emanates from their own cultural worlds (Giraldo, 2019; McCune et al., 2017; Pinheiro-Barbosa, 2020; Rosset et al., 2019). This is a bold and inspiring claim, yet how do we know when and if it is true? And presuming it is true, how would program designers create the conditions that enable these elements of agroecological consciousness to take hold, beyond simply reproducing particular techniques?

In the following chapters, I treat these questions as both design goals and empirical questions to study, rather than inherent features of agroecology or inevitable outcomes of agroecological programs. To develop a design-methodology concerned with the sharing not only of farming techniques but also transformative ideas and relations, I draw from two schools of thought: post-development—a body of work in which I locate theorizations of Buen Vivir—and cultural-historical theories of learning.<sup>3</sup> I aim to show how these two traditions informed the

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<sup>3</sup> Throughout this dissertation, I use both the terms *cultural-historical* and *sociocultural* theory, with different points of emphasis. I typically use the term cultural-historical to refer to a specific tradition of scholars who link their work to the Russian Psychologist Lev Vygotsky. My work is situated within this tradition, particularly more recent scholarship which has explicitly engaged with questions of power, privilege, and design for social change. I use the term sociocultural learning theory to broadly refer to approaches in education and psychology which recognize the interconnection between social context and cognition.

development of Participatory Design for Buen Vivir in complementary ways. In short, post-development provides a set of constructs (territory, communality, *conocimiento ancestral*, etc.) which allow us to practice collaborative design in ways less mediated by the framework of development. These concepts and frameworks help orient design imaginaries toward far-reaching utopian horizons, grounded in Maya-Achí worldviews and which orient design and research toward relationality. In a complementary manner, cultural-historical theories of learning allow us to move beyond abstraction by providing tools for instantiating such expansive visions in specific collaborative design practices, and for making sense of how efforts to sustain the pluriverse unfold in discourse, in interaction, and in cultural practice.

### **Theory to Practice part 1: Post-development and Buen Vivir**

The first body of work informing Participatory Design for Buen Vivir is “post-development.” It is the field which has built the most systematic critique of western-styled development and advocated for the construction of alternatives to it. Emerging in the aftermath of World War II, architects of international development envisioned their newfound field as an ambitious quest for global poverty eradication and for expanding the West’s geopolitical influence (Truman, 1949). For Gustavo Esteva, however, a leading voice in post-development thought, the fundamental problem with development is that it inescapably implies its opposite: under-development (Esteva, 1992). Thus, it “reproduce[s] the idea that the majority of the world’s population is ‘underdeveloped’ and needs to live like the West,” (Ziai, 2017, p. 2548). Further, by hegemonizing the terms available for communities to express their own desires, the discourse of development constricts the ability of communities to enact their own self-determined futures (Escobar, 2012; Esteva, 1992).

The aim of post-development scholars is therefore not to remedy development with so-called development alternatives like “*sustainable* development,” but rather to pursue “*alternatives to development*” which pursue altogether different aims. Such alternatives are found in Indigenous communities’ own philosophies of what constitutes “the good life.” Examples include Svadeshi from India, Ubuntu from South Africa, and Buen Vivir from Latin America. These philosophies operate on different temporalities than development and challenge its unquestioned faith in science, technology, and linear notions of progress. Jointly, and through their diversity, these “alternatives to development” aim toward the construction of a pluriverse, rather than the singular, “one-world-world” (Law, 2015) prefigured by development.

Buen Vivir is considered the most prominent “alternative to development” framework to emerge from Latin America (Escobar, 2020). Gudynas and Acosta (2011) contend that Buen Vivir challenges Cartesian dualisms, such as the “the division between nature and society, [and] a colonial distinction between modern and non-modern indigenous peoples” (p. 447). Relationality and reciprocity are key ideas undergirding the philosophy, with Acosta (2017) writing that Buen Vivir “is premised on giving and receiving, in an ongoing process of reciprocities, complementarities and solidarities” (p. 2605). Buen Vivir often finds its deepest

expressions in local Indigenous languages, and thus can be said to contain rich contextual meanings as well as universal dimensions. In Maya-Achi, it is referred to as “Utzilaj K’aslemal” and revolves largely around the milpa production and the network of relations involved in it.

Far from an apolitical construct, Buen Vivir imagines “transformation on a civilizational scale” (Acosta, 2017, p. 2604) and, as we will see in chapter 3, can serve as a thread linking local practice with broad social movements. Departing from the vanguardism of much of Marxist thought, its political compass points toward bottom-up, pluralistic visions, rather than top-down designs. Buen Vivir is thus better understood as an umbrella term for a diverse range of enplaced practices and philosophies than a singular framework (Acosta, 2017). In fact, in chapters 3 and 4, I will discuss how using Buen Vivir as a guiding design philosophy opened space for *social dreaming* (Gutiérrez, 2008) beyond the conceptual frame of development. Understood as such an open-ended construct, Buen Vivir invites—even requires—being “populated” with local significations, practices, and imaginaries rather than offering a preset, universal meaning. To this end, the long history of agroecology in the Maya-Achí region provided a rich array of practices, values, and knowledge to flesh out and give Buen Vivir concrete, practical, and contextualized meanings.

Although the next chapter will explore in greater depth the contributions of the field of political ontology—which is closely related to post-development—here, I briefly introduce the field to explain how it shapes my working definition of world-making. As the epigraph quotation from Escobar illustrates, scholars of political ontology understand the socioecological crisis, in part, as a consequence of the foundational stories and practices of modernity (Blaser, 2009, 2010, 2019; Cadena & Blaser, 2018; Escobar, 2020). Like theorists of Buen Vivir, political ontologists emphasize that modernity is premised on Cartesian separations between mind and body; nature and culture; and science and belief. These dualisms entrench socioecological crises by cementing the belief that human beings are inherently separate from, and dominant over, the natural world (Bang, 2016; Grande, 2015; Blaser, 2010, 2019). Yet because these dualisms operate at the level of ontology—fundamental assumptions about the nature of the world—worldviews that depart from modernist premises (and which therefore may offer key conceptual tools for responding to the socioecological crisis in uniquely generative ways) are rendered either entirely unthinkable, or simply misguided, pre-modern “beliefs.” Political ontology thus “focuses on the conflicts that ensue as different worlds or ontologies strive to sustain their own existence as they interact and mingle with each other” (Blaser, 2009, P. 877). A normative commitment that emerges from this scholarship is to build a “pluriverse,” a world where diverse worlds can co-existence without forcing any one world (or ontology) to be subsumed by another.<sup>4</sup>

Drawing on this literature, I define world-making as “the collective practice of working to bring about the pluriverse.” In using this as a working definition, I seek to highlight that

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<sup>4</sup> Proponents of political ontology do not imagine that co-construction of the pluriverse will achieve a total absence of conflict. Yet, they argue that conflicts and differences can be more productively managed through a pursuit of coexistence which is not predicated on ontological closure, or a forced consensus about the “true nature of the world out there.” (Blaser, 2010, p. 237).

world-making defined as such can happen at any number of mutually constituting scales, from small farmer cooperatives to networks of organizations, to broad international movements. In the context of this dissertation, I draw attention to ontological conflicts over the meaning of *milpas*, and attendant cultural practices which ascribe to the maize fields either the status of “object” or “subject.” (I elaborate further on these distinctions, and their relevance for co-design, in the next chapter.)

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Despite providing powerful frameworks and concepts, it is hard to find much specific methodological guidance, or case studies, in the post-development or political ontology literatures. As Arturo Escobar acknowledges in the influential text *Designs for the Pluriverse*, most accounts of pluriversal design have been “speculative and general” (Escobar, 2018, p. 198). Escobar continues that “there is a great need for methods that enable collaborative design over longer periods than usual, that elaborate on the evolving roles of designers under this extended temporality (beyond, say, being initiators or facilitators) and that take to heart the distributed nature of design agency...” (p. 193). Furthermore, Escobar suggests “strategically invoking broad transition imageries such as Buen Vivir and degrowth” (p. 197) in such efforts. Cultural-historical approaches to learning and design offer tools for doing precisely this work of invoking broad transition design imaginaries, and then engaging in the detailed design and analytic work of instantiating them in practice.

## **Theory to Practice part 2: Cultural-Historical Learning Theory and Agroecology**

Thus far, and building with scholars of agroecology, I have argued for an approach to program design that understands agroecology not just as a collection of food production techniques, but also a constellation of cultural practices which prefigure a more relational, just, and equitable world. The field of agroecology has long recognized the importance of education and to building with Indigenous knowledge systems. What it has generally lacked, however, is a clear theory of learning to match these commitments. By contributing to understandings of how Indigenous communities have sustained agroecological knowledge and practice across generations and in the face of colonial threats to their existence, I contend that cultural-historical learning theory can help engender more expansive, dynamic, creative approaches to agroecological program design. In addition, I will argue that a cultural-historical lens on agroecology can enable researchers and designers to gain greater traction on the otherwise ineffable processes of world-making, thereby helping close an important gap between social theory and daily practice.

As a means of introducing cultural-historical learning theory and its relevance to design and world-making, it is useful to begin by considering precisely what learning *is*, what it entails, and how fundamental assumptions about the nature of the world are embedded in theories of learning. One widespread, largely unquestioned assumption is that learning is primarily a process

of individual knowledge acquisition or transmission. This view of learning is itself based on another unquestioned assumption: that knowledge exists as a kind of invisible substance contained in the minds of some and which can be passed along to others. As Rogoff (2023) points out, however, these ideas about the nature of learning and knowledge assume that individuals are fundamentally separate from other individuals, from their communities, from history, and from the natural world. The dualist idea of a fundamental self/world separation which emerges from and makes sense within Euro-Western, mechanistic knowledge systems has been widely critiqued and appears inconsistent with the knowledge systems of many Indigenous and non-Western cultural communities, which understand knowledge construction not as “individual internal processes, but always collaborative, relational, and generative” (Urrieta, 2015, p. 368). Closely related to this, it also appears to be inconsistent with the way many Indigenous communities organize learning.

A cultural-historical perspective (or sociocultural perspective more broadly) provides an alternative theoretical account of how learning happens. Cultural-historical traditions understand learning less as an individual process of knowledge acquisition than a social process of changing roles and forms of participation within cultural communities (Lave & Wenger, 1991; Rogoff, 2003; Rogoff & Mejía-Arauz, 2022). While individual cognition is recognized as playing a role in learning, cultural-historical traditions emphasize the culturally mediated nature of learning, focusing particular attention on how learners’ existing funds of knowledge and cultural repertoires of practice lay a foundation for new learning (Gutiérrez & Rogoff, 2003, Moll, 1998). In addition, cultural-historical traditions underscore that knowledge is distributed and co-constructed within communities of practice (Lave & Wenger, 1991). Finally, sociocultural traditions emphasize the intimate relationship between history as it unfolds along cultural-historical timescales and “history in persons” (Holland et al., 2001).

Methodologically, rather than focusing on whether and how knowledge is transmitted, the focus shifts to people’s changing participation in community activities and practices, which themselves are under processes of change (Rogoff, 2003). Further, rather than studying individual development as distinct from cultural or sociohistorical development, Rogoff (2023) proposes a *mutually constituting* approach, in which we “consider individual and cultural/contextual aspects of learning and development as...aspects of a singular holistic process” (p. 61). These understandings are key to understanding how communities organize and sustain knowledge within sociocultural contexts, an understanding central to an ecologically based approach to design.

Of significance, the cultural-historical account of the mechanism behind learning is one which, many scholars argue, better aligns with the daily practices of knowledge creation of many Indigenous communities (Bang et al., 2015; Rogoff & Mejía-Arauz, 2022; Rosado-May et al., 2020; Urrieta, 2015), as outlined in the theory of Learning by Observing and Pitching in to Family and Community Endeavors (LOPI). This theory, developed over many decades of ethnographic, experimental, and community-based participatory work with and in Indigenous communities, highlights features which appear common among many Indigenous communities

of the Americas (Rogoff & Mejía-Arauz, 2022). Rather than segregating children into specialized instructional settings and teaching concepts by breaking them down into discrete lessons, LOPI occurs as children are integrated into the flow of cultural activities together with adults and children across the lifespan (Rogoff & Mejía-Arauz, 2022). As children (or adults) gain greater skill and familiarity with a given practice, their participation transforms, often in ways that involve greater sophistication, complexity, and responsibility over time (Rogoff, 1998; Rogoff, 2003; Rogoff & Mejía-Arauz, 2022; Rosado-May et al., 2020; Urrieta, 2015). Consistent with many Indigenous philosophies of knowledge and knowledge creation, LOPI is understood as involving not only the development of skills or knowledge, but also ethical values, an awareness of one's interconnection with and responsibility to the natural world, and the ability to innovatively generate new knowledge to respond to new challenges (Bang et al., 2015; Elliott-Groves & Meixi, 2022; Marin & Bang, 2018; Nxumalo, 2021; Rogoff & Mejía-Arauz, 2022; Rosado-May et al., 2020; Urrieta, 2015).

Why and how are LOPI and cultural-historical learning theory important and relevant to the design of community-based agroecology programs? Given the central role of Indigenous knowledge in agroecology, it is vital for program designers to utilize theories of learning which are consistent with Indigenous theories of knowledge and processes of knowledge creation (Rosado-May, 2020). Otherwise, we risk reproducing Eurocentric dualisms, and the tendency to isolate knowledge from ethics and relations (Bang, 2016). For example, if agroecology programs are implicitly based on a theory of learning as knowledge transmission, they will tend to favor workshops, trainings, and other kinds of activities which isolate the knowledge dimension of agroecology from many other vitally important political, relational, and ethical dimensions of learning.

The foregoing discussion of learning theory holds direct relevance for the burgeoning corpus of research on agroecological education, where an implicit theory of learning as knowledge transmission/acquisition can often be detected, despite stated commitments to horizontal learning and dialogue. Scholars working in this realm have made important advances in documenting the pedagogical strategies used by agroecologists across a range of settings, from formal degree-granting agroecology schools to field-based campesino-a-campesino (farmer-to-farmer) exchanges (Holt-Giménez, 2006; McCune et al., 2017; Meek, 2015; Pinheiro-Barbosa, 2020; Rosset et al., 2019; Val & Rosset, 2020). Drawing on the critical theories of Paulo Freire (1970, 1973, 1976) Antonio Gramsci (1971), and the Zapatista movement in Mexico, agroecology scholars conceptualize agroecology pedagogies as being grounded in critical, rural, and Indigenous epistemes (Pinheiro-Barbosa, 2020). From this theoretical orientation, agroecology scholars frequently characterize the young people trained in agroecology schools as “organic intellectuals” (Meek, 2015) and “collective political subjects” (Rosset et al., 2019) who are actively bringing about a global transformation in the world's food systems. Yet while this work has drawn important attention to the role of political education within agroecology movements, it has paid significantly greater attention to questions of pedagogy than learning, inadvertently reinforcing a theory of learning as knowledge transmission, and leaving the

impression that learning trajectories reliably follow the designs laid out by scholars and educators.<sup>5</sup>

In an effort to leverage insights of learning theory to strengthen agroecological program design, I draw from two design-based traditions within cultural-historical learning theory: Participatory Design Research (PDR) and Social Design Experimentation (SDEs) (Bang et al., 2016b; Bang & Vossoughi, 2016; Gutiérrez, 2008, 2016; Gutiérrez et al., 2020; Gutiérrez & Jurow, 2016; Zavala, 2016). These design-based traditions share the field of agroecology's commitments to valuing Indigenous knowledge and to working toward broad social transformations across scales. Yet they offer theories, design approaches, and methods for attending in much greater detail to the *processes* of how such design commitments are (or are not) translated into practice. These design commitments include: (1) critical historicity, (2) axiological innovation, (3) power and its transformation across scales, and (4) linking utopian visions to “here and now” activity.

Each of these commitments directly informs the Participatory Design for Buen Vivir methodology, and I will touch on them in the following chapters. For now, I will focus on one design principle: axiological innovation, which I believe illustrates with particular clarity the contribution of recent cultural-historical design scholarship to the realm of agroecology. Bang et al. (2016) define axiological innovation as the “design of theories, practices, and structures of values, ethics, and aesthetics—that is, what is good, right, true, and beautiful—that shape current and possible meaning, meaning-making, positioning, and relations in cultural ecologies” (pp. 28-19). The commitment to axiological innovation takes seriously the notion that the design of learning environments is not neutral—but rather always reflects particular groups' notions of what is good, what is right, what is true, and what end goals are worth pursuing. In agroecology, and as we will see in later chapters, this design commitment invites an openness to the coexistence of a range of goals—ecological regeneration, cultural revitalization, saving native seeds, generating income, innovating new practices, and maintaining a connection to past and future generations.

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<sup>5</sup>Sociocultural theorists Holland et al. (2001) underscore the importance of attending to heterogeneity in processes of learning, identity formation, and the development of agency. They write that: “The manner of presenting the context of a cultural world—as if fully grasped by an expert—implies a level of *savoir faire*, a level of salience, and a level of identification that *may apply only to a small subset of the people who are presumably participants in that world...Unexamined assumptions of homogeneity...may...permit inattention to the social distribution of cultural knowledge and its role in power relations*” (p. 122, my italics). Holland et al.'s work serves to caution against assumptions of homogeneity in how agroecologists identify with, and make meaning of, the practice of agroecology. Rather than taking as a foregone conclusion that agroecology students inevitably become highly politicized actors, cultural-historical approach would questions such as: Whether and how do agroecology promoters and practitioners come to see themselves as “collective political subjects”? What ontologies, axiologies, and epistemologies undergird the visions guiding collectives working to promote agroecology? How are shared visions developed and learned within collectives? This dissertation does not pretend to offer an answer to all of these questions, yet by focusing on how one collective co-constructs meanings and shared visions tied to their practices of agroecology, I am to contribute to this goal of deepening understandings of how learnings happens in contexts where agroecology is practiced.

Closely related to this, Bang and colleagues (2016) urge designers to consider how community-based design processes *position* learners. In agroecology or community development, we might consider whether and how programs position community members as “end-users” of a given product, beneficiaries of a social service, collaborators, political actors, etc., and the consequences of such positionings. The focus on social positioning urges designers to attend not only to high level goals but also small, interactional moments that might encourage deeper listening and learning through embodied experience and exchange, and the political nature of such positionings.

In Voces y Manos’ work, this commitment to axiological innovation meant, for example: (1) designing activity systems which privilege inter-generational dialogue and relationships; (2) designing in ways which intentionally privilege Maya-Achí ancestral knowledge, while also being open to other knowledge systems, tools, and technologies, and (3) intentionally challenging hierarchies of power. Challenging powered hierarchies was central to how we approached design both in the community and our own internal group processes. Cognization of the ways that many community-based programs position front-line staff as mere “implementers” of projects (while design and grant-writing is delegated to executive leaders), Voces y Manos intentionally sought to re-mediate roles (Bang & Vossoughi, 2016) such that all team members would be involved as equally as possible in co-design. Even if not always stated explicitly or practiced perfectly, this commitment to axiological innovation enabled us in Voces y Manos to be attentive to the interconnection between the transformation of structures of power and the organization of learning and working environments. Attempting to position all collaborators as co-designers was one way in which we sought to create “qualitatively distinct social relations, forms of learning and knowledge development” (Bang & Vossoughi, 2016, p. 175) that prefigured the kinds of transformations we sought to enact on broader scales of change.

In addition to design strategies, cultural-historical learning theory informs my approach to the analysis of the relational, co-constructed nature of agroecological learning and program design. To attend to processes of co-design and meaning-making in program design, I draw on a growing body scholarship attending to the role of Indigenous axiologies, ontologies and epistemologies (AOEs) in the learning sciences (Bang et al., 2012, 2015, 2016; Bang & Medin, 2010; Elliott-Groves & Meixi, 2022; Huaman, 2019; Marin & Bang, 2018; McDaid Barry et al., 2023; Meixi et al., 2022; Nxumalo, 2021; Salis Reyes, 2013; Shirley, 2017). This scholarship has examined how humans learn to develop more ethical ways of knowing and relating to the natural world, against a historical backdrop of settler-colonialism, which has normalized human supremacy and separation from nature. Largely focused on the design of learning environments grounded in Indigenous AOE, this work has shown how learners come to “[view] themselves in kinship with nature” (McDaid Barry et al., 2023, p. 382) rather than regarding nature purely as an objectified resource. Conceptually, I rely on this body of work to examine how Indigenous AOEs connected to the milpa fields are elicited in dialogue with communities, co-constructed among members of the Voces y Manos team, and how they come to shape (or not shape) their collective design imaginaries.

Finally, cultural-historical learning theory offers methodological tools for attending to the co-construction of ideas in dialogue and interaction, including over very short timespans (e.g., Marin & Bang, 2018; Dayton, Aceves-Azuara & Rogoff, 2022, Nasir & Hand, 2006; Philip et al., 2016, 2018; Philip & Gupta, 2020; Vossoughi, 2014). Tools of interaction and discursive analysis have shown, for example, how communities' AOE's are indexed and sustained community members' fluid collaboration (Dayton, Aceves-Azuara & Rogoff, 2022), or in the way they guide children's development of ethical values to care for animals, plants, rivers, and other entities in the natural world. Conversely, these tools of microgenetic analysis have also illustrated how ideologies of race, class and gender are reproduced, challenged, or transformed in school curricula, and in classroom discourse.

In chapters three and four of the present study, I will use these analytic tools to examine the emergence of collective design imaginaries amongst the Voces y Manos team. Recognizing the risk of reproducing elements of conventional development models—even while at the very same time challenging other elements—I will attend to the learning dynamics involved in sustaining transformative collective design imaginaries against the ambient pressure to reproduce the status quo.

### **Participatory Design for Buen Vivir**

Putting cultural-historical learning theory in conversation with post-development and political ontology, relationality emerges as a central area convergence. Furthermore, utilizing both these lenses together draws attention to the key role of cultural practices in sustaining ontologies, or worlds. As the political ontologist Jon Law (2015) writes, “*there is nothing outside practice. We're embedded in practices all the way down,*” (p. 4)” From this perspective, cultural practice can be seen as a key domain for studying how ontologies are enacted in the world, and for designing spaces that enable their enactment. Furthermore, considering political ontology together with cultural-historical learning theory suggests that studying *changes and continuities in cultural practices* offer a key window into understanding the seemingly ineffable process of world-making. The premise can be stated concisely: *Relational cultural practices enact relational worlds*. And, conversely, when the opportunities available for sustaining relational cultural practices is contracted, relational worlds are diminished.

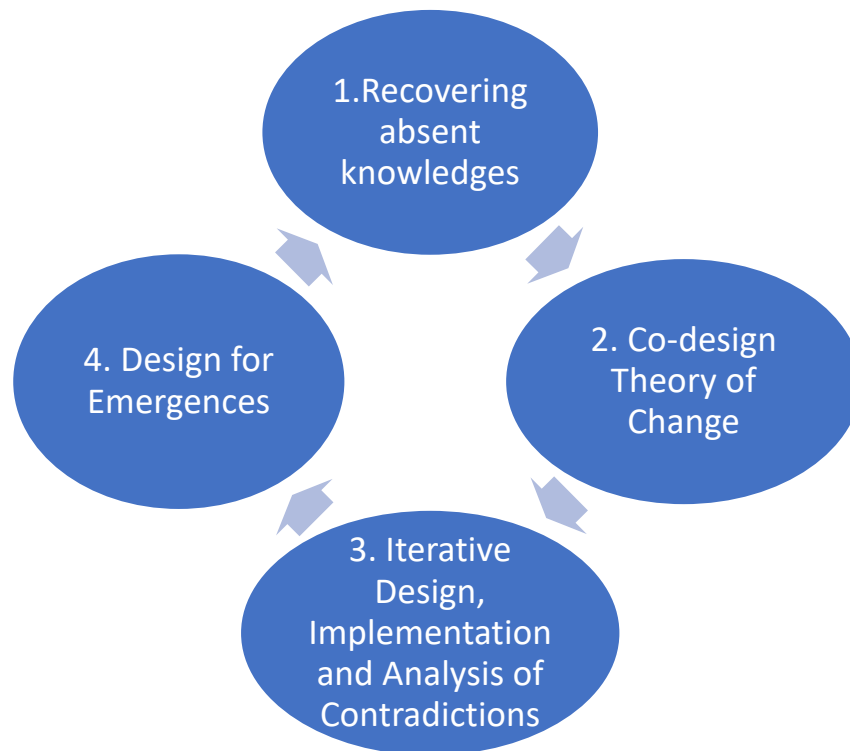
What does this mean for design? The key argument I advance in this dissertation is that designing spaces which enable people across generations to participate in relational practices contributes toward enacting and sustaining the pluriverse. This orientation implies a conceptual move beyond static accounts of ontologies as fixed properties of cultural communities, to a dynamic account which understands worlds as contingent — taking form through their enactments in cultural practices. Along these lines, I use the metaphors of *expansion or contraction* of the *pluriverse* throughout this dissertation to index the consequentiality of people's participation in relational cultural activities. Though it might seem hyperbolic to describe small acts like saving seeds as expanding the pluriverse, this is precisely the insight we

gain by adopting a cultural-historical lens to understand processes of struggles to sustain relational worlds. How else will a pluriverse be strengthened but through a summation of such practices, and resistance to those policies, industries, and practices, which undermine them?

From this perspective, the overarching aim of Participatory Design for Buen Vivir is to engage in co-design efforts aimed at expanding the space within which people can engage in relational cultural practices. As the previously discussed literatures show, this overarching commitment is based on the notion that design is inescapably ontological — it co-creates spaces and practices which are based on, and then reproduce, particular conceptions of the world. And rather than taking the ontological premises of design for granted, the aim is to make these premises explicit, grounding them in the life projects of the Maya-Achí community.

However, while cultural-historical traditions and post-development both emphasize the paramount importance of the relational, in a context where hydroclimatic change imperils farmers' ability to grow food, the emphasis on the relational and the spiritual must not eclipse attention to immediate material needs. These commitments are not necessarily in opposition to one another, yet both require explicit attention. On one hand, failing to attend to the relational dimensions of milpa farming risks reproducing the development paradigm, while failing to strengthen farmers' food production, on the other, risks not being taken seriously by farmers who rely on their milpas for sustenance. Applying the insights of CHAT, political ontology, and post-development to the socioecological context of agroecology promotion in Rabinal, it becomes clear that three levels of intentionality of design are necessary: sociopolitical intentionality about the kind of future toward which we are designing, and the life projects which guide our design; intentionality about creating learning environments which involve people across the age spectrum in cultural practices which prefigure the kinds of relations we want to experience in the world we are trying to build; and intentionality about ensuring these practices offer not only an inspiring future vision, but also a meaningful response to the challenges of the present.

These three design commitments are implicit in the four iterative phases of the PDBV methodology. In brief, PDBV involves: (1) Recovering absent knowledges by eliciting a deep understanding of communities' values, epistemologies, ontologies, and cultural practices; (2) Co-developing a theory of change to align designed activities with communities' life projects; (3) Iteratively designing, implementating, and reflecting on contradictions that emerge in the process of translating designs into practices; and (4) Designing for emergence, where theories of change are revisited and new large-scale cycles of design (over multiple years) are developed. The four phases of PDBV are shown below, in figure 3.



*Figure 1: the four phases of Participatory Design for Buen Vivir*

Following chapter 1, which provides theoretical and historical background, each of the following chapters corresponds to a distinct phase PDBV. I summarize these chapters below:

- Chapter 1, titled “**Milpa Farming in Historical and Theoretical Context**” provides historical and theoretical background on the central challenges the Voces y Manos team of promotores seek to address. Opening with the vignette of a farmer who finds herself trapped in a cycle of needing agrochemical dependency, I seek to offer a historical and theoretical account of how agrochemicals became so dominant in the Maya-Achí territory. Looking historically, I explain how the Guatemalan government, with backing and support from the United States, beginning in the 1970s, turned to the technologies of the so-called “green revolution” (primarily nitrogen-based fertilizers) in order to pacify a rural peasantry clamoring for land reform. I then turn to the theory of political ontology to consider how the green revolution might be conceptualized as what Escobar (2020) calls an “ontological occupation of territories” and what this lens enables with respect to design. This chapter provides the necessary foundation for understanding Voces y Manos attempts to center historicity, relationality, and cultural revitalization in its approach to design.
- Chapter 2 is titled “**Recovering absent knowledges.**” Drawing on Santos’(2015) notion of the sociology of absences, this chapter describes the methods and findings of a series of focus groups Voces y Manos conducted to understand Maya-Achi knowledge, values, and cultural practices connected to agroecology. Held in both Spanish and Maya-Achi,

these focus groups gave rise to a wide range of insights which, I argue, would have been invisible had we approached the project through the conventional frame of development. Participants routinely identified the practices, values, and knowledge of their ancestors as holding the key to managing the socioecological crisis, rather than placing their hopes in the inexorable benefits of progress and new technologies. I describe how these insights informed our design practice and helped ground design in a deep understanding of communities' life projects.

- Chapter 3, titled, “**Designing for The Future while Navigating Contradictions of the Present**” considers the second and third phases of PDBV together. First, I describe the process by which Voces y Manos developed its theory of change, informed by community perspectives and team members' own histories of participation in Maya-Achí farming practices. I describe each of the four caminos to Buen Vivir (see figure 1) and how themes included in the theory of change reflect themes that emerged from community focus groups. I then turn to phase 3, concerned with the translation of this theory of change into practice and the learning that takes hold along the way. Drawing from an analysis of audio recordings of 12 months of reflective praxis dialogues with the Voces y Manos team, I describe recurrent contradictions that emerged between theory and practice and how they were addressed. I use my findings to demonstrate the utility of the concept of the double-bind for collaborative design and I argue that specifying a clear sociopolitical horizon (e.g., Buen Vivir) is necessary if the analysis of contradictions is to point toward social transformation, rather than simply more effectively managing under the status quo.
- Chapter 4, titled, “**Designing for Emergence**” focuses on the fourth and final phase of PDBV. This final phase is similar to phase three, only now focused on much longer cycles of design. In this case, my analysis is focused on a three-day intensive workshop in which the Voces y Manos team reflected collectively on its previous three years of community work and engaged in a visioning exercise of “designing for emergence.” Using its theory of change as a guide, designing for emergence involved team members working in groups to develop strategies and activities for working with communities to advance along each of the four caminos to Buen Vivir. Methodologically, I turn to micro-genetic video analysis to explore the collective design imaginaries which took hold among the Voces y Manos team. I show that the design imaginaries which took hold among the Voces y Manos team strikingly aligned with the commitments community members expressed, as discussed in chapter 2. Specifically, both groups converged in that the central importance they placed on the recuperation of ancestral knowledge. In a sociopolitical context which has historically disregarded ancestral knowledge as an impediment to progress, I argue that that the development of such counterhegemonic visions is a significant interactional achievement, and I analyze how it came to take hold.

Taken together, these chapters aim to provide a detailed description of Participatory Design for Buen Vivir as a world-making methodology. Within each chapter, I leverage insights of Cultural-historical traditions and post-development theory to consider how each specific step fostered particular forms of learning, and how this learning challenged and/or reproduced the dominant onto-epistemologies of development. Because each phase uses its own distinct methodology, each chapter also contains a short methodology section. In the concluding chapter, I reflect on affordances and constraints of the methodology as a whole, both with respect to the local context and the possibility of being utilized in other contexts.

## **Summary and Concluding Thoughts**

I opened this introductory chapter by describing two distinct approaches to conceptualizing the role of Indigenous knowledge and philosophy in the current conjuncture. The first, mainstream approach seeks to incorporate Indigenous knowledge within western designs without questioning or challenging fundamental premises of western modernity. While this approach might go so far as to recognize Indigenous territorial rights, this framework still sees the world as singular, governed by Eurocentric representations, designs, and laws of science and society. The second is the pluriversal approach, concerned with creating a “world where many worlds can fit.” This is an approach which does not reject Western science but rather provincializes it — treating it as one way of knowing, with its own constraints and affordances. Drawing on this literature, I defined “world-making” as the collective practice of working to bring about the pluriverse.

Situated within this world-making literature, this dissertation introduces Participatory Design for Buen Vivir as a methodology for instantiating the commitment to pluriversal design in concrete tools and practices of knowledge co-construction and co-design with communities. Thus, I aim to move beyond the mainstream approach of treating Indigenous knowledge as just another tool in the Western toolkit by highlighting—and co-designing toward—the fundamentally distinct sociopolitical horizons underlying Indigenous approaches to worldmaking. At the same time, I aim to move beyond the tendency toward theoretical abstraction and generalization in the post-development literature by considering in detail the methodological, design, and learning processes involved in navigating tensions and contradictions involved in instantiating the commitment to world-making under in-vivo conditions.

One of the ways I think about the contribution of this work is as an attempt address the very same issues as development (especially issues connected to food production and livelihoods), but to do so within the framework of Buen Vivir rather than development. It is important to emphasize that, for all its limitations, development can and does often save lives, and the issues development addresses cannot simply be ignored. The idea that, because the North has wreaked havoc on the South it should now simply ‘get out of the way’, conveniently ignores the degree to which our globalized world is thoroughly ecologically, socially, and culturally

integrated, and minimizes the need for global solidarity in addressing global crises. That is, rather than a nationalistic turning inward, I believe the progressive response to the inequities of globalization and colonization must be to shift powered relations and engage in reparations to address past and present injustices (Marin, July 2024, personal communication; for further elaboration, see Bakal and Einbinder, 2024). As I have been trying to argue, community-based design work can play a critical role both in responding to the immediate needs of frontline communities, while also shedding light on the values, practices, and relations that might help point the way toward broad socioecological transformations.

At a small scale, then, Voces y Manos' agroecology program intends to respond many of the very material issues addressed by development, but to do so in a manner which is less likely to risk the destruction or delegitimization of non-Western worlds. The difference between the development model and the framework of Buen Vivir (at least in how it responds to immediate needs on the local scale) is simply this: rather than pre-supposing the universal relevance of western development models to address all manner of problems, the aim is to address communities' self-identified challenges by means of those communities own onto-epistemic frameworks and self-determined life projects.

Thus, the goal of responding to communities' immediate needs must not become a mere re-packaging of the same old story of "us" helping "them" by extending our knowledge and our technologies (albeit in a more culturally – or now ontologically – sensitive way). It bears repeating that the decolonial argument is not merely that we need new, better ways of helping the South escape poverty, but that the problem itself lies in the western civilizational model. Western societies are caught almost inextricably in a way of knowing and relating to the world premised on separation, division, hierarchy, and domination. This is evidenced, for example, in the West's apparent inability to rid our societies of the mythologies of racialized and gendered hierarchies of difference and animus, which tend to transmogrify across eras rather than dissipate. It is evident in the seeming inability of the United States—the figurehead of the West—to accept the inevitability of a multi-polar world, and to therefore engage in the unconscionable attempt to sustain U.S. global hegemony through endless wars. It is also evidenced by the fact that inequality is growing at an exponential rate, with the world's global elite driving levels of consumption and greenhouse gas emissions which are pushing the earth's ecosystems up against dangerous tipping points. Yet still, the marketing apparatus marches on, manufacturing needs as fast as products wrapped in the plastics which now clog the world's waterways and suffuse our very circulatory systems.

Though much of this study will be focused on strategies for addressing the ways that Maya-Achí farmers are trapped in a cycle of agrochemical dependency, it is clear that not only "they" are trapped. So-called Western civilization itself is entrapped in its own concepts, its own civilizational model. And following the behavior pattern characteristic of addiction, it seems unwilling or unable to change its ways, even when all the evidence suggests that failure to course-correct will lead to destruction. Though I hesitate almost as much to tell a story of the South saving the North as a story of the North saving the South, the fact is that communities of

the South are often less prone to chase after every shard of shiny object, to use up every last drop of water, to chop every last tree.<sup>6</sup> They are often more skeptical of new tools and technologies than those of us in the North, and therefore less likely to be bamboozled by the false promises of technocratic solutions to socioecological problems, even if they are by no means immune to them.

This is all to say that as the North takes its initial baby steps toward reckoning with the need to place certain limits on growth, extraction, and consumption, it stands to benefit enormously from the epistemologies of the South (Santos, 2015), which offer frameworks like *swaraj*, *buen vivir*, *ubuntu*, and many others that draw from much longer intellectual and spiritual genealogies. Without doubt, the philosophies and ways of life emerging from emplaced collectives (Blaser, 2019) and from cultural practices such as *milpa* farming provide fundamentally important conceptual resources for enacting the profound cultural-historical and ecological transition our conjuncture requires (Escobar, 2020). And yet, these very philosophies are misconstrued and devalued by the Western academy, policymakers and the mass media; and these practices are under the constant threat of ontological occupation from extractive industries, agribusinesses, logging industries and even conservationists (Blaser, 2010; 2019). While the climate crisis heightens these threats, it also presents an opportunity for profound reflection on the kinds of transformations required to address them at “deepest level” by interrogating unquestioned assumption of the Western civilizational model (Escobar, 2020, Blaser, 2010).

Thus, rather than a story of any one group containing *the* universal design solution to the world’s problems, the story I want to tell is one of inter-epistemic and intercultural dialogue (Rosado-May et al, 2020). To this end, I believe the pluriversal framework and approach enables us to leverage the best of diverse knowledge traditions and cultures, while also transforming colonial hierarchies of knowledge and power. Rather than see the pluriverse as a collection of separate, disarticulated worlds, each fending for themselves and working toward their own independent visions of utopia, I much prefer the metaphor of a weaving amongst worlds. My hope is that this work contributes one thread toward that weaving.

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<sup>6</sup> for a prophetic account of this in the form of a children’s book, see “the Lorax” (Seuss, 2013).

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# CHAPTER 1

## MILPA FARMING IN HISTORICAL AND THEORETICAL CONTEXT

*In January of 2022, I visited Rabinal after being away for close to three years. I was eager to visit the communities and see how they were faring in the wake of the COVID-19 pandemic which had upended their lives. The pandemic had delayed our plans to start our agroecology program in the territory, yet as the community suffered an economic depression and rising costs of fertilizer, we realized the program was more critical than ever.*

*Like many of Guatemala's municipalities, Rabinal lies in a low valley, surrounded by an expanse of mountains. Small hamlets, or aldeas, dot these mountains and the valley each ranging from approximately 25 to 450 inhabitants (Raxcacó Román, April 2024, personal communication). The Voces y Manos promotores work in both the low- and highland communities, and they often emphasize how different their agroecological strategies are when working in the hot, arid communities of the valley and the considerably cooler, wetter communities of the mountains.*

*Accompanied by Voces y Manos team members Yenifer, Armando, and Lilian, I was eager to visit and meet the farmers involved in the program after hearing so much about them from virtual meetings and photographs. So shortly after my arrival, the team of promotores led me on a tour of the family farms across the diverse microclimates of Rabinal —beginning in the mountainous community of Xesiguán and working our way down the mountain to the low-lying, valley community of Chuaperol.*



Figure 2: contrasting vegetation of Rabinal's upper and lower regions

*As we headed down the mountain, I was immediately struck by the profound change in weather and vegetation. With every twist down the steep, sinuous road, the lush green foliage of the high mountains turned increasingly brown as it seemingly baked in the sun. Before long, we crossed the Rabinal river, and arrived at the home of Doña Juana. A long-time friend of the promotores, she greeted us warmly, waving to us from her front porch as our truck pulled to the side of the road. We hopped out of the truck bed and greeted Doña Juana. She eagerly led us*

from her home to two of her three small plots: one on the parched land in front of her home, and the other a short walk away, in the fertile land along the banks of the river.

The first plot contained some 16 small fruit trees irrigated with water from a hand-dug well, and then distributed to her fruit trees through a drip irrigation system. The second, riverside plot contained an array of lush, green vegetables: chard, radish, onion, and leeks, which Doña Juana proudly showed us. She irrigated these vegetables with water from the river, pumped up to a storage tank with gas-powered motor, then passively released through a drip irrigation system that the promotores had helped her install. The third small parcel was where she grew corn, on a hillside 30 minutes away from her home, outside the reach of any irrigation system.

Herself also visiting the farm for the first time, Yenifer asked Doña Juana about how long she had worked on this particular plot, and how she goes about carrying out her daily tasks. Doña Juana replied:

*Hice la siembra con mi mama desde niña. No tenemos motor, en este entonces hicimos la siembra con tinacas; ahora uso motor y me ha ayudado bastante. Pude dar estudio a mi hijas para que salgan adelante no tener que sufrir como yo sufrí. Yo soy alfabeta, si yo hubiera estudiado tal vez no hubiera estado aquí.*

I grew crops with my mother since I was a girl. We didn't have a motor [to pump water] at that time so we watered with buckets; now I use a motor and it has helped me a lot. I could provide education to my daughters so they could get ahead and not have to suffer the way I did. I'm illiterate, and if I had studied, maybe I wouldn't be here.

With income from her small plots, Doña Juana explained, she was able to provide her daughters with high school education. From there, they found work in the Guatemalan military – a leading employer of young adults (along with the police, and for men and women alike) in the region. When her daughters are home, Doña Juana explained, they help her work the land.

Yenifer asks how she and her husband manage to farm all three of her plots, now that her children live far from home. “The gas motor helps a lot with irrigation,” Doña Juana explains, “it's not like when we used to farm by bucket.”

“How do you clear the land?” I asked. I'd only recently learned that most farmers clear their land using an herbicide called “gromoxone,” and I was horrified to learn it was outlawed in many wealthy countries because of its strong links to cancer and to the creation of “superpests.” Doña Juana laughed, and then covered her mouth with her two hands and shook her head. She knows that Voces y Manos works to discourage farmers from using agrochemicals. “I know it's bad,” she said referring to the herbicide, “and I tried not to use it. But I have to take care of my chickens, I have to cook, I have to wash clothes. I have three small pieces of land. With what free time was I going to go weed with my azadón (my hoe)? I had to go grab the bomba,” she said, referring to the backpack sprayer used to apply herbicide. In a cultural mode of expressing (and perhaps coping with) a once manageable situation that has slipped into the realm of impossibility, Doña Juana flashes us a guilty smile and laughs.

“Es cierto (it's true),” Armando says. Having farmed since he was a young child in the same region, Armando understood well how much time and energy is saved by using herbicide to clear the thick layer of thorny weeds that sprout up before planting season.

Clearly, Dona Juana was very committed to working her plot, and grateful to the promotores for their support installing her irrigation system and helping her plant and maintain her fruit trees. The vegetables she grows are impressive, and we cannot resist the opportunity to

*purchase several bunches of her dark green leeks before heading home (although I find myself wondering later whether are contaminated with gromoxone). As we drove back, our conversation in the car revolved around the seeming impossibility of providing farmers with a viable alternative to the use of gromoxone. Later in the week (see chapter 2 for a continuation of this vignette) we would unpack Doña Juana’s self-description as an “analfabeta” – an illiterate; how she seemed to equate farmwork with suffering; and how the same military which had carried out a genocide in these very villages was now seen as one of the few employers offering a pathway out of poverty.*

*Having been away for several years, I also felt overwhelmed by the magnitude of climate change in the region. I’d forgotten how bad things had gotten. Despite my best efforts to stay positive, I found myself worrying that perhaps we were only delaying the inevitable. I wondered if we, like Doña Juana’s gas-powered water pump, were merely squeezing a few extra drops of water from a rapidly desiccating earth, and naively holding onto a vision of rural Indigenous life that was rapidly disappearing beneath a rising sea of globalization.*

This story of Doña Juana—a woman deeply committed to her land and ancestral practices, who also is increasingly using industrial farming methods and whose daughter earns her living in the military—illustrates the profound double-binds faced by Maya-Achi farmers.<sup>7</sup> Her situation is typical of many of the families with whom Voces y Manos works, marking a contrast to the somewhat romantic portrayal of campesinos frequently found in the academic literature. While her and other Maya-Achi farmers’ resilience is undeniable, our dialogue with her also illustrates the ways in which Indigenous agricultural practices are circumscribed by powerful structural forces which are far beyond the control of Dona Juana’s family, Voces y Manos, or even regional governments to address. There is the intense pressure of climate change and concomitant drought and water scarcity. There are intense market pressures of global food systems, which at once drive up the costs of farm inputs, incentivize farmers to use agrochemicals, and ultimately depress revenues that can be generated from small-scale farming. There is the overwhelming dearth of economic opportunities for young people, and constant lure of migrating to North try to achieve the Guatemalan version of the American dream. And then there is the militarized state, nearly omnipresent in supposedly “post-war” Guatemala which continues to draw young people into its ranks “like some demonic suction tube,” as Martin Luther King Jr. once said of another state’s military complex (King, 1967).

Furthermore, taking Doña Juana’s predicament as the starting point underscores the importance of the question at the heart of Voces y Manos’ practice and this dissertation: *how can we navigate the contradictions of present conditions even as we work toward utopian futures?* While much of the academic literature concerned with the notion of world-making has addressed the latter part of this question (describing the contents of a utopian future), less work has attended to precisely how collectives might go about clearing the thorny brush that must be cleared on the pathway to get there.

To map this path from a current to future condition, it is vital to understand how “the living hand of the past” (Pea & Cole, 2019) has shaped the present. To do this, I attempt to situate Doña Juana’s predicament in historical and theoretical context. Tracing the interplay between individual lives and structural conditions—in a process Weis and Fine (2012) call

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<sup>7</sup> The vignette I tell of Doña Juana is a composite of the story of two individuals, described in my fieldnotes, both of whom live in the same valley region of Rabinal. The issues described – of agrochemical dependency, water scarcity, family separation, employment in the military are widespread and typical among farmers in the territory.

critical bifocality—can only sharpen our analysis of present conditions and clarify how we might work toward more just futures.

### **Historicizing Doña Juana’s Predicament: Empire, Colonialism & Discourses of Development**

Situating Dona Juana’s predicament in history brings us to a seemingly unlikely time and place: President Harry Truman’s 1949 Inaugural address. This speech laid out an ambitious new doctrine of US global leadership and is largely credited with ushering in the so-called “age of development.” In a well-known line from the address, Truman stated:

...Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge (Truman, 1945, as cited in Escobar, 2012, p. 2)

Blending objectives of poverty eradication, global cooperation, and expanding the U.S. sphere of influence, the so-called Truman doctrine laid out a new paradigm of U.S. global leadership in helping the so-called underdeveloped nations advance along the pathway of development. Truman’s speech is credited with establishing development not only as a new term but a dominant frame of reference, and one which would go on to profoundly shaped the next 7 decades of U.S. and global foreign policy (Esteva, 1992). The speech powerfully illustrates one of the key assumptions underlying the discourse of development: that material needs could only be met if countries of the South followed the western pathway of industrialization and ever-increasing production. The fact that this statement seems commonsensical to many policymakers in the global North — and that alternative pathways seem so inconceivable —is testament to just how powerful this discourse would become.

Nowhere was the commitment to development by means of the “application of modern scientific and technical knowledge” more vigorously applied than in the domain of agriculture or in the country of Guatemala. Beginning in the 1950s, driven by Cold War prerogatives, the United States began a concerted campaign of spreading newly developed agricultural technologies (initially synthetic fertilizers, subsequently agrochemicals and hybridized seeds) that would become known as the “green revolution.” As agricultural lands were at the heart both U.S. imperial interests and the longstanding colonial project of Guatemala’s European-descendant aristocracy, the green revolution found especially fertile ground in Guatemala. All too often Maya farmers were the victims of this “harvest of empire” (Gonzalez, 2022).

#### ***Precursors to the Green Revolution***

From the time of the Spanish invasion in the 1520s, Guatemala has been understood by its ruling elite as “la patria del Criollo” (the homeland of the Spanish-descendant) (Peláez, 2009). For the country’s Indigenous majority, the elite’s self-granted license to unlimited land has meant nearly uninterrupted processes of forced labor and land theft, which were met with varying forms of resistance and resilience. During the country’s so-called “liberal period” (1873-1944), the exploitation of land and labor took on a new direction as sequential Guatemalan presidential administrations began justifying the old colonial practices of land theft in the new discourses of modernization and progress. It was these discourses, Carey (2009) argues, that laid early the groundwork for subsequent decades’ focus on development and the green revolution.

Seeing the subsistence activities of milpa farmers as inherently antithetical to their notions of progress, the governments of this period began granting massive land extensions to foreigners and wealthy, Spanish-descendant Guatemalans to establish “more productive” monocrop export plantations (Batz, 2018; Grandia, 2012; Janssens, 2012; Nolin & Russell, 2021; Suazo, 2009). As coffee came to dominate the Guatemalan export market, an 1877 law of President Justo Rufino Barrios allowed the state to unilaterally expropriate communally held Indigenous land to make way for coffee plantations. “Any foreigner or citizen who wanted these new state lands simply had to make a public claim (‘denuncio’) to an area and pay to survey it,” Grandia writes (2012, p. 39).

The fact that this land consolidation required the dispossession of Indigenous farmers from their homes, or that this dispossession would involve enormous violence and hardship, was generally seen as a non-issue. Contemporaneously, the Barrios government enacted so-called vagrancy laws requiring the indigenous population to provide mandatory labor on the coffee plantations. As my *Voces y Manos* colleague Lilian explains, Maya farmers “woke up one day to find out they had been dispossessed from their lands and then forced to work as slaves on that very same land” (Bolvito González, personal communication, Jan. 2024). Grandia (2012) notes that by 1921, 40 percent of Maya-Q’eqchi’ farmers — who only decades prior lived and worked their own communally- or family-held lands — now lived and worked on coffee plantations.

Over the next five decades, through these ongoing cycles of dispossession and land consolidation, Guatemala’s export sector grew rapidly, and with it, so did the power of international agricultural export corporations (Carey, 2009). Chief among them was the U.S.-owned United Fruit Company. With close ties to CIA director Allan Dulles and Secretary of State John Foster Dulles, the company exercised extraordinary influence over Guatemala’s economy, laws, and policies (Schlesinger & Kinzer, 2020).

By the early to mid-1900s, Guatemala’s land inequality had become so extreme that 0.3 percent of farms controlled by international corporations and the country’s elites owned more than half the country’s farmland (Schlesinger & Kinzer, 2020). This land inequality led to a peculiar labor and migration pattern which came to characterize the work and life of many in Guatemala’s highland Maya pueblos. Understanding this pattern is crucial to make sense of the appeal of green revolution technologies among many Maya milpa like Doña Juana, as we will see shortly. Under this pattern, small landholders (mostly but not exclusively Maya) produced maize on their own farmlands during the country’s May-October rainy season. During the dry months, as maize stores began running low, Maya farmers often would migrate to the plantations (known as *fincas*) to harvest banana, cotton coffee, or other cash crops. As agricultural economist Isakson (2009) argues, this unique labor pattern was optimal from the perspective of finca owners. In a phenomenon called “semi-proletarianization,” Maya farmers’ subsistence activities functioned as a subsidy for the finca owners, allowing them to pay their laborers less than a starvation wage (Isakson, 2009).

By 1944, Guatemala’s profound inequality and repression had reached a breaking point. Mass protests forced the country to a standstill. A popular uprising of disgruntled military personnel and democratic-minded Ladino civilians brought an end to the dictatorship period, and democratic elections were held in 1944. Elections brought to power the country’s first democratically elected President, the schoolteacher Juan José Arévalo. During a unique period in Guatemalan history known as the “10 years of Spring” Arévalo and his successor implemented a series of reforms loosely modeled on Franklin Delano Roosevelt’s New Deal. In the face of constant stalling and threats from the Guatemalan congress and elites, the Arévalo administration

built the country's first social security system, strengthened labor protections including the right to unionize, expanded the national health and education systems, and implemented modest land reform measures (Grandia, 2012; Janssens, 2012; Nolin & Russell, 2021; Schlesinger & Kinzer, 2020; Suazo, 2009). With the passage of his infamous "decree 900" in 1952, Arévalo's successor, Jacobo Arbenz Guzman, took these incipient land reform measures in a more substantial, and more sensitive, direction. The decree required that the country's largest landholders distribute fallow lands to landless farmers, and during the short period that it was in effect, 100,000 poor farmers obtained land holdings. The United Fruit Company, however, took the policy as a direct affront to its practice of buying up more land than it could use to thwart competitors. United Fruit Company lobbyists used their close ties to the Eisenhower administration to convince the White House that the events unfolding in Guatemala amounted to nothing less than an immanent slide toward communism. In 1954, at the behest of United Fruit, the U.S. government intervened militarily, and the 10 years of spring were brought to an abrupt and sanguinary end by a U.S. backed coup d'etat.<sup>8</sup>



Figure 3. "Glorious Victory," by Diego Rivera, depicting the 1954 U.S. coup of Guatemalan President Jacobo Arbenz Guzman. In the center, CIA Director Allen Dulles shakes hand Col. Castillo Armas. (wikimedia commons)

The CIA trained and armed Guatemalan opposition General Carlos Castillo Armas to stage a ground invasion from Honduras, while the U.S. warplanes flew menacingly over Guatemala City to signal the U.S. backing of Armas. Though Armas' rebels numbered only a few hundred, Arbenz saw the futility of fending off a U.S.-backed coup. He and Arévalo went into exile, and Guatemala was once again returned to the hands of military dictators (Grandia, 2012; Janssens, 2012; Schlesinger & Kinzer, 2020).

The country was then plunged into another prolonged period of violence and repression. Between 1960 and 1996, successive U.S.-backed military dictators responded to a relatively small, armed rural insurgency by carrying out a grossly disproportionate campaign of mass terror. In this "invisible holocaust" (invisible, that is, to the outside world), more than 600 villages were razed, over 200,000 persons, were killed and over 1.5 million were displaced. With

<sup>8</sup> It is striking that this took place just 9 years after Truman's afore mentioned inaugural address, where he assured the world that, "the old imperialism--exploitation for foreign profit--has no place in our plans. What we envisage is a program of development based on the concepts of democratic fair-dealing." (Truman, 1945)

Maya people consisting of 83% of victims of this violence (a tiny fraction of whom were actually involved in guerilla armies), the atrocities committed in villages like Rabinal were eventually deemed “acts of genocide” intended to “destroy in whole or in part” the Mayan peoples of Guatemala (CEH, 1999; Grandia, 2012; Janssens, 2012; Nolin & Russell, 2021; Suazo, 2009).

### *Guatemala’s Green (Counter-)Revolution*

Seeing agriculture as a key front in the battle against communism, one of the first actions of the post-coup military government, with backing from the US government and private foundations, was to begin to intensively promote the Green Revolution. If Indigenous farmers could double or triple yields on their small plots, so the reasoning went, there would be no need for redistribution of land or resources. Explicitly linking the green revolution to the fight against communism, in 1954 (the year of the coup) a major Ford foundation report read:

If our aid is lacking or wasteful, the Communists will do the job on their own...in their current efforts to modernize, the underdeveloped countries will lean toward the West, adapting its technology and political ideas (Ford Foundation, quoted in Carey, 2009, P. 293)

Thus, the green revolution became “a strategy to bury alternative development models and undermine the agrarian movement” (Carey, 2009, p. 292). Harkening back to Truman’s speech, modernization was again the watchword, but now supercharged by the intensity of cold war politics. Most historical accounts of this period generally treat Maya campesinos quite schematically — either as a revolutionary bloc with an intrinsic predilection for Marxism on one hand, or a pliant, apolitical mass readily depoliticized by the promises of the green revolution on the other. Relatively little scholarship has examined how green revolution technologies were actually perceived by Maya farmers. An important exception is Carey’s (2009) study of Maya-Kaqchikel milpa farmers in Guatemala’s Western highland plateau of Chimaltenango.

Carey’s detailed archival and ethnographic analysis paints a nuanced picture, in which many Kaqchikel farmers initially credited synthetic fertilizer for helping them increase their yields and gain a degree of economic autonomy, only to later find themselves locked in cycles of dependency. Like Maya farmers throughout the highlands, the majority of the Maya-Kaqchikel fit the semi-proletarian pattern of growing their own corn and beans, while supplementing incomes with annual treks to the large fincas. Shortly after synthetic fertilizers were introduced into the region in the 1950s and 1960s, farmers enjoyed a production boom which enabled them to reduce their dependency on wage labor. However, after the OPEC oil embargo in the 1970s caused fertilizer prices to spike, these farmers had to return to wage labor, now in order to afford the high costs of synthetic fertilizer. “Paradoxically” Carey writes, “synthetic fertilizer often trapped farmers in the very dependent relations from which they hoped it would relieve them” (p. 284).

This predicament of being “trapped” by agrochemicals applies to Maya-Achí farmers today, who initially embraced the “freedom” afforded by agrochemicals, only to later find themselves vulnerable to global market vicissitudes over which they had no control. In fact, this is the precise double-bind in which Doña Juana finds herself, like so many, and it is one that is made ever more urgent by climate change. (The question of how to navigate these double binds—aware of the history that led to them—is the focus of the next chapter.)

There is one final dynamic—a complex linkage between development and genocidal repression — which must be woven into this narrative if we are to fully make sense of the legacy

and impact of the green revolution in Rabinal. In the 1970s, before the worst years of repression and genocide, Rabinal was a highly organized and politicized community, with Suazo (2009) estimating that, at its peak, as many as 60% of Rabinal campesinos belonged to the Comité de Union Campesino (CUC), a nationwide peasant organization. This fact often comes as a shock to Rabinalences born after the war, who have come to know their municipality as a depoliticized, decentralized community where people primarily “look out for one’s own.” While a newer, national campesino movement — CODECA — has a small Rabinal membership and agroecological collectives are on the rise, the level of political organization in Rabinal’s today is but a shadow of what it was in the 1970s. What happened?

The obvious answer is *repression*. During the armed conflict, Rabinalences were subjected to what Levenson (2013) calls necropolitics which were designed to make the stakes of even rhetorically challenging the state inconceivably high. The Dictator Rios Montt, whose forces decimated and burned entire villages in Rabinal famously offered Maya campesinos a choice between “*frijoles o fusiles*” — beans or rifles (McConahay, 2013). Watching catechists, priests, agroecologists, and community leaders tortured and killed all around them, many Maya-Achi community members learned the harsh lesson that community organizing comes at an unimaginably high personal and familial cost. In such a context, focusing one’s aspirations inward on one’s immediate family quite understandably came to be seen by many as the only sane and prudent option.

Perhaps the less obvious answer is *development*. After the war, development projects poured into communities affected by violence. These development projects were tied to the calculus of cold-war politics described above, and explicitly aimed at undercutting land reform (Carey, 2009). Maya-Achi agroecologists today sharply criticize these development projects for generating dependency, paternalism, community division, and a loss of ancestral farming practices and values (Einbinder & Morales, 2020). Focusing on another Maya community devastated by the armed conflict, Copeland (2019) describes the ways in which ubiquitous promises of development projects—from politicians and aid agencies alike—served to narrow political imaginaries, giving rise to an anemic, project-centered version of neoliberal democracy. Combined with extreme state terror, this produced what he calls *radical pessimism*, a widespread belief that radical change is desirable but impossible to achieve. Thus, hopes that once took expression in mass movements eventually found their only practical outlet in development projects that doled out fertilizers, seeds, agricultural tools, food aid, and the like.

The two-pronged “strategy” of repression plus development seemed to have accomplished its objectives, to a significant extent.<sup>9</sup> As I will describe in chapter two, community division and radical pessimism are seen by many in Rabinal as major barriers to change, and can be understood as direct outgrowths of these broad sociopolitical forces. And yet, the resurgent movement of efforts to revitalize Maya-Achi farming and cultural practices points to the potential of agroecology for breaking the impasse, as I will discuss in chapter 4 and the conclusion.

In summary, this critical bifocal (Weis & Fine, 2012) analysis has sought to link

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<sup>9</sup> It is unclear the extent to which development and repression truly were devised as a part of a singular strategy. It is clear, on one hand, that US development agencies explicitly linked the promotion of green revolution technologies to the fight against communism. On the other hand, as Einbinder (personal communication, April 2024) points out, many of the development agencies involved in agricultural extension had funding from European organizations which did not have the same cold-war commitments as the United States. While intentions of promoting the green revolution were varied, effects can still be understood in terms of a singular project having the described consequences.

contemporary dilemmas of agrochemical dependency to historical projects of U.S. imperialism and (neo)colonialism. This analysis has highlighted four key patterns, which form the backdrop of the current study: (1) the historical patterns of colonization and dispossession of Maya subsistence farmers, which shrunk their landholdings, thereby making swidden or rotating farming systems impractical, while at the same time forcing them to compete in a “free” global marketplace with the very transnational agribusinesses who displaced them; (2) intensive promotion and marketing of agrochemicals, tied to both free market opportunism as well as coordinated campaigns to depoliticize the peasantry; (3) community division, which many in Rabinal understand as direct outgrowths of brutal repression and neoliberal development models; and (4) hydroclimatic change, which has turned drought and crop failure from a rare calamity into a common occurrence.<sup>10</sup>

### **Situating Doña Juana’s Predicament in Theory: Political Ontology of the Milpas**

Starting with Truman’s inaugural address, the previous section offered an analysis of Doña Juana’s predicament focused on political economy and geopolitics. In this section, I will offer a complementary “reading” grounded in the theoretical framework of political ontology. I will argue that beyond understanding the green revolution as a project of domestic colonialism and international imperialism, we can also understand it as an ontological project, intervening into the lives of Maya campesinos at the level of foundational relations among human beings and the natural world.

A relatively new field of study linked to the so-called “ontological turn” in anthropology, political ontology attends to what it calls ontological conflicts that emerge when Indigenous communities’ life projects<sup>11</sup> come into contact with modern/colonial projects of environmental protection, extraction, and development (Blaser, 2009, 2010, 2019; Cadena, 2015; Cadena & Blaser, 2018; Escobar, 2020). This field relies on a specific, three-layered definition of ontology which must be unpacked before its overall intervention can be specified.

The first layer is what Blaser (2009) calls a dictionary definition, which he describes as a kind of “inventory of kinds of being and their relations” (p. 877). This inventory entails “assumptions of what kinds of things do or can exist, and what might be their conditions of existence, relations of dependency, and so on” (p. 877). The second layer is directly connected to matters of cultural practice; or, as Blaser (2009) writes, how “ontologies perform themselves into worlds” through “practices and interactions of both human and non-humans” (p. 877). In a frequently cited essay, Jon Law (2015) succinctly summarizes the centrality of practice for ontologies: “*there is nothing outside practice. We’re embedded in practices all the way down* (p. 4).” This layer of the definition suggests that “ontologies” have no independent existence outside of practice. Rather, worlds are enacted in and through practice. On this note, Blaser uses the

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<sup>10</sup> One of the consequences of each of these patterns is migration, another major challenge and threat to the Maya-Achí communities’ ability to sustain in milpa farming practices.

<sup>11</sup>Blaser (2019) defines the term life projects as, “practices of a good life that are oriented to the sustenance of emplaced collectives and that contrast with development precisely because the category of humans does not necessarily (or fully) operate” (p. 86). I use this term frequently as a more general term for encompassing the notions of ontology, epistemology, and axiology, and the commitments informed by these orientations to the worldmaking and to knowledge creation.

terms “ontologies” and “worlds” synonymously, a usage which I follow. Given its attention to matters of cultural practice, this second layer of the definition articulates in important ways with cultural-historical theories of learning and development.

The third layer of the definition focuses on the stories, narratives, and myths of cultural groups. Consistent with longstanding anthropological practice, these are treated as windows into cultural communities’ “assumptions of what kinds of things and relations make up a given world” (p. 877). Perhaps because this third layer of the definition is most readily studied (stories and myths are relatively stable whereas cultural practices are dynamic and constantly changing), it is this layer that has predominated in most studies. Significantly, however, this may lead to the perception that ontologies of cultural communities are as fixed as the stories they tell, rather than as contingent as the practices they engage in.

Under what conditions then, does ontology become political, and what makes political ontology a field of study as such? In short, ontology becomes political in instances when worlds (ontologies) collide. The paradigmatic cases of such ontological conflicts are when extractive industries enter Indigenous territories. Blaser argues that Indigenous movements often describe these conflicts in terms that depart markedly from Western frameworks:

There is a vigorous push from capital and states to reach still ‘undeveloped’ natural and cultural ‘resources.’ But what appears from a modernist perspective as ‘resources’ are entities to which indigenous and other place-based peoples are related in diverse ways. And I stress that the relations are diverse rather than assume that the notion of property can encompass those relations. This is what is manifested when, for example, indigenous peoples press the point that even if they have to fight for legal ownership of the land, the proper way of understanding the relation is their belonging to the land rather than the other way around (Blaser, 2009, p. 891).

Although there is a vast diversity in Indigenous thought concerning the natural world, many Indigenous environmental movements find common ground in the contention that the natural world is *not to be regarded as an inert collection resource available for endless human consumption*. In the struggle to stop the Line3 tar sands pipeline in Anishinaabe Territory, for example, leaders reminded their allies and the public: “Water is not a resource, it is a relative” (Rise Collective, August 2021, Personal communication). Anishinaabe scholar-activists Winona LaDuke and Leanne Betasamosake Simpson make this same point in their writings (LaDuke, 2020; Simpson, 2017). On a strikingly similar note, the Maya intellectuals Ajpub’ Pablo Garcia and Saqijix Candelaria López (2023) write that “the contribution of Maya thought to western culture acquires relevance, above all, in the conception of the human being within nature, not as a being that dominates it, but rather as part of the web of life” (p. 26, my translation). There are abundant examples of Indigenous community resisting extraction in such terms.

How can we account for this convergence of thought—and the closely related observation the most powerful resistance movements to environmental destruction routinely emerge from Indigenous communities—without losing sight of the cultural diversity within and between Indigenous communities? As Sandy Grande explains in the acclaimed text *Red Pedagogy*, commonalities in Indigenous resistance to extractivism are not a coincidence; but nor do they find a guarantee in some mystical essence of Indigenous people (Grande, 2015). She writes that:

In a time when the dominant patterns of belief and practice are being widely recognized as integrally related to the cultural and ecological crises, the need for understanding other cultural patterns as legitimate and competing sources of knowledge is critical. In this context, the voices of Indigenous and other non-

Western peoples become increasingly vital, not because such peoples categorically possess any kind of magical, mystical power to fix countless generations of abuse and neglect, but because non-Western peoples and nations exist as living critiques of the dominant culture, providing critique-al knowledge and potentially transformative paradigms (p. 95).

Thus, even if Euro-modern notions of progress find their most ardent critics in Indigenous communities, it makes little sense to speak of “Indigenous Ontology” as though it indexed some unitary thing. At the same time, through ways of life developed over thousands of years in particular places, the ways in which Indigenous and other non-Western peoples and nations “exist as living critiques of the dominant culture” (Grande, 2015, p. 95) must be recognized. Such a long duration of life grounded in specific places may help explain Indigenous communities’ often more relational orientations toward those places, sustained through practices passed down across generations .

Such intergenerational relationships to place are poorly captured by Western concepts like ‘nature’ or ‘the environment.’ The notion of the environment implies a degree of unfamiliarity, denoting an entity that is “outside of us.” In Bang’s (2016) terms, it denotes a “subject-object” orientation, between a knowing, agentic human “subject” and an inanimate object ‘nature.’ The relationship of many Indigenous communities to the human and nonhuman beings in their territory, in contrast, may be better understood as “subject-subject relations” of various forms, (Bang, 2016) grounded in ethics of reciprocity. The nature of these ontological differences—and how they often manifest in conflicts—is a major focus of political ontology.

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To date, most work in political ontology has focused on large scale, singular events which provoke ontological conflicts, such as the incursion of extractive industries or the placement of national parks in Indigenous territories. Less work has attended to the smaller scale, long-duration kinds of incursions that are the focus of this study, such as the slow displacement of native seed varieties by hybridized or transgenic seeds, or the gradual adoption of agrochemicals which undercut the intercropping strategies so central to the cultural practices of milpa farming. While harms of large-scale struggles against extractive industries and resistance to them are prominently visible and lend themselves conceptualization as ontological conflicts, the latter can be more difficult to perceive as such. Yet Maya Achi agroecologists frequently describe the introduction of agrochemicals and hybrid or transgenic seeds as “invasions,” suggesting the appropriateness of this frame of ontological conflict or “defense of territory” (Copeland, 2019) to these efforts to sustain and revitalize Maya-Achi agroecology.

How, then, does the lens of political ontology help us to make sense of the struggle to sustain milpa farming practices? In short, it enables us to understand competing visions of the nature and purpose of milpa farming as ontological struggles between fundamentally distinct ways of understanding human relations to the natural world (Escobar, 2016). Through this lens, we can understand the green revolution not only as a geopolitical project, but also an ontological project enacting *subject-object* relations between humans and maize fields, regarding the latter as inert objects to be manipulated purely in service of human material needs.<sup>12</sup> In contrast, we can

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<sup>12</sup> As we will see in chapter 1, spiritual and cultural practices connecting people to the land (such as performing blessings over seeds) have declined as green revolution tools and technologies have taken hold. This is not a coincidence: performing ritual blessings over transgenic seed makes little sense, when those seeds have been developed outside the milpa system of relations, purely for purposes of maximizing yields.

say that the agroecological approach—at least in its most far-reaching expressions—is a life project which enacts *subject-subject* relations among humans, animals, plants, microorganisms, and the cosmos inherent to the understanding of milpas in the Mayan cosmovision (see Batzín, 2019). Framing milpa farming in these terms, I conceptualize efforts to sustain Maya-Achí agroecology as a form of resistance to what Escobar (2020) calls the ontological occupation of territories, and I explore what this orientation to milpa farming enables and makes visible in the design of community-based programs.

## Conclusion

In this chapter, I have used both historical analysis and the theoretical lens of political ontology to problematize the myriad challenges undercutting the sustainment of milpa farming practices in Maya communities. Looking historically, we can see how Mayan farmers' experience of being trapped by agrochemicals connects to broad geopolitical and historical forces. The political ontology scholarship allows us to overlay an important layer onto this historical analysis, enabling us to recognize how and why Maya-Achí resistance to these practices is often understood primarily as an effort to sustain sacred relationships and cultural practices, and only secondarily as a class struggle against unjust market relations and corporate practices.

In the following three chapters, I explain in detail how these historical and theoretical lenses informed the methodology of Participatory design for Buen Vivir in three main ways. First, historicizing dilemmas such as those of Doña Juana helped enable our team of designers to engage in a bifocal (Weis and Fine, 2012) mode of analysis attentive to both structural antecedents to contemporary contradictions, as well as how they manifest as problems of the here-and-now. Holding this historical and structural analysis in the background while attempting to address short-term issues was an important means of avoiding a narrow focus on changing individuals' knowledge or behavior, implicitly holding them responsible for their own conditions. Second, the lens of political ontology/post-development enabled our team of designers to keep in mind that the broader stakes of efforts to sustain the milpa system of farming involved sustainment of cultural (or ontological) worlds, even if day-to-day efforts often revolved around meeting material needs. Third, I suggest it may have enabled a form of prefigurative politics to take hold, linking local farming practices to broad social movements.

The following chapter attends to the process by which the Voces y Manos team deepened our collective understanding of the relational dimensions of milpa farming through a process of community dialogues. Chapters 3 and 4 then turn to the question of how we used these understandings to inform program design, and balanced the pursuit of the utopian horizon of Buen Vivir with the need to also attend pragmatically to the communities' material needs in the here-and-now.

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## CHAPTER 2

### RECOVERING ABSENT KNOWLEDGES: NEW WAYS OF SEEING FOR NEW WAYS OF DESIGNING

*Voy caminando hacia la montaña, mi abuela montaña / I go walking towards the mountain, my grandmother  
mountain*

*Voy encontrando árboles y flores de colores también / I go finding colorful trees and flowers too*

*Voy sintiendo el sol / I go feeling the sun*

*El viento que sopla a mi alrededor / The wind that blows around me*

*Hay pajaritos multicolor, que vuelan junto a mí / There are multicolored birds that fly next to me*

*Hay un río largo, que va serpenteando / There is a long river that winds its way*

*Muchas historias de la luna y los pueblos / Many stories of the moon and the towns*

*Se escucha el corazón de la tierra / You can hear the heart of the earth*

*Que va bailando junto al mío / That is dancing next to mine*

*todo está vivo / all is alive*

*Espíritu del bosque / spirit of the forest*

*Espíritu del agua / spirit of the water*

*Espíritu del fuego, de la tierra y del viento / spirit of the wind*

*Espíritu del bosque / spirit of the forest*

*Espíritu del agua / spirit of the water*

*Espíritu del fuego, de la tierra y del viento / spirit of the fire, of the earth and of the wind*

*Y todo, todo tiene un corazón / and all, all has its heart*

—Sara Curuchich, “*Todo Tiene Corazón*”

This chapter describes the first and foundational phase of PDBV, which I call “Recovering Absent Knowledges.” This approach derives from what Santos’ (2015) calls the “Sociology of Absences,” a process aimed at recognizing and revalorizing non-Western epistemologies. While the Sociology of Absences offers a theoretical proposal for challenging epistemicide (Santos, 2015), it has remained largely an abstraction: To my knowledge, it has not been applied to an empirical study aimed at informing the design of a post-development program.<sup>13</sup> The current study aims to do so through a series of extended dialogues between Voces y Manos team members and community members participat

In the introduction to this dissertation, I argued that a tendency in the world-making literature toward theoretical abstraction has left three crucial issues underexamined: (1) how world-making takes on specific cultural forms in particular places; (2) the real-world constraints and contradictions that collectives face in efforts to enact and sustain relational practices and worlds; and (3) the learning and relational processes involved in navigating those constraints and contradictions. To address these lacunae and respond directly to communities’ expressed needs, this chapter details the methodology Voces y Manos used to attempt to recover Maya-Achi knowledge connected to the practice of milpa farming, and to use that knowledge to inform program design. The conjectures guiding this study are two-fold: first, that a “recovery of absent knowledges” is empirically feasible and can yield insights beyond the professional vision of development; and second, that these insights can inform concrete activities to guide a post-development programmatic agenda.

To frame this paper’s methodological intervention, the following background section traces the ways in which campesinos in the global South have been (historically) and are (contemporarily) portrayed to publics in the global North via the representational practices and discourses of international development. From there, and consistent with my practice throughout this dissertation, I synthesize two bodies of literature which together inform the development of an emplaced, culturally mediated methodology for recovering absent knowledges: cultural historical learning theory and political ontology. Putting Goodwin’s (1994) notion of “Professional Vision” in conversation with Escobar’s (2012) critiques of the development discourse and Santos’ (2015) critique of epistemicide, I will develop the *Recovery of Absent Knowledges* as a methodology and analytical approach aimed at designing for the pluriverse.

After explaining Voces y Manos’ (hereafter, “our”) data collection and analytic strategies, I discuss our ethnographic findings on changes in milpa growing practices amid complex socioecological pressures and farmers’ perceptions of these changes, rooted in their values and life projects. Setting the stage for chapters three and four, I then use these ethnographic findings to show how the Recovery of Absent Knowledges began pointing the way toward ontologically minded design strategies.

On the basis of these findings, I will conclude by making two arguments. First, on a methodological note, I will argue for the importance of new analytic practices (“new ways of

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<sup>13</sup> Rather than Santos’ “Sociology of Absences” I use the more straightforward phrase “recovery of absent knowledge” because this phrase is more intuitively clear when translated into Spanish and because it maps more closely on to the aims of our ethnographic work. “Recovery of Absent knowledges” and the procedures which comprise it may be considered a strategy within, or a component of, a “Sociology of Absences.”

seeing”) for more ontologically minded ways of designing. I flesh out this argument with specific examples of how the Recovery of Absent Knowledges methodology brought to light knowledge, values, and practices which likely would have been entirely outside of mainstream development’s field of vision. Second, I propose *expanding the space available for relationality to take hold* as a metaphor for developing design practices grounded in these values, and practices, and knowledge.

## **Background**

### ***Indigenous Farmers Under Development’s Regime of Representation***

The discourse of development is the primary interpretive framework through which inhabitants of the so-called third world have come to be known by those in the so-called first world. The imprint of Development has been so pronounced and pervasive that “even today most people in the West (and many parts of the Third World) have great difficulty thinking about Third World situations and people in terms other than those provided by the development discourse” (Escobar, 2012, P. 12). Escobar’s (2012) study of the development discourse particularly attended to what he calls Development’s *regimes of representation*. This refers both to macro-level discourses depicting global South communities, as well as the tool-embedded conceptual frameworks which organize the work of development agencies.

Perhaps there is no group whose realities were more thoroughly shaped by development’s regimes of representation than “the peasantry,” a category of persons whose visibility and perceived uniformity was dramatically elevated during the age of development (Sachs, 1992). Not unlike deficit representations of non-dominant communities in the global North, the modes of life of the global peasantry were generally represented through frames of deficit, poverty, and backwardness. Harkening back to Truman’s Inaugural speech (Truman, 1949), an influential 1975 World Bank Sector Policy Paper on Rural Development (World Bank, 1975), opens by outlining its aims with respect the world’s rural poor in these terms:

Since rural development is intended to reduce poverty, it must be clearly designed to increase production and raise productivity...It is concerned with the modernization and monetization of rural society, and with its transition from traditional isolation to integration with the national economy (p. 3).

The quotation illustrates not only the Bank’s universalized representation and definition of the global “peasantry” as a target population, but also how these representations gave rise to a particularly narrow view on how best to improve their living and working conditions. First, and consistent with World Bank practice in general, the Bank’s depiction isolates and privileges the economic dimension of life, assuming farmers’ only aim and purpose is to maximize their financial returns. Because, according to this account, peasants’ poverty stems above all from their low productivity, the solution follows naturally enough: to modernize their practices and integrate them into the global economy. Conveniently masked is any critical examination of the role of structural inequalities (in land tenure, access to credit, global market incentives, etc.) in creating the material struggles faced by landless and small landholding farmers. And as discussed in the introduction, the possible drawbacks of shifting practices toward export-oriented

production—vulnerability to price fluctuations, increased toxic exposures, and declining autonomy—were simply not entertained.

Additionally, it is important to highlight that these discourses of modernization, productivity, and market-integration involved crucially important ontological and epistemic assumptions. As Escobar (2012) writes, “only *certain kinds of knowledge*, those held by experts such as World Bank officials and developing country experts trained in the Western tradition, are considered suitable to the task of dealing with malnutrition and hunger, and all knowledge is geared to making the client knowable to development institutions” (p. 111, my emphasis). Development’s regimes of representation and working practices thus generally preclude any sustained, generative engagement with local knowledges, cultural practices, or values. Non-market-oriented forms of exchange (or even monetary exchange in local markets) were similarly dismissed, explicitly or implicitly. The effect, writ-large, of development’s regimes of representation was the delegitimation of entire ways of life, entire knowledge systems, and modes of being/knowing which sustain relational worlds. In its insistence on viewing campesinos in purely economic terms, the Bank enacted what Santos calls the “social production of non-existence,” which he describes as “the arrogance to refuse to see, let alone valorize, the experience around us only because it is outside the [form of] reason that allows us to identify and valorize it” (Santos, 2015, P. 170).

While high-level World Bank documents offer a window into key tenets of the development discourse writ-large, how, precisely, do they shape the working practices and modes of representation/analysis used by development practitioners? Understanding how macro-level discourses are translated into meso-level professional practices and ways of seeing is critical to re-mediating development practice. Cultural-historical activity theory offers clues to understanding this process of translation across scales.

### ***Professional Vision and “How we See” Communities: Deficit or Ingenuity?***

Cultural-historical approaches have long emphasized the inseparability of human processes of perception and representation. Contesting the notion that perception is a transparent, ahistorical, biological capacity inherent to the human species, cultural historical theorists conceptualize perception as a process which is always filtered through particular interpretive frameworks (Wartofsky, 1979). Goodwin’s (1994) notion of “Professional vision” illustrates the consequences of this insight with particular clarity.

Professional vision refers to sets of perceptual lenses and representational tools that individuals and institutions conferred with professional expertise use to make sense of and construct reality. Focusing on the seemingly disparate practices of archeologists and expert witnesses, Goodwin illustrates with micro-genetic specificity the ways that professionals’ ostensibly neutral and objective truth claims get constructed through a set of historically constituted, domain-specific practices and tools.

Goodwin highlights three practices which together constitute professional vision: coding (transforming observed phenomena into objects of knowledge), highlighting (marking phenomena or objects as salient) and producing and articulating material representations (e.g., the creation of maps, graphs, etc.). Together, these practices construct interpretative frameworks which “organize the perception of nature, events, or people within the discourse of a profession” (Goodwin, 1994, p. 609) Professional vision operates such that “a worker [comes to view] the world from the perspective it [the professional vision] establishes. . . [Professionals] engage in

active cognitive work, but *the parameters of that work have been established by the system that is organizing their perception.*” (Goodwin, 1994, p. 609, italics mine).

As Gutiérrez and colleagues (Gutiérrez et al., 2017) argue, this understanding of professional vision has direct implications for researchers and designers whose representations of non-dominant communities have historically reinforced narratives of deficit and deficiency. To counter this, the authors advocate using tools, practices, and interpretive frameworks which together form a type of professional vision more attuned to ingenuity in youth and communities’ everyday repertoires of practice. Doing so, they contend, can help “capture the fullness of people’s activities, as well as their potential” (Gutiérrez et al., 2017, p. 2). Furthermore, attuning to the ingenuity in cultural practices enables more ethical, dialogical, and proleptic partnerships between researchers and communities. Under such conditions, “co-imagining new social futures for people, their communities, and schools” (Gutiérrez et al., 2017, p. 2) becomes possible. This focus on everyday repertoires of practice offers unique insight not only for the improvement of educational settings but also for the design of alternatives to development.

Escobar’s (2012) own analysis of the operations of the development discourse showed striking similarities to Goodwin’s notion of professional vision. To trace movement from macro-level discourse to the operations of development institutions, Escobar’s “institutional ethnography” of development examined how regimes of representation were enacted in daily working practices. His study identified “schemata and structuring procedures” which enact and reproduce development’s unique form of professional vision. Much like Goodwin’s “coding,” Escobar emphasized the work of labeling inherent in development practice.

The work of labeling involved a conceptual categorization of people into decontextualized groups such as “malnourished children,” “landless peasants,” and “pregnant women.” Such labeling practices enable the basic functions of development to move forward; they allowed “target populations” to be identified, goals to be set, and interventions designed, implemented and evaluated. However, as an intellectual task of abstraction, labeling necessarily involved a conceptual removal of individuals from their contexts, such that relatively uniform frameworks may be applied to diverse groups. Much like Goodwin, Escobar argued that this work of labeling constructs a tautological regime of representation in which the professional comes to view—and reproduce—the world through “the perspective it establishes” (Goodwin, 1994, p. 609). Almost by design, then, this regime of representation was radically closed off to the possibility of alternatives to the existing ways of seeing, interpreting, and acting. Particularly difficult to perceive from the vantage point of Development’s professional vision are life projects that depart from Western ways of knowing and valuing.

### ***New Vision for a New Design Practice: Toward a “Recovery of Absent knowledges”***

My aim in drawing attention to the concept of professional vision and its application in conventional development practice is not to rehash the well-rehearsed debate over development’s successes or failures, or whether it ought to be rehabilitated or scrapped. Rather, my aim has been to demonstrate that modes of representing communities are always partial, and never politically neutral. Because of their non-neutrality, modes of representation invariably shape modes of design. This is the starting premise which underlines the commitment to collaborative design, grounded in communities’ self-defined life projects. “An archaeologist and a farmer see quite different phenomena in the same patch of dirt,” writes Goodwin (1994, p. 606). Indeed, so too would a Maya-Achi farmer and a World Bank official.

Taking this as a point of departure, the question becomes how new modes of professional vision might be developed that enable designers to see in a “patch of dirt” something more akin to what Maya-Achí farmers might see in it (which probably means seeing it as something more than a “patch of dirt”!). This does not imply homogeneity of any community – whether farmers, archeologists, or world bank officials. What it does imply is the power of interpretive frameworks to shape design visions, even if they do not universally determine them.

This highlights the importance of making epistemic, ontological, and axiological commitments explicit rather than taken for granted. Toward this end, Santos’ (2015) notion of a “sociology of absences” provides a useful theoretical orientation. I briefly discuss Santos’ work at theoretical level before presenting *Voces y Manos*’ attempt to render these insights into a concrete methodology.

At its foundation, the sociology of absences is concerned with exposing the operations of what Santos (2015) calls *abyssal lines*: lines of colonial difference which delegitimize/ed (historically and today) the knowledge and lifeways of those communities inhabiting the colonial zone (Fanon, 2008), even as it sanctioned near-limitless violence against their bodies and territories. Santos conceptualizes the sociology of absences as a process involving two moments. The first is a kind of critical inquiry into the “social production of non-existence” of the knowledge and lifeways of communities in the South. Emphasizing that “non-existence” is socially—rather than naturally—produced entails studying the specific colonial processes which have suppressed and delegitimated Indigenous and non-Western knowledge systems. The second moment moves from critique to emergence—elevating the salience of Southern epistemologies by conceptualizing them on their own terms, independent of their relationship to Northern epistemologies. As Santos rhetorically asks:

What is there in the South that escapes the North/South dichotomy? What is there in traditional medicine that escapes the modern medicine dichotomy? . . . Could it be possible that the countries considered less developed are more developed in fields that escape the hegemonic terms of the dichotomy? (Santos, 2015, p. 172)

Thus, more than a work of excavating of the past or looking to a distant future, the sociology of absences implies what Santos calls an “expansion of the present.” I understand “expansion of the present” to refer to the fact that non-Western knowledge are not relegated to the past – they remain alive in the present. Thus, “absence” does not denote disappearance, but rather a historical process of delegitimation—a refusal of Western Institutions to see and value what’s hidden in plain sight.<sup>14</sup>

The opposite of the refusal to see is the commitment to learn to look closely and listen deeply, and to work toward creating conditions that enable survivance of ancestral practices and knowledges. Much has been buried beneath the rubble of 530 years of colonization and genocide. Yet, like seeds passed from generation to generation, much of traditional knowledge remains and is being constantly renewed and regenerated. Broadly then, Santos’ theorization helps us define the task of recovering absent knowledges as learning to see practices and ways of knowing in ways unmediated (or less mediated) by the framing of the “the North/South

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<sup>14</sup> However, as we will see in the next chapter, Western Institutions’ refusal to see and value Indigenous knowledge is compounded by the difficulties involved in sustaining epistemologies and worldviews amid colonial contexts of structural inequalities. I will elaborate further on this in the discussion.

dichotomy.” Doing so enables a more expansive experience of the world to be apprehended and designed for.

### ***Rising to the Concrete through a focus on Changes and Continuities in Cultural Practices***

In specific terms, how might such a sociology of absent knowledges be conducted? Scholars of political ontology make a key observation: Ontologies do not precede practices but are constituted through them. In a frequently cited essay, Jon Law makes the point succinctly: “*there is nothing outside practice. We’re embedded in practices all the way down* (Law, 2015, p. 4)” Law elaborates:

So here’s the difference: in a European or a Northern way of thinking the world carries on by itself. People don’t *perform* it. It’s *outside* us and we’re *contained* by it. But that’s not true for Aboriginal people. The idea of a reified reality out there, detached from the work and the rituals that constantly re-enact it, makes no sense. (Law, 2015, p. 1)

Though his analytic distinction between Northern and Aboriginal ways of thinking is an overgeneralization, it nonetheless offers insight into the indissoluble relationship between practices and ontologies. Curiously enough, however, while the importance of cultural practice is recognized in post-development and political ontology literatures, it has been posed as an issue of theory, not of method.

Here, cultural historical activity theory offers a key contribution. Cultural-historical research has developed specific methodological tools for attuning researchers and communities to the ways in which cultural practices are changing, in response to environments, which are themselves always changing (Rogoff & Mejía-Arauz, 2022). Putting this body of work in conversation with political ontology, a key observation emerges: *changes in cultural practices have ontological consequences*. When the space available to participate in relational cultural practices is contracted, relational ontologies are diminished. When that space is expanded, relational ontologies are sustained. Law’s point bears repeating here: *there is nothing outside of practice*. Without being embedded and sustained in cultural practice, an ontology will lack any material existence and, for practical purposes, cease to be. The converse is also true: relational cultural practices *enact* relational worlds.

Putting these theoretical traditions together, it becomes clear that cultural practice must be at the center of a methodological attempt at recovering absent knowledges, and with it, relational ontologies. To make this methodology concrete, it was necessary to specify a domain of focus. In our case, this domain was milpa farming. “Accessing” the ontological dimensions of milpa farming, then, became a matter of posing four surprisingly straightforward questions, and facilitating discussion around them:

- (1) How did your parents, grandparents, and ancestors farm the milpas?
- (2) How do people farm milpas today?
- (3) What has changed from then to now, and what has caused those changes?
- (4) How do you feel about those changes in milpa farming, and what do you think should be done about it?

Discussion around these questions proved a rich entry point into understanding the network of relations involved in the practices of the milpa system, as well as threats to it. Below, I

describe in greater detail who participated in discussing these questions, how their perceptions were elicited and analyzed; and how they were used to inform design.

## **Methods**

### ***Context & Design of Focus Groups***

Consistent with a “decolonizing methodologies” approach (Smith, 1999) focus groups were designed to do much more than extract information. They were conducted as one part of a half-day convening of farmers, aimed at building relationships, and exchanging knowledge. Data collection was thus one component of a more integral process of a “*diálogo de saberes*” (or “dialogue among knowledges”, see Pinheiro Barbosa, 2017) with the exchange of knowledge between research and community members being no more or less privileged than the exchange of knowledge among farmers themselves. Convenings were held at the *Rancho El Caracol* agroecology training center, located approximately 5km outside the center of Rabinal and run by Voces y Manos partner organization, the Association of Community Production Committees (Spanish initials: ACPC). The meeting place and training serve as a model farm and local hub for community organizing and agroecology promotion for ACPC and allied organizations.

In total, four convenings were held, each lasting from approximately 8am until 1pm. Participants, all of whom have been involved in the Voces y Manos programs since its inception, included representatives of each of the six aldeas involved in the program. Three of these communities are located in the arid, lower valley region of Rabinal while the other three communities are located in the higher altitude region with a distinctly cooler, wetter microclimate. Because agricultural practice and conditions in these communities are distinct, focus groups were held for high- and low-elevation communities separately (2 focus for each micro-region).

Convenings included four distinct moments: (1) introductions and welcome; (2) facilitated focus group discussion on changing farming practices over time, in response to climate change (3) facilitated small group discussions, in which participants reviewed existing Voces y Manos activities to date, and provided suggestions on how these activities could be improved moving forward; (4) a walking tour of the rancho caracol farm, and exchange of heirloom plants. The focus group component of the convenings, on which the current paper primarily reports, lasted approximately 90 minutes on average. Participants were provided transportation to and from the farm, as well as a breakfast and lunch made entirely out of food grown on the *Rancho El Caracol* farm. In lieu of financial compensation, many participants received banana tree saplings, cuttings of yucca or taro plants, and composting worms through informal exchange among participants. Meals and transportation were also provided to all participants.

### ***Participants & Recruitment***

Selection of participants was determined by Voces y Manos’ team of *Promotores* through a deliberative process. Rather than selecting a random sample, Promotores identified participants whom they believed would be well-equipped to serve as spokespersons for broader issues faced by their communities. The number of participants involved in each focus group/convening ranged from 10-12, approximately 80% of whom were women. All focus group participants were

adults, who ranged in age from 30-75 (mean age=45 years), and all worked in agriculture. Most already knew each other already through their community ties and/or from previous Voces y Manos activities. All participants were bilingual, speaking both Maya-Achí and Spanish, though most were Achí dominant.

Once potential participants were selected, each prospective participant was called by telephone by one of the Voces y Manos promoters. Using a recruitment script as a loose guide, they described the purpose of the convenings, the general type of questions that would be asked, relevant ethical considerations (noting, in particular, that discussions would be audio recorded and that de-identified quotations would potentially be shared publicly) as well as relevant logistical details. Recruitment, methodological, and analytical procedures were approved by the Committee for the Protection of Human Subjects at UC Berkeley. Of those invited to participate, all but two accepted. Those who declined did so due to schedule conflicts.

From within the Voces y Manos team, participants included: Macario, Oscar, and Lilian. Two UC Berkeley graduate student researchers also participated: myself and Brianna Curran, who was completing her master's thesis with Voces y Manos at the time. Roles are elaborated below.

### ***Procedures***

Focus group procedures were designed to create a warm environment conducive to exchange of knowledges (*diálogo de Saberes*) and to facilitate open communication among Voces y Manos promoters and participants. Participants and facilitators sat in a circle, on plastic chairs underneath a pergola on the Rancho El Caracol Center. Water and coffee (grown and roasted on the farm) were provided, and participants were invited to serve themselves as desired. The introduction/welcome portion included:

- An overview of the day and description of the purpose of focus groups. We explained that we aimed to understand climate change impacts, to discuss and exchange farming knowledge, and to elicit participants' feedback on the Voces y Manos project activities in which they had been involved.
- An introduction, greeting, and explanation of the role of the outside researchers (we explained that our aim was to help systematize and disseminate findings, both within the local community and in academic articles) with the assistance of audio recording devices.
- A space for expressing any concerns about recording focus groups conversations, consent and privacy procedures.
- An invocation through lighting of candles and discussion of the Nawal of the day by a member of the Voces y Manos team.
- A reminder that focus groups would be conducted bilingually (Spanish and Maya-Achí), and that participants could speak in whatever (combination of) language/s they felt most comfortable speaking.
- An "ice-breaker" activity, in which participants responded to the prompt: *what was the first thing they did when they arose in the morning?* In addition to bringing to light commonalities and differences in cultural practices among participants, this question set the stage for thinking about continuities and changes in practices over time and across generations.

At this point, we began focus group discussions around five substantive focus group topic areas. These topic areas reflect adaptations to the four general categories of questions presented in the introduction, and also reflected a secondary topical interest in climate change impacts in the territory.<sup>15</sup> These questions were the following:

- When comparing Maya-Achi life today to the way your grandparents/ancestors (abuelos/abuelas) lived, what has changed?
- How did your grandparents/ancestors (abuelos/abuelas) know when to plant crops? What were the signs they relied on to plant? Are those signs still reliable today?
- What changes have you noticed today in relation to these practices or signals? Are they still reliable?
- How has climate change affected ways of life in the community? In the family?
- What are people doing to adapt to changes brought about by climate change?

As can be noted from these questions, frequent reference was made to the lifeways of the “abuelas y abuelos” — which can be translated as “grandparents” or more expansively as “ancestors.” Given the equivocation that would be inherent in using one English term or the other, I use this original Spanish term “abuelos and abuelas” throughout, which I am told closely approximates the Achí phrase, “*ri q’ati yey q’amam*” (Clara Luz Guanché, personal communication, April 2024).

Macario was selected as facilitator of focus groups and Oscar was selected as translator based on their expertise and experience as a group facilitator and fluent Achí speaker, respectively. In general, the facilitator would pose a question in Spanish, and the translator would translate it to Maya-Achi. At this point, conversation moved fluidly between Achi and Spanish, with some variation among focus groups in the Spanish vs. Achí prevalence. Participants would frequently build on or respond to each other’s comments, and facilitators would ask probing questions to deepen discussion and/or to better understand typicality/atypicality of particular practices or perspectives. Each question was discussed for between 15-20 minutes. Facilitators did their best to balance participation levels between men and women, and at times reminded participants to do this when noticing that men were dominating discussion.

Another strategy utilized by facilitators was to vary the rhythm of group dialogue and encourage greater participation through a “pair share.” In response to the second question about ancestral practices of knowing when to plant, participants first shared with a neighbor, and then reported out their discussion topics to the full group. This proved useful in eliciting the broadest range of experiences and ancestral practices possible within the limited time available.

In addition to the facilitator and translator roles, Michael, Brianna and Lilian participated as note-takers. Lilian understands Achí fluently, so her notes focused on verbal content. At times, she posed clarifying questions. Michael and Brianna generally refrained from participating in the focus group discussion outside of the icebreaker and introduction activity, and took focusing primarily on body language, gestures, overlapping speech, and other visual cues that might not be recalled or captured in audio recordings. Outside the structured focus group portion of the research, they participated fully in the convening, offering an opportunity to deepen relationships

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<sup>15</sup> This is important in considering the generalizability of the approach. General frameworks must be adapted to fit local contexts.

with participants that they were building through their joint participation in other program activities.

Following the focus group portion of the convening, participants moved into a second activity where they provided feedback on the first year of activities in Voces y Manos; they then ate lunch, and took a walking tour of the *Finca el Caracol*, learning about its various agroecological practices.

### ***Analytic Process***

In keeping with the aims of participatory design-based research, our analysis aimed to disrupt dominant epistemologies of research “on” Indigenous people, to move toward knowledge co-construction. We understood that the decisions we made as researchers and co-designers — from organization of focus group space to the questions we asked to the way we analyzed data — actively shaped our interpretation of findings. Rather than treating focus group transcripts as transparent windows into community members’ perspectives, we viewed our role, as a team of researchers and designers, as co-constructors of knowledge. In a sense, this was inevitable insofar as the leaders of the focus groups were themselves members of the communities whose knowledge was being elicited. Recognizing this, we explicitly sought to bring to light and emphasize perspectives on the nexus of climate change, ancestral land-based practices, and climate change resilience which had generally been missing from existing academic and professional knowledge.

Critical to this process of knowledge co-construction was to leverage the diverse experience, epistemological orientations, and analytic skills of our team in a process of inter-linguistic and intercultural translation (Santos, 2015). These diverse experiences and knowledges included: currently residing in one of the communities represented in the focus groups (Oscar); speaking Maya-Achi fluently (Oscar); understanding Maya-Achi fluently (Lilian, Macario, Oscar); having extensive personal lived experience with farming in the Rabinal region (Lilian, Macario, Oscar); a higher education degree and relevant professional experience in international development or education (Brianna, Macario, and Michael); formal training and professional experience in agronomy (Lilian & Oscar); and experience with focus group and other community-based, participatory research methodologies (Macario and Michael). Notably, thinking in terms of repertoires of practice, knowledge, and experience as described above enabled us to leverage our respective abilities in a much more nuanced way than a simple “insider/outsider” dichotomy would have. Our analytic process involved the following six steps:

First, we engaged in a “full-team” analysis process. One to two days after each focus group was conducted, the research team listened to the audio recordings of focus groups from start to finish, pausing the recordings, typically after each turn of talk, for summary and discussion. When comments were made in Achí, Oscar, Lilian, or Macario would provide a summary/translation, including providing any relevant background information to contextualize comments. During these discussions, team members would rotate taking abbreviated transcriptions (in Spanish, noting key Achí phrases), using a collaborative, online word processing platform so that other team members could follow along. Other team members would add annotations to the abbreviated transcriptions as they were being generated, highlighting key insights, questions, or connections. In addition to attempting to capture general meanings, we were also focused on capturing “*frases de oro*,” (a golden phrase, or particularly insightful, pithy comment). When a team member identified what they believed was a “*frase de oro*” we would

copy down that phrase word for word, in the language in which it was spoken. Once discussion of a particular thematic topic area was wrapping up, the team would pause to write short, bullet point summaries of key insights with respect to that thematic area.

Second, after each focus group had been analyzed individually, the analysis team divided into two smaller groups to produce summary memos synthesizing key themes which emerged from the “lower region” and “area Alta,” respectively. These results were shared internally at a Voces y Manos staff meeting.

Third, audio recordings were bilingually transcribed (Spanish language comments were transcribed verbatim in Spanish; Achi language comments were transcribed verbatim in Achí and translated into Spanish) by a local professional with formal training in sociolinguistics, who had not been present in the focus groups. Michael and Brianna then conducted a secondary round of analysis of these transcripts, inductively coding them using the MaxQDA (VERBI Software, 2021). Cross-referencing our coded segments with summary memos described in step two, we then wrote English-language summary memos, oriented toward the international research community, highlighting key themes and illustrative quotations for each focus group. Brianna and Michael met on a weekly basis to compare coded segments to compare their summary memos and to check coded segments for inter-rater reliability.

Fourth, Brianna and Michael each produced a summary memo, encompassing key quotations and findings from all four focus groups. We again met to discuss key themes, and how to best present these themes to an outside research audience.

Fifth, Michael and Brianna drafted an initial findings section for our English language report, including key quotations, and back-translated this into Spanish. We presented this to the Voces y Manos collaborative research team for their review and evaluation of accuracy, completeness.

Finally, to use findings to further the participatory program design, we are planning to reconvene with community members in July, 2024, to present back/verify results with them, and to elicit their participation in the elaboration of the next three-year phase in the project. (2024-2026) of the project.

## **Findings**

How did the abuelos and abuelas care for the land? How and to what extent are these land relationships still enacted today? Below I discuss continuities and changes in two key dimensions of Maya-Achi farming: practices connected to the land and practices connected to seeds. I then discuss what these changes mean for community and family *convivencia* (often translated as “conviviality”), defined by Aceves-Azuara, Rogoff, and Navichoc (forthcoming) as “an organic form of togetherness, mutual supportiveness, and harmonious shared activity” (p. 2). Findings highlight three general themes with respect to community perceptions of changes in milpa farming: declining autonomy, reduced *convivencia*, and changing ethics at the nexus of what could be loosely called environmentalism and ancestrality.

### ***Practices and values connected to abuelas/abuelos ways of working the land***

When discussing farming in the time of the abuelas and abuelos, participants consistently spoke with respect and admiration for their ability to farm without relying on agrochemicals. In these discussions, the phrases “*solo a azadón*” (only by hoe) and “*sin nada de químico*” (without any chemicals) emerged repeatedly. These practices were understood as being much more labor-

intensive than today's practices. But, as the quotation below describes, the ancestral approach to farming was widely said to produce robust harvests:

Muy bonito lo dejaban y solo usaban azadón, nada de máquinas o químicos. Para limpiar el terreno solo usaban un azadón, para jalar y cortar el monte, nada de echar veneno al monte para matarlo, nada de dañar la tierra. La milpa nunca necesitó de abono químico, solo se utilizaba el popó de las gallinas. Se tiraba debajo de cada mata de milpa y listo.

*[The abuelas and abuelos] left the land beautiful and they only used a hoe, no machines or chemicals. To clean the plot, they just used a hoe to get rid of the brush, no poison to kill the weeds, no damaging the land. The corn fields never needed chemical fertilizer, they just used chicken poop. They threw it beneath each corn plant and done!*

Here we see a clear illustration of two key aspects of the abuelas/abuelos' farming practices which emerged repeatedly. First is their practice of applying organic fertilizer, such as chicken manure, to the milpa fields. It was often remarked, with admiration, that this was all that was needed for bountiful corn harvests, whereas today, it is widely believed that robust harvests can only be achieved with the application of synthetic fertilizers.



Figure 4: Milpa system with integrated corn and beans Photo  
Credit: Lilian Marleny Bolvito González

The second aspect of the abuelas/abuelos' farming practice is the phrase "solo a azadón," which refers to the labor-intensive practice of removing weeds by machete and by hoe, without the assistance of chemical herbicides. Before the time when herbicides were widely used, nutritious native varieties of herbs, vegetables, and medicinal plants—such as *chipilín* (*Crotalaria longirostrata*), *macuy* (*Solanum nigrescens*), *bledo* (*Amaranthus retroflexus*) and *miltomate* (*Physalis ixocarpa*) and a wide variety of squashes and legumes—would grow in abundance amidst the corn fields. At times, these native herbs and vegetables were planted intentionally; at other times, they would simply sprout up as volunteers. This meant that farmers had ready access to a significant diversity of vegetables and herbs, and they were less dependent on purchasing vegetables in the market. Describing farming practices from her childhood, before the introduction of the herbicide gramoxone (brand name for Paraquat, a highly toxic herbicide), one participant from the valley region described her experience in this way:

Ni siquiera conocíamos el gramoxone. . . no usamos veneno porque ya ve que nuestros abuelos sobrevivieron a lo natural, solo bastaba con un trabajo limpio, entonces si ellos pudieron, nosotros también podemos le digo yo. . .Nosotros antes sembrábamos cebolla, macuy solo para nuestra alimentación en el hogar, nada de ir a comprar al mercado. ¡Nosotros no sabemos que es ir al mercado y regresar con un manojo de hierbas!

*We didn't even know gramoxone...we didn't use poison because our abuelos survived the natural way (a lo natural), it was enough to do a good clean job, so, I say, if they could do it, we can do it too...We used to grow onion, macuy, to eat at home, no going to the market. We didn't even know what it was to go to the market and return home with a handful of herbs!*

The absence of chemical herbicides and the integration of native plants and herbs within the milpa system were widely seen as contributing to past generations' health, longevity, and wellbeing. By eating simple meals of crops produced on one's own land ('no going to the market') without chemical herbicides, the abuelas and abuelos were perceived to be much healthier than people today. "Antes, no sabían que [era] diabetes...gastritis / Before, they didn't even know what diabetes...gastritis were," one participant said of his parents' and grandparents' generation. This was understood as the result of producing and eating food 'the natural way.' By contrast, illnesses like cancer and diabetes were seen as being widespread today. Participants attributed this increase in disease primarily to dietary change from more natural to more processed foods, and to the increased use of agrochemicals.

### ***Practices and values of the abuelas/abuelos in connection with seed saving***

In both sets of focus groups (comprising the valley and mountain regions), the practice of seed saving emerged as a deeply revered ancestral practice which was also described as being at risk of loss. The practice consists of, first, identifying corn plants with desired qualities. Then, ears of corn from selected plants are placed to dry by hanging them from a high beam in a covered area of the home. Once corn is dried and threshed, robust grains from the mid portion of the cob are placed inside a clay jar to be planted in the upcoming harvest season.



*Figure 5: Native Corn hanging to Dry. Photo Credit: Lilian Marleny Bolvito González*

Participants highlighted myriad reasons why this practice of saving native seeds was particularly cherished. First, unlike hybridized seeds which come in only a few varieties and colors (white and yellow), there is an enormous variety of types of native seeds comprising four color groupings (white, yellow, red, and black), each corresponding to specific culinary dishes. For example, black corn is particularly rare and highly valued, in part because it is used to make a sweet beverage – *atol xuco* – with a distinct blue-pink hue, as well as blue tortillas. Significantly, each of these four colors corresponds to one of the four cardinal directions on the Mayan calendar.

Participants also emphasized that, thanks to many generations of seed selection and replanting, native seed and plant varieties (landraces) have become particularly well adapted to local climatic conditions. They therefore have many beneficial properties, such as resisting drought in the fields and resisting decay during storage. In addition to corn, native varieties of beans – such as the *frijol jaz*, or *Ixkarawa'n* – were also deeply valued for their culinary properties and strong suitability for local ecological niches. These native varieties of corn and beans were said to produce robust harvests, which enabled the abuelos and abuelas to produce abundant corn and beans and enjoy good health. As one participant reported:

Nuestros antepasados—ellos clasificaban mucho su semilla y ellos no sufrían nada de hambre, porque la verdad es que ellos cosechaban bastante.

*Our ancestors – they selected their seeds a lot, and they didn't suffer any hunger at all, because the truth is that they harvested quite a lot.*

Perhaps the most frequently cited advantage of native seeds was that unlike hybridized seeds, native seeds can be harvested and replanted year after year. In contrast, hybrid seeds, often referred to by the terms given to them by agricultural supply stores — “*semillas mejoradas*” or “improved seeds” — must be purchased on a yearly basis from agricultural supply stores at a significant cost to farmers.

Finally, native seeds were reported to have the advantage of producing more abundant dough after nixtamalization<sup>16</sup> (the process of boiling corn kernels with lime to produce the dough known as *nixtamal*), thus producing more tortillas, which were said to be more filling and more nutritious. Significantly, this quality of abounding more (*abundando mas*) was due to the observation that native seeds have the property of “*U'k'ux*,” which is often translated as “heart” or “essence” (Garcia & López, 2023) As Doña Francisca said:

la mazorca tiene su corazón [o uk'u'x la jal], su abundancia. No es como solo comprar un quintal de maíz porque rapidito se va, y se imaginan en una semana, ¿en dónde iría a traer esos 200.00 quetzales? Me tendría que meter a préstamos o buscar que hacer para tener mi quintal de maíz. En cambio si sembramos, ahí tenemos abundante mazorca; solo es cuestión de agarrar cuando lo necesitemos y ni siquiera sentimos el gasto.<sup>17</sup>

*The ear of corn [la mazorca] has its essence [Uk'u'x], it's abundance. It's not the same as a quintal of purchased maize, because it goes quickly, and where am I going to get 200 quetzales [around 25 dollars, the cost of a quintal of maize]? I would have to go into debt or see what I can do to get my quintal of corn. On the other hand, if we grow [our own], we have abundant corn and it's just a matter of grabbing some when we need it, and so we don't even feel the cost.*

As described by Maya scholars and linguists Ajpub' Pablo García and Saqijix Candelaria López (and poetically expressed by singer-songwriter Sara Curuchich in the epigraph quotation) the property of *uk'u'x* is not limited to corn, but is found in lakes, rivers, mountains, the skies, and the wind, seeds, animals, and human beings. The fact that all these entities have this quality of *uk'u'x* implies they are alive, and this requires human beings to coexist with them in balance and equilibrium (Garcia & López, 2023). In Doña Francisca's account, this ineffable property of *Uk'u'x* leads to a distinct material advantage of producing a greater volume of dough compared to store-bought corn which “goes quickly” (“*rapidito se va*”). This is important because native corn varieties produce noticeably smaller ears which would make them appear to produce less food, an appearance focus group participants insisted was deceiving.

In addition to discussing advantages and disadvantages of native seeds, focus groups also brought to light an array of spiritual practices connected to the saving and planting of native seeds, which also reflect the understanding of the animacy (Kimmerer, 2013), and sacredness of seeds. These practices included: bringing seeds to sacred sites to have them blessed by the local Catholic priest; lighting a candle and asking permission of Mother Earth prior to planting; and

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<sup>16</sup> Nixtamalization (which is, gloriously, a word in English!) also makes niacin bioavailable, a process which is generally credited with sparing Indigenous Peoples of the Americas from debilitating outbreaks of pellagra from niacin deficiency that plagued many generations of settlers to the western hemisphere.

<sup>17</sup> The original Achi is presented here, with thanks to Leydi Mendoza: *o uk'u'x la jal o chiri' na e ta la xa jun kintal. La xa' k'ama' la ju kintal ii ya ya ke'eek. We xk'is la jun kintal jay jinta la Q. 200.00, pa kamawi, sa' ka'ano, tiene ke katzukuj, ka'an chaq'iib' para ke utz kaya la jun kintal chiri' en cambio la qatij qaq'iij pa q'alaj porque o chiri', mutzul la qajal o chiri' xa qama' loq, kana' taj*

leaving seeds beneath an altar for 1-2 weeks before planting. Doña Concepción from the valley region described how seeds were sanctified in altars in this way:

Dejaban su maíz bajo el santo ya como unos 8 días o 15 días. Dice que lo dejaba ahí donde está el altar, entonces abajo como ellos hacían un altar de adobe, entonces lo dejaban su semilla ahí abajo entonces y pedían a Dios.

*They would leave their seeds in an altar for like one or two weeks. They say they left them there where the altar is, and so below it, since they made an altar of adobe, they left their seeds there and they prayed to God over them.*

Doña Dominga from the mountainous region described her grandfather's practice of bringing seeds to a sacred site in the neighboring municipality of El Chol for them to be blessed by a priest:

Ya cuando él va a hacer antes la misa, va a hacer en abril, él va un mes antes [de la siembra]. Entonces ya viene del Chol y los deja [las semillas] allá bajo el altar. No es como ahora que curamos la semilla [con insecticida]...antes no se cura la semilla, solo así [se sembró]. Ya llegó el mes que va a sembrar, y va a sembrar. Deja puesta su candela y se va. Lleva su cubo, todo, va a sembrar. Ya cuando ya sembró y la milpa ya salió, lo llega a ver pero él ya no echa abono, solo así, la tierra pura, la madre tierra.

*He would go do a mass, he would go in April, he would go to El Chol, and leave the seeds in an altar there. It's not like now, where we treat the seeds [with insecticide]...Before, they didn't treat the seeds, [they planted them] just like that. When the planting month came along, he would go to plant. He would light a candle and go. He would bring his digging stick (el cubo), everything, he would go plant. Then when the corn plant sprouted, he'd go to see it, but he wouldn't put fertilizer on it, he'd leave it just like that, the pure earth, the mother earth.*

As with the residents of the valley region, those from the mountain region identified numerous sacred sites where seeds would be taken to be blessed before the planting season. These rituals were described as granting the seeds the qualities of “wisdom and strength.” In place of these spiritual practices, today new treatments are applied to seeds prior to planting. Doña Dominga explained that today, most farmers carry out a process of “curing” or treating their seeds with an insecticide prior to planting, in order to prevent the seeds from being eaten by birds and insects. The practice of applying chemicals to seeds prior to planting them was starkly contrasted to the spiritual practices of their abuelas and abuelos, and, in fact, were seen as largely having replaced the practice of applying blessings onto them.

It is noteworthy that these two practices – blessing seeds at sacred sites and also applying a chemical pesticide to them – did not coexist; instead, the latter seemed to have replaced the former. It is also noteworthy that Doña Dominga described her grandfather's practices of blessing the seeds as part of one integrated narrative that also emphasized his rejection of chemical fertilizers and reliance only on “the pure earth, the Mother Earth” for growing crops. These suggest important continuities between seed saving practices, spiritual practices connected with seeds and the land, and a general ethical commitment to protecting the earth from practices and substances that cause harm.

### ***Changing Practices Connected to Seeds: Causes and Meanings***

Despite the many reasons why native seeds are highly valued, participants still described them as being at risk of loss, with many varieties only grown by a handful of individuals. What explains this loss of native seeds? Amidst increasing erratic weather patterns and heavy winds,

participants did note one unmistakable advantage of hybridized corn seeds: they produce a sturdier stalk which is better able to withstand windstorms. The robustness of the corn plants produced from “improved” seeds was believed to be a major reason why they have become more popular than native seeds. In addition, store-bought seeds were also seen as being more accessible to non-expert or part-time farmers, for whom it is less demanding to simply purchase seeds from the store than to carry out the lengthy, knowledge-intensive processes of saving seeds. The heavy marketing of hybridized seeds was also said to have contributed significantly to the propensity of many Rabinalences to purchase them (discussed further in the next chapter). Finally, extensive crop failures – increasingly common due to climate change — were another major factor behind the loss of native seeds. After a drought year, the limited corn available would be needed for consumption, leaving few seeds left for saving.

One group was particularly singled out for their culpability in the loss of native seeds: “professionals.” Due to their experience participating in formal schooling and professional jobs which provided expendable income and limited their time for farming, this group seen as being particularly enthusiastic adopters of new technologies like hybrid seeds. Doña Concepción from the valley region said:

Nos estamos jodiendo, porque que hace el profesional? Busca la manera más fácil para cultivar la tierra. Ya viene uno, esta ganando su dinero, “voy a poner maquina” ¿verdad? . . . “ya voy a ir a comprar la semilla mejorada.” ¿Y que le damos valor ahí? y esa semilla . . . trae, químico...¡aaaah! . . . en cambio la maíz criollo como sale chiquito la mazorca nosotros lo dejamos porque no lo valoramos lo que temenos.

*We're screwing ourselves because what does a professional do? He looks for the easiest way to cultivate the land. He comes along, he's earning his money, "I'm going to install a machine," right? "I'm going to go buy improved seeds." And what are we valuing there? And that seed...carries chemicals...yes! On the other hand, native corn, since it produces a smaller cob, we leave it behind because we don't value what we have.*

Thus, while all community members were seen as susceptible, professionals were seen as particularly apt to abandon old practices in favor of the new, and particularly culpable for the loss of native seeds. Doña Concepción's comments also reveal an axiological stance as to what the loss of native seeds *meant* to many Maya-Achi farmers: a devaluation of that which is one's own, “*lo que temenos* / what we have.” In other words, the quote indexes the value granted to — and even the identification with — native seeds, as well as a highly skeptical stance toward new tools and technologies, particularly exogenously produced seeds.

Like the practice of seed saving itself, the ceremonies over the seeds were characterized as quickly being lost, despite being deeply valued. When describing the ceremonies performed over seeds, most people used phrases such as “*cuentan los abuelos...*” (the grandparents tell us. . . ) or “*yo me acuerdo*” (I remember...) which seemed to be referring to a distant past. However, when we asked participants directly whether seeds were still taken to sacred sites, placed in altars, or blessed, most community members could recall at least a few individuals from their communities who still practiced these traditions. Communities thus maintained these practices, just not nearly to the extent of prior generations. Unfortunately, some of the few individuals who maintained traditional spiritual practices were ostracized by others in their communities for practicing “*brujería*” – witchcraft.

When we asked participants directly why so few people today practiced the ceremonies of ritually blessing their seeds, most responded by pointing to differences in the faith and spirituality of Rabinalences' today versus in the time of their *abuelas* and *abuelos*. Whereas

previous generations were described as having deep faith in seed ceremonies, younger generations were said to have less faith, less patience, and less time available to participate in ceremonies over their seeds. In addition, the increased prevalence of treating seeds with insecticide (itself seen as a response to the increasing aggressiveness of pests) was said to have led many to believe that this treatment was all that was required to prepare seeds for planting. This practice seemed to have largely replaced the practice of ensuring a good harvest by means of ceremonially blessing seeds. The stigmatization of traditional practitioners was also likely a major factor.

What was the significance of these changing practices connected to native seeds in the eyes of participants? One theme that clearly emerged was a perceived loss of autonomy, and perhaps, cultural identity, though the latter was rarely stated directly. Don Fernando explained that:

Nuestros antepasados sacaban sus semillas. Los guardaban y lo volvían a resembrar para salir de nuevo. Pero ahora los agroservicios nos sacaron una mejor semilla — decimos que es la mejor, entonces nosotros mismos hacemos que nuestra semilla ya no se difunda sino vamos al agroservicio y compramos dos o tres libras (de semillas)...bueno! ... ahí ya no sacamos semilla, la semilla se perdió.

*Our ancestors selected their seeds. They saved them and they replanted them, so they'd grow again. But now, the agricultural supply stores have given us a better seed – we say it's better, so we ourselves are causing our native seeds not to spread, because we go to the agriculture supply store and we buy two or three pounds (of seeds), and, good! ... and from there we don't harvest our seeds anymore, the seeds were lost.*

Many participants like Don Fernando expressed the viewpoint that “improved seeds” ultimately lead only to poverty and dependency, whereas native seeds enable greater freedom from the need to purchase foodstuffs in the market or seeds from the agricultural supply store.

Also like Don Fernando, many resented agricultural supply providers for peddling harmful products, while reserving their sharpest criticism for their fellow *Rabinalences*, whom they blamed for being duped into buying the so-called “improved varieties.” On one level, Don Fernando’s comments can be read as community members blaming themselves for the loss of native seed varieties. Indeed, this points to another major theme: community divisions. While this theme will be discussed more in later chapters, for now it is important to highlight the role of religious institutions – particularly the rising Evangelical movement – in leveling accusations of “witchcraft” against practitioners of Maya spirituality. Such accusations have led to significant community discord and threatens to accelerate the loss of traditional knowledge and practices.

Beyond community divisions, however, another way to read Don Fernando’s comment is as a pragmatic response to power structures perceived to be outside of community members’ control. Unable to realistically change transnational companies’ marketing practices in the short-term, community members’ resilience—as a practical matter—meant assuming responsibility themselves for preserving their native seed varieties. Furthermore, the criticism itself — much like Doña Concepción’s previous comment “*nosotros lo dejamos porque no lo valoramos lo que temenos* / We leave behind [our practices] because we do not value what we have” — indexes an axiological commitment (e.g. “we *should* value what is ours!”) which reveals how deeply native seeds are valued within the Achí cosmovision. Although the terms “autonomy” or “food sovereignty” were not used directly in conjunction with seed saving practices, this was a predominant theme the Voces y Manos team identified our analysis of the importance of saving native corn landraces within the Maya-Achí community.

## *Changing Practices of working the land: Causes and meanings*

Today, participants noted significant changes in practices of working the land. Chemical fertilizer is now widely applied. Instead of clearing the land with hoe and machete prior to planting, residents primarily use the toxic herbicide glyphosate (Monsanto's Roundup®), or the even more toxic herbicide paraquat (Syngenta's Gromoxone®) applied with a backpack sprayer, to clear the land of weeds prior to planting.



*Figure 6: Backpack sprayer, photo courtesy of Lilian Bolvito Gonzalez*

Because glyphosate is engineered to target broad-leafed plants growing close to the ground (i.e., non-corn plants) and paraquat essentially destroys all vegetative matter upon contact, the application of either of these herbicide makes it extremely difficult or impossible for farmers to intersperse herbs, vegetables, and medicinal plants within their milpa fields, as their parents and grandparents did. This new, chemical-intensive system of farming was summarized by Doña Rosa of the valley region as follows:

Nosotros también sembramos, pero sí usamos veneno. Usamos abono [también] porque sin eso la cosecha ya no se da, lo que hacemos nosotros es echar veneno a la tierra antes de sembrar. Eso es para matar el monte. Ya después de eso empezamos a sembrar y luego a echar abono para que de buena cosecha.

*We also grow, but yes, we use poison. We use fertilizer [also] because without that, the crops won't grow. What we do is use poison on the land before planting. This is to kill the weeds. Then afterwards we start to plant, and then we apply fertilizer, so that we have a good harvest.*

As is common in the territory, the term “veneno” (poison) is used here to refer to pesticide. Doña Rosa explained the new farming practice involves an initial application of *veneno* to “clean” the land by chemically burning down all the weeds. Several days after herbicide application, corn seeds are planted. And then, at several intervals throughout the corn's growth cycle, farmers apply fertilizers, and occasionally spray with insecticide.

Why did participants report that synthetic fertilizers were so commonly used, if their grandparents' system of farming was seen as being so effective and healthy? As was the case with Carey's (2009) study of agrochemical uptake among Kaqchikel farmers, this phenomenon was typically described in terms of the land had become “*acostumbrado* / accustomed” to fertilizer application, meaning without fertilizer application, the land would no longer produce.

Pienso que a través del tiempo las personas acostumbraron a la tierra con el abono [químico] y por tal razón nosotros ahora tenemos que usar abono para cuando sembramos milpa.

*I think that over time, the people accustomed the land with [synthetic] fertilizer and for that reason, we must use fertilizer to grow.*

Whereas in previous generations, relatively fertile soils were said to produce corn and other crops with the modest nitrogen inputs of animal manures and backyard compost, today's

depleted soils were said to only be capable of producing with more concentrated synthetic fertilizers. Participants noted a vicious cycle of diminishing returns at work, with ever-more frequent applications of fertilizer necessary to achieve the same (or reduced) yields. Furthermore, with relatively small plots of 1-2 hectares, there was no clear way out of the trap: family farmers did not see themselves as being able to let the land lie fallow to recuperate its fertility. This also directly parallels Carey's (2009) account of the Kaqchikel experience of being trapped in cycles of fertilizer dependency.

The explanation for the rapid uptake and now widespread use of herbicide is connected to but distinct from the process of synthetic fertilizer uptake. At the most basic level, herbicides are applied because participants reported they save an enormous amount of time and energy compared to weeding by means of hoe and machete. Participants explained that a weeding task which might take three days to complete by hand might take just three hours by applying herbicide in a backpack sprayer. Few people today are willing or able to put in the time and energy to cultivate by hand, when an inexpensive substitute is widely available.<sup>18</sup> Contrasting today's practices to those of his parent's generation, Don Gilberto from the valley region explained the practice in these terms:

[Nuestros abuelos] lo cultivaban, lo limpiaban con azadón, con piocha un montón de cosas. Nosotros que hacemos ahorita, es mejor ir al agroservicio, ir a comprar veneno y al nomas que salga un monte y ¡Fuun! [sound of a backpack sprayer accompanied by rapid hand gesture] ¡A fumigar!

*[Our grandparents] cultivated, they cleaned with a hoe, with an pickaxe, a bunch of things. What do we do now? We go to the ag supply store and buy poison and as soon as the weeds pop up, vrooom! [sound of a backpack sprayer accompanied by rapid hand gesture] Spray them!*

Participants explained that prior to the incorporation of glyphosate and paraquat into farmers' repertoires of practice, the entire family would pitch in to complete the tedious task of weeding and clearing the land prior to planting. When the family's efforts were not sufficient, they would hire *mozos*, or local day laborers—typically neighbors, friends, or family members—to help complete the job. However, when migration to the global North (which had already been widespread prior to 2020) accelerated during the Covid-19 pandemic, this paid, or family labor became much scarcer. Under these conditions, the dependency on agrochemicals increased to the point that most Rabinalences felt that there was no practicable means of farming without them. As one participant said:

Ahora tenemos que agarrar el químico. Mantenemos con el químico. ¿Por qué? porque ya no hay quien va a ir a mozear, que me ayude de trabajar. . . Desde ahorita eso es lo que más está afectando y por esa misma razón nosotros compramos esa insecticida [sic], porque ya no hay auxilio; ya no hay ayuda para que nos ayude

*Now we have to go for the chemicals. We maintain ourselves with chemicals. Why? Because now there's nobody to do day labor, nobody to help me work. Now, this is what's affecting us, and for this reason we use the insecticide [sic], because now we don't have any help, anyone to help us.*

Thus, glyphosate and/or paraquat were understood as a necessary evil; so necessary that people saw themselves as “maintaining themselves” with it. In no way was this a reflection of lack of knowledge of its health or environmental consequences, upon which participants elaborated in great detail. Participants linked agrochemicals to the increasing prevalence of pests,

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<sup>18</sup> Subsequently, I verified that approximately that glyphosate could be purchased for 250 GTQ per gallon, or roughly 33 USD. This amount is sufficient for application on the average 3 acre farm).

or “*plagas*” affecting their crops and to the fact that today, there are fewer fish, crabs, and other shellfish in rivers. They understood agrochemicals being largely responsible for the significant decrease in the variety of crops that can be integrated into the milpa system. And, consistent with a growing body of Western scientific research, they also linked these chemicals to numerous diseases which seem to be becoming more common, like cancer. However, lacking the assistance of family members or *mozos*, glyphosate and paraquat have come to be seen as “*nuestro único auxilio*” — “our only aid.”

### ***Recuperation of Ancestral Practices***

Rabinalences have not responded passively to the threats they have identified to the ecology, to public health, to the genetic diversity of native plant varieties, or to the milpa system in general (whose meaning exceeds these categories of environment, health, and genetic diversity). In recent years, ancestral farming practices have begun experiencing something of a resurgence under the leadership of the farmers’ association ACPC and the NGOs Q’achuu Aloom, Voces y Manos, and Asociación 13 de Marzo. These groups have supported the creation of community seed banks, the distribution of native seeds to farmers at free or low-cost, and increasingly, the development and dissemination of organic fertilizers and insect-repellents made of inexpensive, nontoxic, locally available materials. Thanks to their involvement in Guatemala’s national food sovereignty network, they have also increasingly worked together to advocate for the protection of Native seeds against repeated attempts to grant patent protection to genetically modified seeds through a so-called “Monsanto Law” (See Grandia, 2017, for a discussion of an earlier iteration of nationwide resistance to the proposed Monsanto Law).

This work of seed saving and seed protection has by no means been easy. Advocates often spoke with frustration at the difficulty of getting their neighbors to change their practices, especially with respect to synthetic fertilizers, herbicides and pesticides. Yet somewhat paradoxically, the global crises of climate change, an unprecedented global pandemic, and war have led some Rabinalences to hear the pleas of agroecology advocates with a different ring. During the Russia-Ukraine war, disruptions to global supply chains caused the cost of synthetic fertilizer to increase by more than two-fold, revealing for many the inherent vulnerabilities of dependence on external farming inputs. This led growing numbers to listen to the appeals of advocates to revalorize ancestral ways of farming. When asked what they would do if costs of fertilizers continued to rise, one participant from the valley region simply said: “*Ya no vamos a comprar. Ya vamos a valorar como hacen nuestros antepasados / We won’t buy it anymore. We will value how our ancestors farmed.*”

In this vein, many expressed that if costs of fertilizers continue rising, people will have no choice but to once again use natural sources of fertilizer. Significantly, this is framed not in the language of a newfound interest in organics, but rather in the language of “valuing what our ancestors did.” Across focus groups, there was a strong connection articulated between environmental sustainability, autonomy, and recuperation of ancestral practices, or “how our ancestors used to farm.”

### ***Changes in Convivencia and Children’s Participation in Farming***

Although eliciting understandings of changes in convivencia was not one of our original aims, we noticed that the term “climate change” was interpreted broadly, to encompass not only changes in the natural ecology but also in community and inter-generational relations. This latter

kind of climate change turned out to be critical to a full understanding of the impact and meaning of agrochemical adoption in the territory. Consider how Don Gilberto, from the valley region, recollected his experience farming as a child: “*Nos dió armonía estar en el cerro (sembrando), porque pudiste ver tu cosecha. Fue como un sueño!* / It gave us harmony being up in the hillside (planting) because you could see your harvest, it was like a dream!”

The “good old days” were frequently discussed as involving minimal stress, lots of hard work, and a degree of certainty that one’s labor, faith, and respect for the environment would produce a bountiful harvest. This seemed dream-like in comparison to today’s conditions, marred by worries about whether one’s harvest would be adequate to recuperate the high costs of farming inputs, whether one’s harvest would be destroyed by a storm or a drought, or whether one might be poisoned by agrochemicals. This is not to say that *convivencia* is absent from contemporary practice altogether, but that it is certainly colored — if not undermined — by the generalized sense of precarity, particularly among those in the valley region facing more severe water scarcity than those in the mountains.

Changing practices were often talked about in concert with changing values. For example, it was remarked that *abuelos* and *abuelas* would only cut a limited number of dry branches for their firewood, due to their great respect for nature. Today, in contrast, participants accused fellow *Rabinalences* of cutting down large branches or entire trees with chainsaws, without regard for the quantity they were chopping or for whether they were cutting dead branches or living trees. (In fact, about halfway through one of the focus groups, the sound of a chainsaw could be heard in the distance.) This practice of unrestrained cutting of trees was seen as a violation of the reverence the *abuelos* and *abuelas* held for Mother Earth, and many remarked that such destruction was causing them “*una gran tristeza / A great sadness.*” The changing practice around cutting firewood can thus be considered a change in *convivencia* in the human-nature relationship, associated with a loss of the value of respect for the natural world. It was also a source of community division between those who see themselves “respecting the environment” and those perceived to be “doing things the easy way.”

Directly mirroring this discussion of cutting trees for firewood, use of agrochemicals was also associated with changes in *convivencia*. That is, unrestricted use of agrochemicals was seen as a betrayal of lessons of respect for the environment taught by past generations. As Don Miguel Iboy stated:

Otra cosa, no es por hablar mal de nuestros vecinos y disculpen, pero hay personas que siembran miles y millones de siembras con veneno y no les interesa para nada los insectos y otros animalitos que habitan en este santísimo mundo.

*One other thing, and it’s not to speak badly about our neighbors and forgive me, but there are people who grow thousands and millions of crops with poison and they don’t care at all about the insects and other little animals that inhabit our blessed world.*

At other points in the focus group dialogue, Don Miguel doubled down on this point, by emphasizing that a key lesson taught by the ancestors—that all life was to be respected—was now being forgotten. Agrochemicals thus changed the relationship of *convivencia* between the farmer and the life forms inhabiting the soil and the broader ecosystem, and, once again, provided a source of conflict between those who saw themselves as respecting the environment and those perceived as abusing it.

Use of agrochemicals also impacted *convivencia* within the family. By enabling parents to complete farm tasks more quickly, they made children’s participation in farm work optional.

It was remarked that, as a result, children today have far less knowledge of farming, and that they no longer get to enjoy the sense of peace and harmony that older generations fondly recalled from their own childhoods. One participant commented:

los jóvenes [de hoy] ya no conocieron tiempo de antes, sin abono, sin ninguna clase de químico o sea que nosotros vivíamos de la pura naturaleza bendito sea Dios.

*Children [today] did not know the earlier times, without fertilizer, without any type of chemical, you know, the way we lived off the pure nature, blessed be God.*

In addition to agrochemicals, declining children's participation in farming was attributed to their growing participation in other practices, especially formal schooling, which since 2020 has become increasingly technologically mediated. None of this suggests that participants disproved of their children's attending formal schools — to the contrary, most participants viewed young people's participation in formal schooling quite favorably. Many women remarked that today, girls' lives are much better than when they were growing up, thanks to the new opportunities afforded by schooling and changing societal norms around the age of marriage. At the same time, they noted that growing school demands (to complete homework, to attend supplementary computer classes, etc.) left children too little time to participate in family affairs, such as farming. Particularly since the Covid-19 pandemic, there has been a growing sense that youth are now spending inordinate amounts of time with technology, and that this has distanced and disconnected them from their families and their culture.<sup>19</sup> Quite similarly, Aceves-Azuara, Rogoff, and Navichoc (forthcoming), document a perceived loss of convivencia and cultural practices in the Maya-Tz'utujil community of San Pedro, La Laguna, partly associated with children's participation in formal schooling and their use of digital technologies.

In response to these threats to cultural continuity, some families are taking it upon themselves to make sure their children become involved in farming, and they see no reason why participation in schooling should preclude them from doing so. As Doña Herlinda expressed,

yo pienso, cuando los niños desde pequeños lo tenemos enseñado, no importa. Si tienen estudios tienen carrera, no importa, lo importante es que ellos tienen un poco espacio para ir a ayudarnos. Se van (al campo) ¿Por qué? Porque sabe ya como para trabajar, como para hacer.

*I think, when the children from an early age are well taught, it doesn't matter. If they have studied if they have a profession, it doesn't matter — the important thing is that they have a little space to help us. They go [to the field] why? Because they know how to work, how to do things.*

Many parents expressed this view that the antidote to children's loss of knowledge of farm work was simply make a point of including them in agricultural work. This meant not accepting the excuse of children having “too much homework,” but rather making sure that at least some of children's and adolescents' time is devoted to participation in the work of the

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<sup>19</sup> Though not part of the focus group, one parent commented to me bitterly: “nuestro celular fue ir a traer leña, ir a llevar los animales a pastorear,” (“our cell phone [i.e., the thing that kept us occupied] was to go cut firewood and take the animals out to pasture.) She expressed frustration today, children barely know how to cut firewood, work with animals, work the land, or show respect for their parents by pitching in and helping without being asked.

household. As Doña Herlinda voiced, once children develop a habit from an early age of pitching in (Rogoff & Mejía-Arauz, 2022) whenever the family works on the farm, it will stick with them.

## Discussion

Having presented above a discussion of cultural practices connected to milpa farming and how these practices are changing over time, I now turn to the implications of these changing practices. How might we interpret the meaning of the identified changes, in light of what we learned about the Maya-Achi cosmology? What would the professional vision of development fail to grasp, in its interpretation of these changes? Finally, how might these considerations inform pluriversal design practices?

### *What lies beyond the Development Gaze: Cultural Continuity and Change in Maya Achi Farming*

In broad strokes, our analysis indicated that participants' perceptions of changes in milpa farming practices can be summarized in terms of three primary themes: declining autonomy, reduced *convivencia*, and changing ethics at the nexus of environmentalism and ancestry. Each of these themes were reflected in the deep respect that participants voiced for the abuelas' and abuelos' work ethic, spirituality, and sustainable practices of taking care of the earth, and the sense that these practices, values, and ways of life are in decline today, to the detriment of communities' wellbeing.

The value of autonomy was indexed in participants' reverence for the abuelos' ability to live largely independently from the global economy. The fact that the abuelos used native seeds they had saved, and fertilizers made from local inputs, meant that they were not dependent on agricultural supply stores, and did not have to cope with the stress of recuperating up-front investments in their harvests. This aspect of autonomy was closely linked to the observation that the abuelas and abuelos rarely needed to go to the market to buy food, as they primarily ate food grown on their land.

The value of autonomy was also evidenced in the way participants describe how they could best respond to rising costs of fertilizer. "Valuing what our ancestors did" (*valorizando lo que hicieron nuestros antepasados*) was the phrase commonly used to describe the process of switching from synthetic back to organic, locally produced fertilizers. While participants did not unilaterally reject all exogenous technologies or tools, they generally regarded them with skepticism, as their experience had shown that they often produced dependencies which enriched outsiders at the Maya-Achi communities' expense. This was evident in their sharp criticism of "professionals" within their communities, whom they saw as devaluing ancestral practices and uncritically embracing outside technologies.

Given the centrality of milpa farming to the Maya-Achi culture, it is no surprise that changes in the practices of milpa farming were seen as producing *changes in convivencia* — the practices that inscribe connection to one's culture, land and sense of place. In our analysis sessions, the Voces y Manos team remarked that harmony, peace, and tranquility were terms used to describe past farming experience, and that these terms were no longer applied to describe farming in contemporary times. The new experience, in contrast, was usually described in terms of risk management, uncertainty, and the fear of debt. Tied to this, increasing dependence on agrochemicals, greater involvement in formal schooling, and higher rates of migration meant that farming was increasingly a solitary endeavor. At the same time, this very loss of *convivencia*

prompted growing interest in, and concerted efforts to, recover ancestral practices and to involve young people more in these practices.

Finally, there was a consistent and striking connection between discourses of environmental protection and the practices, ways of life, and values of the abuelas and abuelos which can be called “ancestrality” (Escobar, 2018). Participants frequently mentioned that their abuelos and abuelas were “sabios” (wise). This wisdom was connected to their humility, their spirituality, their “valor de trabajo” or hard work, and their ecological knowledge. I have separated the themes of conviviality, autonomy, and environmentalism, for the sake of analysis and ease of communication. Yet in practice, the discussion of the abuelas and abuelos’ practices and values linked all three: “forgetting the ways of life of the abuelas and abuelos” was shorthand for contemporary changes which have harmed the environment, decreased convivencia, and created stress-inducing dependencies on farm inputs and the market. Learning and remembering how to “farm as our abuelas and abuelos used to farm,” was a phrase that indexed a range of commitments from environmental protection to convivencia, to autonomy. As we will see in later chapters, this commitment to revitalizing ancestral farming practices was leveraged by Voces y Manos as a design commitment and pedagogical tool.

From this perspective, the reported loss of knowledge, values, and farming practices of the abuelas and abuelos was cause for lament. Further, some participants criticized their fellow Rabinalences for “buscando todo fácil” (pursuing short cuts), rather than “recordando de nuestros abuelos y abuelas” (remembering our ancestors/grandparents) by showing respect for the environment. Thus, the introduction of environmentally harmful practices and technologies has exacerbated conflicts and tensions.

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How much of the foregoing changes in practices and perceptions of these changes would be registered by a development gaze, at least in its dominant form? As long as modernizing practices, market integration, and profit maximization remained prevailing priorities, it is quite clear that the key themes of autonomy, conviviality, and ancestrality/environmentalism would be largely invisible. Indeed, running counter to discourses of progress and modernization, participants did not characterize the lives and times of the abuelos and abuelas by their deprivation, but rather by their health, low stress, and relative self-sufficiency. This contrasts markedly with a central axiom of development: that people in the third world (especially prior generations) were “under-developed” and in need of modernization. And while farmers certainly were preoccupied with yields, they were not willing to pursue increasing yields by any means necessary. They highlighted long-term environmental sustainability, vulnerability to price fluctuations, and the loss of native seeds as major concerns. These concerns have been steeply discounted in the practices of conventional development programs in Rabinal, a practice which Voces y Manos team members said undermined their efforts (see next chapter). Thus, while open to adopting some new practices and technologies, Maya-Achí farmers generally placed their hopes for a more sustainable and healthy future in recuperation of the values and practices of their ancestors rather than in modernization or technological advancement (Bakal and Einbinder, 2024).

The findings of these focus groups thus suggests the feasibility and utility of the Recovery of Absent Knowledges methodology. It suggests not only that knowledge forms long-discredited and disqualified by colonial institutions could be elicited, but that they could help inform the development of new modes of professional vision which are more attuned to communities’

ingenuity, values, knowledges, and cultural repertoires of practice. Such forms of professional vision, I will show in subsequent chapters, proved critical to enabling modes of collaborative learning, analysis, and design to take hold which were centrally focused on the valorization and recovery of these “absent knowledges” (Santos, 2015).

### ***Interpreting Changing Cultural Practices Through a Lens of Political Ontology***

What does a lens of political ontology offer to the interpretation of the above findings? As suggested, the themes of ancestrality and environmentalism are not so easily disentangled, and in fact, attempting to conceptualize their connection pushes us against not only international development’s priorities, but also its very categories. Let us consider for a moment the ways in which this ancestrality-environmentalism nexus exceeds the terms of the development discourse, even if partially expressed through it.

Before arguing that some aspects of the Maya-Achi cosmology operate according to logics which cannot be adequately grasped through the modern episteme (and by extension, the dominant framework of development), it is first necessary to recognize a caveat: the Maya-Achi world, far from being isolated, is deeply intertwined with the world of hegemonic globalization. Economic survival was clearly a prevailing preoccupation for farmers in our study, as evidenced by the fact that discussions of finances and the economy at times dominated focus group discussions. Furthermore, participants often employed syncretic discourses which blended the sacred and the secular, such as Doña Francisca’s discussion of native corn producing more abundant dough (thus enabling her to save money) thanks to the fact it has the sacred property of “Uk’u’x.” Farmers thus spoke the languages of economy and ancestrality fluently and fluidly, just as many spoke the languages of Spanish and Maya-Achí fluently and fluidly, switching seamlessly between them. Yet the co-existence of paradigms does not signify their equivalence. The fact that participants might speak, in the same utterance, of native maize’s cost-savings and its sacredness should not be interpreted to mean that the Western episteme or vocabulary is adequate to convey the totality of Maya-Achí life projects. There is an “excess” to their narratives which is not reducible to the frameworks of environmental protection.

Let us revisit the manner in which Don Jacinto discussed the loss of cultural practices in close concert with loss of spirituality and values:

Se ha perdido mucho; ya no hay respeto hacia la naturaleza, mucho químico. No respetamos ya la vida de los animales que habitan dentro del agua; sabemos que hay animales que habitan dentro del agua, pero que hacemos muchos el día de hoy? Nos estamos olvidando de nuestros ancestros.

*Much has been lost; there is no longer respect for nature, lots of chemicals. We don’t respect the life of the animals that inhabit the water; we know that there are animals that inhabit the water, but what are many of us doing today? We are forgetting our ancestors.*

On one level, this linkage that Don Jacinto articulates between ancestrality and environmentalism can be explained (and often was explained) in relatively straightforward terms: the abuelas and abuelos had greater respect for the environment than people do today. A further interpretation might suggest that changes in environmental practices are secondary effects of the availability of material resources: the abuelas and abuelos had less money and therefore had to learn to live more autonomously. While it may partly be true that their poverty “forced” them into more sustainable practices, is this all there is to the story?

Let us listen more closely. Don Jacinto does not say that “we are forgetting *lessons* from our ancestors,” he says, “we are *forgetting our ancestors.*” Using a discourse of ancestrality

which appeared to make perfect sense to his fellow focus group participants, Don Jacinto treats the disregard of non-human life forms as essentially synonymous with forgetting the ancestors. This interconnection between ancestrality and the environment maps poorly onto Western frameworks, which treat “culture,” and the “environment” as separate domains.

Let us revisit a second example: the transition from applying blessings onto seeds to applying chemical insecticides onto them. How might we interpret the fact that the latter practice seems to have replaced the former, even though it would certainly be possible to perform both applications (of a blessing *and* of a chemical) onto the same seed? If our analysis were restricted to the Western epistemic understandings of “nature” and “culture” as fundamentally separate, we might explain the observed changes in cultural practices by saying that a cultural *belief* existed among older generations in the Maya-Achí community, which held that blessing seeds prior to planting them would improve their likelihood of germination. Over time, as farming practices modernized, Maya-Achí cultural beliefs changed as a result, giving way to the belief that treatment with insecticide enhances the rate of germination. In other words, the western episteme pushes analysis in the direction of offering causal explanations which seek to account for changes in one entity (e.g., culture, understood narrowly as *beliefs*) in terms of preceding changes in the other (e.g., nature) (see Blaser, 2019).

Now, even if the liberal-minded Westerner looks with disfavor on the application of insecticide or despairs at the loss of a cultural practice, the translation of these practices into the language of “cultural beliefs” would still entail a significant equivocation. Blaser’s analysis of the encounter between Western environmental projects and the Indigenous Yshiro communities in Paraguay’s Chaco region provides insight into why this is so. Describing the equivocations in translating the Yshiro concept of the “yrmo” into the Western language of the “environment,” Blaser (2019) writes:

The *yrmo* is a “thing” that is not quite an “environment” both because it cannot be abstracted from its specificity (its placeness) and because the stuff that makes its relations is not “environmental”...the *yrmo* more precisely refers to what I call an *emplaced collective*. Emplaced collectives are not (cultural) communities that live in (natural) places but heterogenous assemblages of entities (that “we” moderns would separate within the categories of humans and non-humans) with unique configurations that “take place” in specific locations. Crucially, emplaced collectives imply a “politics” marked by strong mutual obligations that make it difficult from within them to privilege the needs of some of their components at the expense of others without risking the whole collective (de la Cadena, 2015; Deloria and Wildcat, 2001; Kohn, 2013; Poirier, 2010) (Blaser, 2019, p. 84).

Thus, the emic understanding of *yrmo* (even if we outsiders can only approximate that understanding) complicates the causal narrative linking culture and nature. Rather than “changes in environment causing changes in culture,” nature and culture are mutually constituting (for a parallel argument in the realm of learning and development, see Rogoff, 2023). Blaser is clear, on one hand, that some of that which is designated by the “environment” may overlap with some of that which is designated by “the yrmo,” and in some cases, commitments to “environmental protection,” and “defense of the yrmo,” might converge (e.g., both would likely oppose a contaminating extractive industry in the region). Yet Blaser documents significant divergences, such as when the construction of a national park constricted Yshiro people’s movement through the territory. By barring humans from certain areas, the humans were precluded from heeding the instructions of *bahlut* (spirit owners) to sing songs which sustain animal populations, thereby diminishing not only the animal populations but also their interconnected relations with other entities in the *yrmo*. This example illustrates how epistemic violence (“failures to see”), even by

well-meaning environmentalists, can contribute to other forms of violence, such as violence against emplaced collectives like the *yrmo* and its inhabitants.

Similarly, while Maya-Achi accounts have important overlaps with discourses of the environment, one should not assume equivalency. For example, the saving and exchange of native seeds can be explained and advocated for in the terms of protecting biodiversity, and yet this is where the convergence would end. In addition to preserving native seed varieties, performing ceremonies over the seeds inscribes a relationship of inter-dependency among seeds, human beings, and the earth, as each of these entities contain the animate property of *Uk'u'x*. Beyond preserving genetic diversity, then, preserving native seed varieties and attendant cultural practices enacts and sustains a relational world, and may thus be considered activities that expand the pluriverse. Such examples encourage design scholars and practitioners to reflect on how the common tools of development — needs assessments, community evaluations and the like — even in their more participatory forms, might still perpetuate the social production of non-existence (Santos, 2015). They highlight why the creation of tools for more expansive ways of perceiving, and co-designing with communities is critical.

### ***Implications for Post-Development Program Design***

The two examples above pointed toward the limits of what can be perceived through the lens of development. With the help of Blaser's analysis, I have shown that these limits, at least in part, derive from the separation of the domains of culture and nature, a key characteristic of Western ontology. This prompts us to now ask: how might we resist the social production of non-existence in processes of co-design? How, if at all, does the answer to this question change when the “we” involves outside researchers/collaborators working in partnership with Indigenous communities? As one means of speaking to these questions, I conclude by proposing the design metaphor of *expanding the space for relationality to take hold* as a guiding framework for pluriversal design. Putting political ontology in conversation with cultural-historical activity theory, I conceptualize expansions of space for relational cultural practices as *expansions of the pluriverse*. This is a theory of design which diverges from frameworks of conventional development, given that not all expansions of relationality will be specific and measurable, certainly not in economic terms. It is also a theory of design which implies a distinct way of problematizing issues, and a distinct theory of learning.

The metaphor of the pluriverse expanding or contracting as a function of people's participation or non-participation in relational cultural practice suggests new directions and priorities for collaborative design. In chapter 3, I will posit one such new direction: conceptualizing the challenges communities face as double-binds or contradictions between communities' self-defined life projects and what their sociopolitical circumstances permit. I will argue that this framing encourages designers and practitioners to analyze and address issues holistically, politically, and even ontologically, by working to expand space for relationality where it had previously been constricted. This is an approach to problem analysis which differs significantly from an approach which treats issues as essentially personal problems stemming from knowledge gaps. Of course, understanding problems in terms of knowledge gaps lends itself to a clear and convenient solution: Educate the people! By framing problems as knowledge gaps and then setting out to fill them, governments and NGOs can claim to be addressing poverty and destitution in good faith even as they sidestep structural origins of social inequities and environmental destruction.

The limits of this narrow framing of problems as knowledge gaps—and the advantage of

reframing them as double-binds—come to light when considering our focus group finding that many Rabinalences deeply revered the abuelas’ and abuelos’ ways of farming, yearn to “return” to such ways of farming, yet feel themselves unable to do so because they are trapped by agrochemicals. Listening to their voices, it becomes clear that the crux of the issue is not a lack of knowledge of the harms of agrochemicals, much less of “environmental consciousness,” but rather a constellation of factors which lock farmers in in a vicious cycle of dependency. Contrary to the widely reported tendency of development frameworks to decontextualize and depoliticize issues (Escobar, 2012; Copeland, 2019b; Sachs, 1992) framing issues as double binds (rather than knowledge gaps) helped the Voces y Manos team focus our analysis on structural causes of issues—not as an abstraction, but as they touch down concretely on the lives of real people. In this way, the team could attend to the circumstances of people and help them in materially significant ways without falling into the trap of deficit framings.

In chapter 4 I will continue to explore the affordances of this design metaphor of expanding the pluriverse, focusing on how designing for relationality involved a fundamentally distinct vision and theory of learning than conventional development. For example, rather than tackling the issue of agrochemical dependency through expert-mediated workshops, the Voces y Manos team sought to address this issue by designing spaces for farmers to visit each other’s farms, exchanging not only knowledge with one another but a felt experience of agroecological farming, and an assurance that can only come from seeing theoretical ideas put concretely into practice. In a similar manner, community concern over the loss of native seed varieties was addressed by designing community seed swaps and agroecological fairs to bring farmers together to celebrate, revalorize, and exchange seeds. In the concluding chapter, I will discuss how seemingly apolitical, community-based activities such as seed swaps may have functioned as a kind of prefigurative politics, creating the conditions for community participation in broad social movements grounded in frameworks of food sovereignty and “defense of territory” (Copeland, 2019a). The consequential “work” that is being done by such activities, I argue, may be more accurately captured with a metaphor of expanding space for relationality than by the more common metaphors of “transferring knowledge”, “building capacity,” or “raising consciousness.”

Finally, it is important to highlight that this design commitment to expanding the pluriverse requires engaging local cosmologies on their own terms, rather than forcing them to fit into Western frameworks. This is particularly critical when outside researchers are involved. For example, if practices connected to seeds are reduced to the status of “cultural beliefs,” then the commitment to sustaining them will be based on the weak premise of respecting difference, rather than the strong premise that these cultural practices perform consequential work in the Maya-Achi world. And what is it that these practices do? Focus group findings indicate that these practices show respect for and sustain the *Uk’u’x* of the seeds, the *Uk’u’x* of land, treating them as living entities, rather than “things.” Though my own understanding is no doubt partial, and shaped by my schooling in Western frameworks, this perspective nevertheless allows me to understand why hybrid seeds would be seen as an “invasion,” and why preserving and showing respect for native seeds is critical to sustaining the Maya-Achi cosmovision, and by extension, the pluriverse.

When I attempt to express this idea in my own words and consider their relevance outside the Maya-Achi territory, I would say that these practices serve to remind human beings of the fact of our interconnection with these and other entities, and of our responsibility to them. That is, they remind us that we live in an animate universe, not one composed of objects limitlessly

available for human use (Bang, 2016; Kimmerer, 2013). This is a way of thinking about nature which can be unfamiliar to those of us schooled and raised in the West. It is certainly not a framework that was intuitively obvious to me. Yet I have become convinced that it enables a more expansive ecological vision, one where the goal is not merely to minimize humans' inevitable harm of nature, but rather which aspires toward the mutual enhancement and flourishing of both. Even if inter-epistemic dialogue is always partially constrained, it is a necessary starting point for collaborative design to move beyond imaginaries based solely in Western ways of perceiving.

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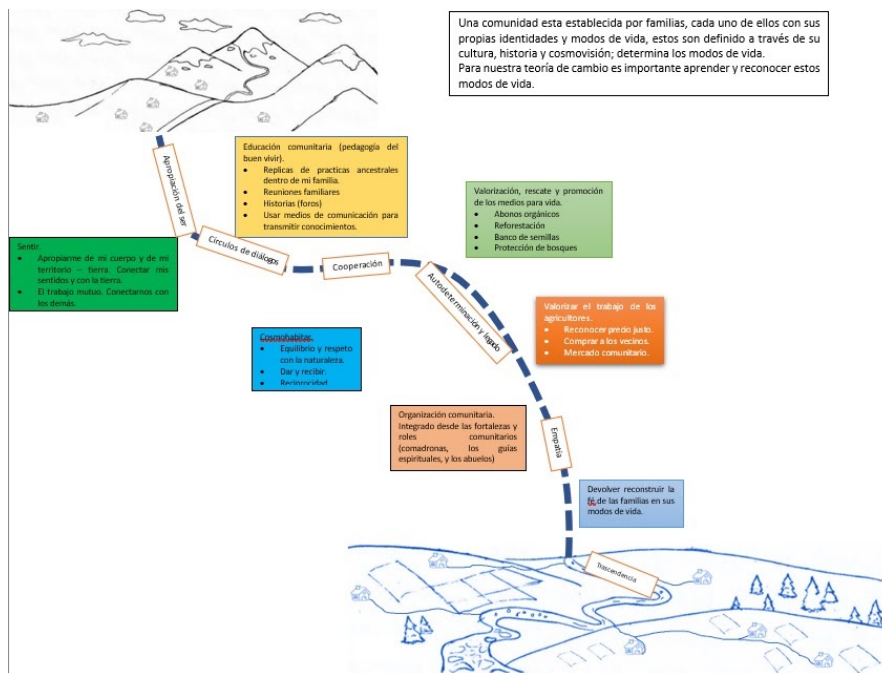
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## Interlude: The Voces y Manos Theory of Change

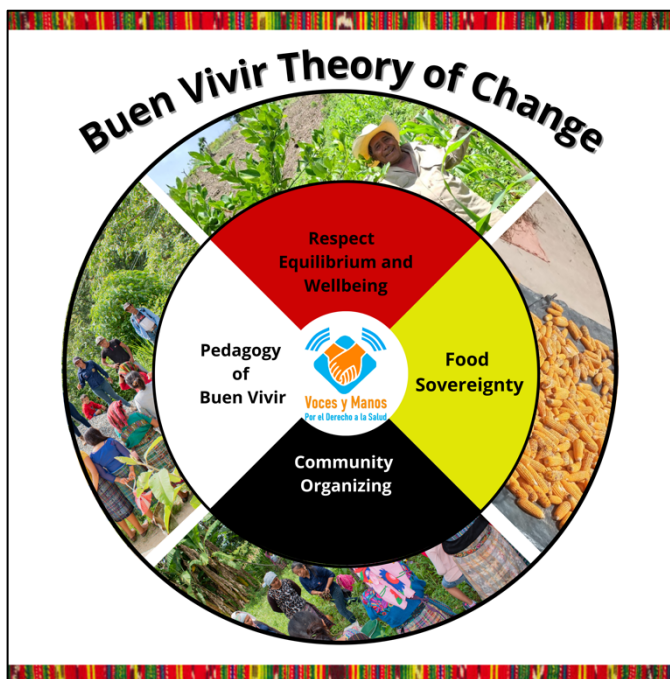
The second phase of Participatory Design for Buen Vivir is the development of a theory of change. While stipulated as “phase 2” of the process, Voces y Manos’ theory of change was, in practice, a “living document” which underwent several iterations. In 2021, Voces y Manos held a series of community convenings, much like the focus groups described in the previous chapter. Though I was not in Rabinal, the team audio-recorded and took systematic notes on themes addressed.

Through a series of videocalls, we summarized key themes raised in these focus groups and their implications for our work. Key themes included: (1) the tension between “the ancestral” and “the new,” (2) the tension between the speed and demands of modern life and the commitment to Buen Vivir; and (3) whether Buen Vivir is to be understood as a set of community-based cultural practices, a political project, or both.

We then sought to organize these themes into a series of domains, or broad categories of work. We did this by first brainstorming a list of activities we might do in our program, enriched by ideas from focus group participants. To organize this brainstorm of potential activities into broad domains, we worked in small groups, guided by a question which metaphorically conceptualized Buen Vivir as a river, which we sought to feed through a series of streams of work: “*Cuales acciones o actividades debemos realizar para que nuestros procesos (riachuelos) se crezcan para alimentar el rio de buen vivir?* / What actions or activities should we do so that our processes grow and feed the river of Buen Vivir.” Through this process of group work and discussion, we develop an initial theory of change model, envisioned as a river consisting of multiple streams, presented below.



*In subsequent meetings, we considered how our initial initial sets of 7 categories might be further consolidated. Through this analysis, we arrived at four pathways to Buen Vivir: (1) Respect equilibrium and wellbeing (2) Food Sovereignty (3) Community Organizing and (4) Pedagogy of Buen Vivir. This “final” version consists of four pathways, pictured below:*



*The definition of each of these pathways to Buen Vivir was also an iterative process. In our strategic planning retreats at the end of 2022 and 2023, we worked in groups to operationally define each of these pathways to Buen Vivir, informed by additional lessons learned from focus groups and community-engaged work. These initial definitions were used as a guide for reflecting on systematic contradictions within each pathway and for guiding the development of new activities. In August of 2024, the team collaboratively reviewed existing operational definitions, and refined the wording of each pathway to Buen Vivir, arriving at the following final definitions. Continuing with the metaphor of pathways and emphasizing a continuous process rather than an outcome or destination, each definition begins with the phrase “Caminar hacia” or “To walk toward.”*

**Pedagogía de Buen Vivir es (Pedagogy of Buen Vivir is)...**

Caminar hacia un proceso continuo de aprendizaje entre las generaciones y dentro de las corrientes de la vida. Es una pedagogía basada en los conocimientos ancestrales, y la cosmovisión Maya, que marcan una estrecha conexión entre las personas y la madre tierra. Implica una conciencia crítica y resistencia pacífica frente a las injusticias, la corrupción, las desigualdades, y las violaciones de los derechos humanos y de la madre tierra.

*To walk towards a continuous process of learning between generations and within the currents of life. It is a pedagogy based on ancestral knowledge and the Mayan worldview, which mark a close*

*connection between people and Mother Earth. It implies critical awareness and nonviolent resistance to injustice, corruption, inequalities, and violations of human rights and of Mother Earth.*

### **Organización Comunitaria es (community organizing is)....**

Caminar hacia un estado plurinacional, donde las comunidades tienen soberanía, autonomía, voz y voto en la toma de decisiones que afectan su vida, respetando los derechos humanos y de la madre naturaleza. A través de procesos participativos, consensos comunitarios, diálogos integrados, se busca una autoridad compartida donde todas y todos cumplen roles equitativos e importantes, además que todos somos escuchados y respetados como sujetos y no como objetos.

*To walk towards a plurinational state, where communities have sovereignty, autonomy, voice and vote in over the decisions that affect their lives, respecting human rights and the rights of Mother Nature. Through participatory processes of community consensus and integrated dialogue, we work for shared authority, where everyone plays equitable and important roles, and where we are all heard and respected as subjects and not as objects.*

### **Soberanía Alimentaria es (food sovereignty is)...**

Caminar hacia un mundo en donde las familias tengan el derecho de decidir y producir lo que consumen en sus hogares y comunidades. Se busca promover prácticas agroecológicas ancestrales, diversificando cultivos, rescatando las semillas nativas, y conservando suelos, aguas, y bosques, para alcanzar una vida sana en equilibrio con la madre tierra.

*To walk towards a world where families have the right to decide what foods they will produce and consume in their homes and communities. We promote ancestral agroecological practices, diversifying crops, rescuing native seeds, and conserving soil, water, and forests, to achieve a healthy life in balance with Mother Earth.*

### **Respeto, Equilibrio y Bienestar es (Respect, equilibrium and wellbeing is)...**

Caminar de la mano y en armonía con la madre tierra, protegiendo toda su biodiversidad, guiados por la cosmovisión Maya, y conviviendo la estrecha conexión entre los seres humanos y la naturaleza. Para alcanzar el bienestar de todas las formas de vida, se promueven prácticas como reforestación, conservación de suelo, protección de fuentes de agua, y actividades espirituales.

*Walking hand in hand in harmony with Mother Earth, protecting all of its biodiversity, guided by the Mayan worldview, and living the close connection between human beings and nature is recognized. To achieve the well-being of all forms of life, practices such as reforestation, soil conservation, protection of water sources, and spiritual activities are promoted.*

## CHAPTER 3

### *Iteration & Reflection: Designing for The Future while Navigating Contradictions of the Present*

*The day after visiting Doña Juana (see introduction), the full Voces y Manos team met to continue our strategic planning process, grounding our planning activities in a discussion of the dilemmas we had witnessed the day before on Doña Juana's farm. Apparently, I was not the only one who left Doña Juana's with conflicting feeling and impressions.*

*The team discussed at length the challenges of climate change in the dry corridor where Doña Juana works. We noted that she uses a pump to irrigate her lands, and that this has enabled her to cope with the uncertain rainfall that has become common. It is a strategy that works — for now. But what will happen when the river begins to run dry? And if more and more people begin pumping water for irrigation, won't the river run dry sooner? And what can people do who do not live adjacent to the river?*

*Yenifer, who runs Voces y Manos youth scholarship program, took the conversation in a different direction, by sharing an impression she had about Doña Juana's discussion of her daughters and their role in farming. She recounted Doña Juana saying that she wants to see her daughters "salir adelante para que no tienen que sufrir como yo sufrí / Get ahead so that they don't have to suffer like I did" Yenifer said that this comment surprised her, and she noted her concern about a widespread ideology in which working the land means suffering, whereas a job in the police force or the military implies relative success. She pointed out that while she completely empathized with parents' desires for their children to have educational and work opportunities, she felt that this way of speaking about agricultural work — as way of life to be left behind -- was contradictory to our theory of Buen Vivir.*

*"Ahora, trabajar la tierra ya no es una practica necesario para ellos, porque ya tienen estudio, ya no son analfabetos / Today, working the land is no longer a necessary practices because they have been educated, they are no longer illiterate" Yeni over-enunciates this final term — analfabeta (illiterate) -- drawing attention to Doña Juana's use of this rather derogatory term to describe herself. As "an analfabeta," Yeni explains, Doña Juana sees herself as having no options but to work the land. For her daughters on the other hand who are schooled and literate, they will ostensibly have "better" opportunities, even if only through the military.*

*Finally, Yenifer speculates about the long-term implications of this equation of "getting ahead" with getting off the land. Who will continue to advance traditional farming practices among the next generation? What will become of traditional farmers and traditional farming methods?*

*While acknowledging Yeni's point, Lilian, one of the promotores who works directly with Doña Juana, stepped in to offer a slightly more optimistic view of the situation. Lilian reminded the group that in Rabinal the dry season is only 6 months long. During the 6 months of the dry season, families find ways to supplement their income. Doña Juana did indeed say that when her two children come home on vacation from the jobs in the military, they do indeed help out on the farmland. Therefore, Lilian argues, the fact that Doña Juana's children have obtained jobs in the military does not mean that farming practices will be lost.*

*For Yenifer, Doña Juana's comments serve as a reminder of the arrayed threats to the survivance of Maya-Achi land-based practices. Deeply concerned with the equation of framework with suffering, she links this commonsense mode of reasoning to a broader Western*

*ideology and axiology premised on notions of material progress. Contrasting life projects of “buen vivir and “vivir mejor” (living well vs. living better), Yenifer is both sympathetic to the need and desire to “superarse” (improve one’s economic conditions), while recognizing this desire and the material conditions that produce it carry with them the risk of losing cultural practices and ways of life.*

*In Lilian’s more optimistic reading she dwells less on the ideological contradictions in Doña Juana’s statement than on her family’s ingenuity and pragmatic strategies to survive. For Lilian, joining of the military does not mean they will leave their land-based practices behind altogether; rather, she sees these merely as a complementary means of earning income.*

*Rather than articulating diametrically opposed viewpoints in a debate, these two perspectives illustrated a kind of movement between structural and individual modes of analysis, each of which complemented and informed the other. While the structural analysis helped to place problems of practice within their broader sociohistorical context, the attention to individual circumstances served to keep attention squarely on Voces y Manos’ commitment to offer a material means of addressing people’s immediate circumstances. This chapter is an exploration of how these mutually informing modes of analysis can be instantiated in concrete practices of co-design.*

## **Introduction**

The vignette presented above offers a window into Voces y Manos routine “praxis dialogues” — a key component of our practice and the third of the four iterative phases of participatory design for Buen Vivir. The conversation excerpted above took place immediately after our field visit to Doña Juana’s parcel, described in the vignette that opened the introductory chapter. The conversation was an informal practice which gradually became a routine activity: Every month, we would sit together in a circle to reflect on the daily challenges encountered in the process of translating our theory of change into practice. These conversations revolved largely around what we called “contradictions,” but which may be better understood as double-binds. Thinking in terms of double-binds necessarily meant attending to the constraints people face in their daily lives and the structural origins of those constraints – how these conditions create “lose-lose situations” which cannot be remedied through individual action alone. This chapter explores the design utility of the concept of the double-bind, how it draws attention to structural conditions, and enables modes of design to take hold which align more closely with communities’ self-defined life projects.

In the cultural-historical literature, two closely related concepts speak to the kinds of dilemmas facing Doña Juana: the contradiction and the double-bind. In Engeström & Sannino's (2010) expansive learning cycle, contradictions feature prominently, with these authors writing that contradictions are the “driving force of transformation” (p. 5). Taking up the concept of the double-bind, Pacheco (2012) writes that double-binds emerge from contexts in which “individuals situated in particular activity systems reach a ‘need state’ and become gradually dissatisfied with the societally and historically given tools, artifacts, and instruments that no longer resolve these tensions” (p. 123). One way of conceptualizing the difference between contradictions and double-binds is in terms of consciousness: A contradiction becomes a double-

bind when one recognizes it as such and seeks to take individual or collective action to address the social situation (Gutierrez, personal communication, July 2024).

A basic premise of this chapter is that while contradictions or double-binds can be a driving force for social change, the pathways available for responding to them are never neutral, a point emphasized by Stuart Hall (2010). Hall emphasized what he calls “crises of hegemony” which emerge from the contradictions within social formations, and how such crises can alternatively lead to social transformation or a retrenchment of the status quo as if elites shore up support. Though Hall’s (2010) focus is on contradictions on the scale of democratic societies, his analysis can be directly applied to contradictions on smaller scales. In a context like Rabinal, the very same contradictions that make existing tools and practices untenable (e.g., hydroclimatic change) can be used as justification either for sustaining Maya-Achí life projects, or for undermining them in the name of “modernization.” Recognizing the non-neutrality of contradictions or their resolutions, the central argument of this chapter is that it is necessary for design processes to make explicit their underlying telos and axiological commitments if they are to avoid merely reproducing the colonial status quo.<sup>20</sup>

Starting from this premise, this chapter examines Voces y Manos’ practice of pairing iterative reflection on contradictions with our Buen Vivir theory of change. Intentionally considering contradictions with respect to particular pathways to Buen Vivir was an attempt to ground the notion of contradictions in explicitly stated axiological commitments. In other words, the design process sought to turn contradictions into double-binds — tensions that the Voces y Manos team recognized between current social conditions facing Maya-Achí farmers’ and their self-defined life projects. By doing so, the aim was to avoid treating contradictions as self-evident or ideologically neutral, and to make sure that attention to immediate needs did not eclipse the long-term commitment to Buen Vivir as the “the moving horizon of possibility” (Gutiérrez, Jurow & Vakil, 2020, p.331) toward which we were working.

This chapter presents a thematic analysis (Clarke & Braun, 2014) of 12 months of Voces y Manos’ praxis dialogues, identifying and describing six double-binds that emerged repeatedly. Analytically, I attempt to identify the axiological, ontological, and epistemological premises and commitments underlying the way in which these double-binds were problematized; that is, how they came to be understood as a need state or crisis demanding resolution. In identifying and describing double-binds, this chapter sets the stage for the following chapter, which will focus on the development of collective design imaginaries within the Voces y Manos team. Thus, chapter 3 attends to how double-binds were problematized, while chapter 4 will focus on how collectively design visions were co-constructed to address them.

In the following background section, I briefly discuss the way that the concepts of the contradiction and the double-bind have been theorized and utilized in the development of the formative intervention cycle (Engeström and Sannino’s 2010). After presenting my findings, I consider how Voces y Manos’ practice of jointly analyzing contradictions together with our

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<sup>20</sup> Throughout this chapter, I use both the terms contradiction and double-bind, with slightly different emphases. There is no clear translation of double-bind that I was aware of in Spanish, so in our internal dialogues we used the term *contradicción*, or contradiction. When I am trying to emphasize the consciousness of a contradiction, that is, how it comes to be problematized, and how it is understood as touching down on the lives of community members, I use the term double-bind.

theory of change may have helped contribute to the “interweaving of structural critiques with ... alternative forms of here and now activities” (Bang & Vossoughi, 2016, p. 2016, p. 175).

### ***Formative Interventions & Conceptualizing the Contradiction***

The use of contradictions in processes of iterative design has been most systematically developed within CHAT in Engeström and Sannino’s (2010) “formative intervention” methodology (see fig. 2). Formative interventions aim to promote agency among learners and develop more collaborative relationships between researchers and practitioners. Rather than assuming it is researchers’ responsibility alone to devise interventions based on theoretical knowledge, formative interventions assume practitioner knowledge is critical to the development of ecologically valid interventions. Furthermore, rather than attempting to provide linear, causal models of change, formative interventions assume that what must be learned is not necessarily possible to specify in advance. Instead, in formative interventions, “the subjects...face a problematic and contradictory object which they analyze and expand by constructing a novel concept, the contents of which are not known ahead of time to the researchers” (Engeström and Sannino, 2010, p. 15).

Thus, rather than arriving at standardized solutions to identified issues, formative interventions aim to generate concepts and principles that spark iterative improvements of practices and systems, and which might be useful to groups confronting similar situations. The expansive learning cycle is a systematization of the formative intervention process – an “ideal-typical sequence of epistemic actions” (Engeström and Sannino, 2010, p. 6) — through which contradictions are examined, new model solutions are developed and tested, and new solutions are put into practice.

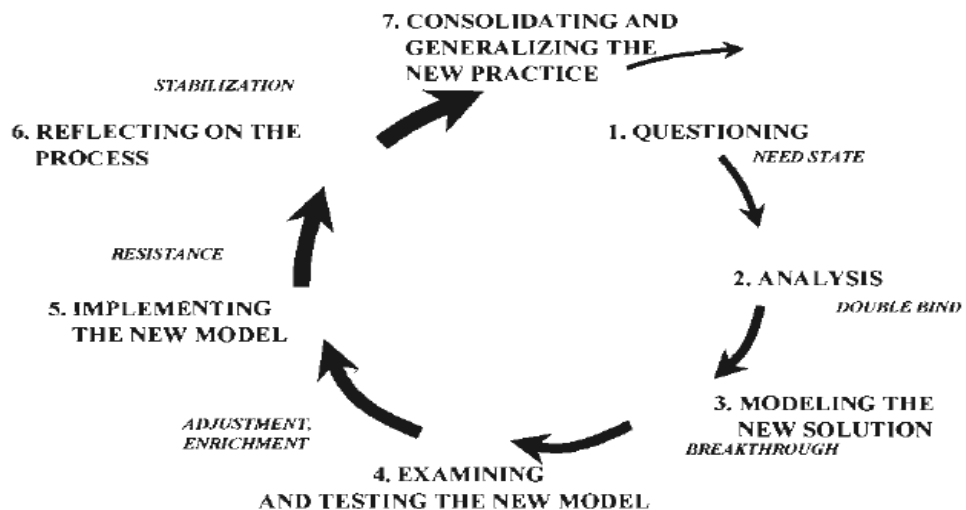


Fig. 2. *The Expansive Learning Cycle* (from Engeström and Sannino, 2010)

Contradictions play a central role in the formative intervention cycle and are understood as central to Engeström’s concept of “learning as expanding” (Engeström, 2015). Their conceptualization of the contradiction draws on Bateson’s (1972) theorization of the double-

bind. Bateson described double-binds as “societally essential [dilemmas] which cannot be resolved through separate individual actions alone” (quoted in Engeström & Sannino, 2010, p. 5). Building on this foundation, Engeström & Sannino’s definition of the contradiction emphasizes historicity and critical analysis of capitalist relations. They write that:

the theory of expansive learning sees contradictions as historically evolving tensions that can be detected and dealt with in real activity systems. In capitalism, the pervasive primary contradiction between use value and exchange value is inherent to every commodity, and all spheres of life are subject to commoditization. This pervasive primary contradiction takes its specific shape and acquires its particular contents differently in every historical phase and every activity system. Most importantly, contradictions are the driving force of transformation. (p. 4-5)

Despite conceptualizing contradictions as social (rather than individual) dilemmas rooted in historically embedded structural inequalities, in practice, formative interventions focus on the secondary or tertiary contradictions that emerge *within* a given activity system, rather than engaging the primary contradictions of colonialism and capitalism. The resultant engagements have generated worthwhile improvements in various institutional settings (e.g., schools, hospitals, libraries, nursing home settings). Yet the bracketing off of more fundamental issues of colonialism and capitalism in design efforts has led to legitimate critique. Avis (2007), for example, criticized the formative intervention model by stating that, “although contradiction is a central category [. . .], in its applications, “notions of social antagonism, exploitation and oppression become side-lined” leading to “the marginalization of a radicalized and politicized agenda” (p. 165).

Given Engeström and Sannino’s (2010) commitment to enacting practicable solutions under short time horizons, on one level it makes sense that their broad focus would shift from attempting to remedy capitalism or colonialism to more immediate concerns. What this overlooks, however, is the way in which colonial paradigms often inflect our theories of design and learning (Bang, 2016). In other words, divorcing short-term issues from their origins in structures of power runs the risk of addressing problems by means of the very same colonial categories that produced them. From this perspective, and to contribute toward the development of a pluriversal approach to design, the PBDV methodology sought to be explicit about problematizing contradictions with respect to Maya-Achí axiologies, ontologies and epistemologies (AOEs). For example, the paradigmatic challenge of agrochemical dependency was conceptualized as a double-bind not only due to its economic or health consequences, but also in terms of how it clashed with notions of balance in the Maya-Achí cosmology.

This chapter thus examines the affordances of this practice of analyzing double-binds through a lens of Buen Vivir, which is attentive not just to immediate circumstances but also their historical origins, and their significance within local value systems. Because this third phase of PDBV is preceded by processes of deep listening and dialogue with communities and developing a concordant theory of change, it aims to move beyond treating contradictions as neutral or self-evident, but rather always “reflecting perspectives, values, and processes that are already unfolding” (Bang & Vossoughi, 2016, p. 177-178). In other words, my conjecture is that the use of two analytic tools together — an analysis of double-binds and the Buen Vivir theory of change — deepens can deepen design processes, by both bringing double-binds into view and also subjecting them to political, historical and axiological analysis.

## Methodology

Between March and December of 2022, the full team of Voces y Manos promoters met once per month to engage in what we called “praxis dialogues.” These dialogues took place shortly after developing our Buen Vivir Theory of Change. These dialogues focused on the successes and challenges of translating our theory of change into practice. At times, the theory of change was invoked explicitly, but more often it was an implicit consideration that emerged in the course of addressing the guiding questions produced below. Praxis dialogues typically lasted for 90 minutes and took place on the final Thursday of each month. They were followed by the team developing their monthly work plans, which created an immediate outlet for translating ideas into practice.

Over time, we arrived at a consistent, simple format for these discussions, which typically lasted around 90 minutes.

- *Opening reflection:* These opening reflections were often based on the Nahual of the day, based on the Maya calendar. In pairs, team members would use their creativity to come up with an opening exercise. For example, in April, Lilian led an opening reflection on the Nahual “tz’ikin” (bird), which represents abundance. She displayed, on a table in the Voces y Manos office, an assortment of native corn, squash, and bean seeds, and asked each team member to select one of the seeds and to tell a story about how that seed is used in their home or their community. Opening reflections like this were designed to facilitate group harmony and cohesion and to remind the group of the “deeper meanings” behind our work.
- *A Summary of the Past Month’s Work:* Team members would describe the activities of the past month, the goals they were trying to achieve, and how these goals connected to the pathways on our theory of Change.
- *A summary of Successes:* Team members would share the accomplishments they were most proud of.
- *A discussion of contradictions:* These were often framed as questions – or problems posed to the group by other members of the group, based on challenges encountered in the field. For example, in the April discussion, Edilcer shared that a farmer asked him, “how can I be sure that if I plant these Native seeds, they will grow?” Team members collectively problem-solved around this concern.
- *A brainstorm of strategies:* After contradictions were named, the discussion turned to strategies to address challenges. Strategies ranged from the very specific, inter-personal to the development of extensive, multi-part activities. For example, with regard to Edilcer’s concern over losing credibility, the team members discussed the importance of managing expectations, and making sure farmers understood we could not offer them guarantees. Other strategies focused on larger-scale activities, including seed swap fairs, and collective workdays (*kuchubal*) so that farmers could feel less isolated in their practice.

Double-binds/contradictions were a running theme in these discussions. Internally, we operationally defined contradictions (“*contradicciones*” was the term we used in Spanish, given the lack of a parsimonious translation for double-bind) simply as “situations in which a structural barrier prevents an individual or group from accomplishing what they want to achieve.” The situation of a person wanting to use agroecology but being unable to do so because of the

difficulty of weeding by hand (as I introduced with the vignette in Chapter 1) was consistently referenced as the paradigmatic example. As this shows, our operational definition of contradiction more closely reflects the way the literature defines double-binds (Pacheco, 2012), as situations where a person is left with no easy “out” – no clearcut solution to their predicament that does not entrench them in another predicament. As activities varied each month, new sets of double-binds emerged in conjunction with new goals and challenges. I audio-recorded each of the praxis discussions. In the days following the discussion, I would type up extended summary memos, while carefully playing and replaying recordings of group discussions. While time and resources did not allow me to produce full transcripts, I produced detailed summary memos, activity logs, and transcribed key quotations verbatim.

Over the course of the year, consistent themes repeatedly emerged. At the end of 2022, I conducted a thematic analysis of each of the summary memos, using MAXQDA (Verbi software, 2021) to code for recurring themes. My coding focused primarily on the identification of recurrent contradictions; and secondarily on the framing of these contradictions. I was particularly interested in exploring convergences and divergences between the Voces y Manos team’s conceptualization of contradictions, and how they were conceptualized by farmers in focus groups. I identified six recurring themes, which I present in the findings section below.

To confirm the validity of my analysis, I typed up a comprehensive summary memo, in Spanish, of the six recurrent contradictions that were identified over the full year. I presented these to the Voces y Manos team for their consideration in a strategic planning meeting held in January of 2023. The team agreed that the summary memo was a thorough and accurate encapsulation of the core contradictions of their work. During that meeting, the Voces y Manos team also carried out a small group exercise in which they enriched the summary memo with any additional context they believed the initial summary memo may have missed, using digital annotations. Each of the contradictions presented below include information from both the original summary memo as well as additional information from those annotations.

This summary memo was then used as an analytic artifact to aid small group discussions aimed at generating new projects ideas to be implemented in the following year. (Chapter 4 focuses on the *design imaginaries* that were developed through the analysis of these contradictions.) This current chapter focuses on the key contradictions that were identified; how they were conceptualized; and their axiological, ontological, and epistemological underpinnings.

In the following section, I summarize key contradictions identified by the Voces y Manos team. In my discussion section, I move from asking what contradictions were highlighted to try to peel back the underlying axiological, ontological, and epistemological assumptions undergirding the identification and problematization of contradictions. I ask: (1) whether and how contradictions were historicized and collectivized, versus treated as ahistorical, individual problems; (2) what implicit telos and underlying ethical commitments can be discerned in the way contradictions were problematized? And (3) what kinds of knowledge and what kind of knowledge holders are granted epistemic authority for addressing the contradictions the team identified.

## **Findings**

Below I present six recurrent double-binds that emerged in the Voces y Manos teams’ praxis dialogues. Each of these specifically refer to challenges with hinder the ability of Maya-Achí farmers to practice agroecology: (1) challenges overcoming the monocultural method of farming; (2) drought and climate change; (3) loss of native seeds varieties and genetic diversity; (4)

market disadvantage for small-scale producers; (5) the expectations and paternalism engendered by the dominant development model; and (6) individualism and religious conflicts.

### ***1. Monocultural Methods of Farming***

The contradiction that the Voces y Manos team faced perhaps most directly and consistently was the prevalent use of agrochemicals. The double-bind can be stated in this way: *while farmers yearn to return to the ways of farming previous generations, many feel that their soils and ways of life have become “accustomed” to agrochemicals.* Reasons for the use of agrochemicals have a long history, explained in the introduction and chapter 1. Yet the Voces y Manos team members emphasized that today, many farmers use these agrochemicals because they appear to make their work easier and more expeditious. Armando put it this way:

*Yo siento que la gente se ha acomodado a usar herbicidas químicos porque no requiere de tanto esfuerzo. Es mucho mas fácil; yo gasto 200 Q y me alcanza para fumigar un campo de futbol...evito pagar por mano de obra. Ya con una bomba, se puede fumigar todo.*

I feel that people have become accustomed to using chemical herbicides because it does not require as much effort. It's much easier; One can spend 200Q (25 USD) and it's enough to spray an entire soccer field...It means people don't need to pay workers to clear the land. With a backpack sprayer, you can spray it all.

The herbicides used most frequently are glyphosate (known as *glifosato* in Guatemala, more commonly known by its brand name RoundUp® in the United States) and paraquat (called Gramoxón® in Guatemala, which is Syngenta's brand name for the product). Both are highly toxic and banned in many countries throughout the world and in many states of the United States. In Guatemala, the chemicals are not regulated, and most farmers apply the products with a backpack sprayer, without protective measures.

Voces y Manos team members emphasized that many people are aware of the negative health and environmental effects of these pesticides. They also explained that some dedicated practitioners of agroecology, such as Oscar's father, refuse to use these chemicals altogether. Oscar recounts that his father often says, “I prefer my hoe [to a backpack sprayer], because if I apply chemicals, I am also eating [those chemicals].” Yet most farmers, despite being aware of the negative consequences of these products, use them because they save significant time and because they are very heavily marketed.

How do these agrochemicals produce contradictions for the Voces y Manos team? Team members emphasized that the use of these products is fundamentally incompatible with the milpa system of farming because glyphosate and paraquat are designed to, respectively, eliminate any plant that is not corn, or fully burn down all vegetative matter. Practically speaking, the application of either product makes it extremely difficult to intersperse beans and squash together with corn. They also kill off microbial life in the soil, depleting soils of nutrients.

At times, as reflected in Armando's quotation above, discussions slipped into blaming individuals for “taking the easy way out.” More generally however, as reflected in the opening vignette, emphasis was placed on the overall structural conditions that made it difficult to leave behind use of synthetic agrochemicals. Team members underscored that any process involving a change in the direction of recuperating agroecology would necessarily be slow and gradual. Alejandra said, “We cannot change everything from one moment to the next; It's a long process.” The team also emphasized the importance of providing tangible alternatives to agrochemicals and showing farmers that these alternatives can work. “The change has to be seen,” Oscar said. Key to their work was building trust, and maintaining constant communication with farmers, supporting rather than coercing them to change their practices.

Oscar also emphasized that one of his pedagogical strategies for addressing questions about the efficacy of agroecology was to remind farmers of the success their grandfathers and grandmothers had with these practices. Oscar said:

*Es muy importante retomar las practicas de los abuelos, porque ellos cosechaban más, y trabajaban a puro azadón... Es algo que debemos de practicarlo porque nos damos cuenta que los abuelos nunca usaron productos químicos.*

It is very important to take back up the practices of our abuelos, because they harvested more, and worked with just with hoe ... It is something that we should practice because we realize that our grandparents never used chemical products.

Oscar mentioned some early signs of success. On his visits with farmers, Oscar reported that more and more people integrated beans and squash into their parcels. They understood the importance and benefits of the milpa system, Lilian explains, because this was their grandparents' and ancestors' way of farming. Oscar said that he believed that little by little, "people are changing their ideology, realizing the harm of chemicals."

### ***Drought and Climate Change***

Of course, an overriding challenge faced by Rabinal farmers is climate change, which has manifested in both drought and flooding. In particularly bad drought years, farmers have only been able to recuperate approximately 5 percent of the costs that they invested in their fields, according to team estimates. During those especially bad years, farmers have only harvested enough corn to last them for two weeks, compared to a "good harvest" year which might provide families corn for the entire year. During such years, farmers are forced to purchase corn, rather than relying on their own stores. The cost of corn in such years increases, causing significant economic hardship and food insecurity.

The way the Voces y Manos team framed the contradiction was in terms of the difficulty of "managing something that is outside our control." Team members further emphasized that if people lose their harvest, they may lose faith in Voces y Manos and no longer trust in the organization's recommendations. Edilcer described this as a "great burden" on him and the other promotores. He described the burden this way:

*Un agricultor me preguntó: 'como puedes asegurarme que vamos a tener una buena producción este año? En años recientes hemos tenido buenas cosechas y malas cosechas, pero últimamente, hemos sufrido grandes pérdidas: de hecho, hemos perdido todo. Muchas organizaciones han venido para ayudarnos, ustedes no son los primeros. ¿que van a hacer para asegurar que nuestras semillas florezcan?'*

A farmer once said to me: "How can you assure me that we are going to have a good harvest this year? In recent years we have had good harvests and bad harvests, but lately, we have suffered great losses: in fact, we have lost everything. Many organizations have come to help us, you are not the first. *What are you going to do to ensure that our seeds flourish?*"

He said that this conversation, "hit him like a glass of cold water in the face." The truth is, he explained to the farmer, we cannot promise that there will be rain, and no matter how good our practices are, without rain, farmers will be unable to grow. Yet even so, he felt pressure to be able to provide some affirmative answer — some form of reassurance to this farmer.

To add context to this contradiction, Edilcer and others emphasized that the commitment to growing corn is such a fundamental part of the Maya-Achí culture and identity that farmers will continue to plant it, even in the face of great uncertainty. Edilcer recounted the story of a farmer who told him:

*Sin embargo, vamos a seguir sembrando, vamos a estar en la lucha. Porque el maíz es parte indispensable de nuestra cultura, es nuestra identidad. Entonces, tenemos que seguir sembrando.*

Nevertheless, we are going to continue planting [maize], we are going to stay in the fight. Because corn is an indispensable part of our culture; it is our identity. So, we have to continue growing.

Edilser's observation strikingly aligns with (Isakson, 2009) study of K'iche farmers in the northwestern highlands, who also said they would continue to grow corn even though "*no hay ganancia en la milpa*" (there's no profit in corn). The quotation shows that their commitment to milpa farming runs deeper, for many, than the commitment to turn a profit.

Yenifer put the conversation into a global perspective, emphasizing the need for a fundamental change from an extractive model toward a framework of reciprocity with Mother Earth. She says:

*El objetivo principal de las grandes industrias es extraer. Extraer, extraer, extraer. Mientras las prácticas de los agricultores de Buen Vivir es dar y recibir, dar y recibir. . . desde el inicio de la globalización nos han enseñado que nosotros también tenemos que extraer. No es que queremos, sino por los medios que están alrededor de nosotros. Cuenta un anciano, que conocí en un taller de ASECSA que 'esta tierra es de los zompopos, yo estoy invadiendo aquí. Si yo siembro por lo menos tengo que darles un puxito de más, porque tú también tienes que comer.'*

The main objective of large industries is to extract. Extract, extract, extract. On the other hand, the [philosophy of] Buen Vivir is to give and receive, give and receive. . . Since the beginning of globalization, we have been taught that we too need to extract. It is not that we want to, but all the media around us [teaches us this]. An elder, who I met at a workshop, says that 'this land belongs to the *zompopos* [the ants], I am an invader here. If I sow, at least I have to give them a little extra [food], because they have to eat too.

Yenifer speaks with admiration for this elder, so concerned for the wellbeing of the insects that inhabit the soil that he makes sure to leave behind some of his produce for their consumption. She contrasts his philosophy with that of agro-industries, which are so preoccupied by killing as many "pests" as possible so as to ensure perfect, unblemished produce and maximal economic returns. She also attributes the growing use of agrochemicals to the influence of globalization and the media, rather than farmers' own self-defined desires to follow the industrial model of farming. In this way, she makes an explicit connection between local responses to which may not be optimal or aligned with farmers' own goals or values, and the broader influence of an extractive economic model and paradigm of farming.

### **3. Loss of native seed varieties and genetic diversity**

The third recurrent theme that emerged from our praxis dialogue pertained to the difficulty preserving of native seed varieties. The contradiction can be summarized as follows: *The people of the Rabinal communities place great value and appreciation for their own seeds and Native seeds; however, few people save and share their seeds.*

It is impossible to overstate the enormous significance that seeds have in the Maya-Achí culture. Unlike hybridized seeds, native seeds can be saved and replanted, year upon year. In addition, according to the Voces y Manos team, these seeds represent the Achí identity, its cultural richness, and even its resistance to territorial invasion. Edilcer called native seeds, "a living memory, of something that was inherited from your parents and your grandparents." Lilian sums up the difference between native seeds and hybrid seeds in this way:

*No es lo mismo ir a comprar una semilla híbrida en un agroservicio, que solo es de un color, que solo un tamaño tiene. Estas semillas [nativas] tienen diversidad. Nuestra historia está en nuestras semillas. Y esto nos hace personas con mucho valor cultural. Nuestra riqueza está en nuestra sabiduría y nuestras prácticas, que durante muchas generaciones nuestras semillas van trascendiendo, y esperamos que a un futuro no perdamos nuestras raíces, y podemos practicar y trascender nuestros conocimientos a nuestros hijos, hijas, nietos y nietas (my italics).*

It is not the same as going to buy a hybrid seed at an agricultural supply store. [Hybrid seeds have] only one color...only one size. [Native] seeds have diversity. *Our history is in our seeds.* And this makes us people with a lot of cultural value. Our wealth is in our wisdom and our practices. Over many generations, our seeds have transcended, and we hope that in the future we will not lose our roots, and we can practice and pass on our knowledge to our sons, daughters, grandsons, and granddaughters. (my italics)

Lilian's phrase, "our history is in our seeds" illustrates one of the reasons why Voces y Manos team members and many community members were so dedicated to preserving native seeds, and so deeply opposed to laws which might allow them to be privatized. More than just a source of sustenance, these seeds are understood as an integral part of Maya-Achí history and identity. From this perspective, our ensuing discussions about seeds revolved largely around this question: if these seeds have so much value, why are they being lost? Through these discussions, the team identified four major factors.

The first barrier is what Oscar referred to as the "invasion" of hybridized, or "improved" seeds. Oscar summarized:

*Si nos damos cuenta, como decían los compañeros, que las semillas 'mejoradas,' van invadiendo las semillas criollas. Con el tiempo, las personas prefieren comprar la semilla y ya no conservar lo de ellos.*

We have to realize, as our colleagues said, that improved seeds are invading native seeds. Over time, people prefer to buy the seed and no longer preserve what is theirs.

As Oscar explained, the heavy promotion and marketing of hybridized seeds in Rabinal has increased the difficulty of revitalizing native seed varieties. Second, agrochemicals which are used to kill weeds, also kill native seeds when they lie in the soil, making them much less likely to germinate.

A third factor is the loss of traditional knowledge around seed selection. As Edilcer explained, seed selection is difficult and time consuming, and as growing numbers make their living from activities other than agriculture, it becomes easier to simply buy hybrid seeds from the agricultural supply stores, even though these seeds must be purchased year after year.

Fourth, climate change and water scarcity causes many people to lose their seeds. After a drought year, people lack surplus seeds needed to be able to save them for the next year. This creates a risk that certain native landraces will be lost. Lilian summarized how the conditions in the dry corridor make the production and harvest of native seeds difficult:

*Estamos en corredor seco, donde la mayoría no tienen la capacidad de producir semillas en sí, porque no tienen el agua o extensión de tierra para producir semillas...la mayoría no producen semillas en cantidad, solo producen hortalizas para su consumo.*

We are in a dry corridor, where the majority of people do not have the capacity to produce seeds themselves, because they do not have enough water...the majority do not produce seeds in large quantity, they only grow vegetables for their consumption.

This year, Lilian described, "the rains lasted longer than usual...and the seeds rotted because of the water." In other years, the lack of rain causes plants to die in the field, they do not flower, and therefore, seed cannot be harvested. Thus, the increasingly erratic weather patterns

engendered by climate change — whether drought or excessive rain — create conditions that make seed saving more challenging.

Despite these difficulties, there are still people who maintain the practice of saving their seeds and even exchanging them with others. Oscar and Lilian described a farmer in the community of Chiac who created a bank of native seeds and leguminous plants. He has managed to certify his seeds to guarantee that they germinate, and he has also managed to sell them. This inspired the Voces y Manos team to begin thinking about how they could make the promotion of native seeds more central to their work. One of the solutions they identified for doing this was to create community seed banks and to set up inter-community exchanges of native seeds.

Describing his own practice of saving seeds with his father, Oscar said:

*Lo que hicimos fue buscar [gente que guarda] la criolla para que ellos puedan guardar su semilla para el próximo año y seguir guardando su semilla porque es lo más importante. Porque si nos damos cuenta si sembramos criollo, podemos guardar la semilla para el próximo año, en cambio si sembramos una semilla híbrida tenemos que tomar en cuenta que solo es única siembra y se nos termina.*

What we did was to look for [people who save] the native seeds so that we can save them for next year and continue saving them because it is the most important thing. Because [we know that] if we sow native seeds, we can save the seeds for next year; on the other hand, if we sow hybrid seeds we have to take into account that it is only a single season, and then we will run out.

Much time in our praxis dialogues was spent strategizing about how to encourage more farmers to save their seeds, mindful of these many advantages that Oscar described. Team members suggested continuing and expanding a practice they had been doing already: arranging special community seed-exchange events. The team described how these activities were organized: They would first purchase native seeds from the handful of producers who have seed banks in their homes. They would then bring a diverse variety of seeds to new communities, and participants could select what color and type of seed they wanted. The team described the joy participants showed as they selected their preferred varieties of corn and beans, some of which had been lost or forgotten about in the communities.

Beyond the practicalities of the activity, much discussion revolved around this question, posed by one of the promotores: “How can we elevate *consciousness* of the value of these seeds? (*¿Como hacer valer la conciencia de estas semillas?*)” In other words, the team members wanted to ensure that in addition to the physical distribution of the seeds, that there was an opportunity for participants to reflect on and share the deeper meanings and stories contained in these seeds? This question emerged as a gentle criticism of the way the seed exchange activity had unfolded. The team member who raised this question had expressed concern that amidst the busyness and logistical difficulties of managing a seed swap, we ended up rushing, and not taking the necessary time to engage in spiritual recognition of the Uk’u’x of seeds.

Though the critique was initially met with mild defensiveness on the part of the team members responsible for implementing this activity, the question led to a rich discussion in which numerous ideas were generated for infusing spirituality and stories into the seed exchange activities. One of the ideas was to open the seed exchange activity with an invocation led by a spiritual guide. Another idea was to create a space for sharing stories about Native seeds. For example, one of the promotores shared the story of a farmer who buried his seeds underground in a clay jar before fleeing his home during the worst years of the armed conflict. Years later, when the violence subsided, he returned to his home to retrieve these seeds. Because the military burned down and destroyed the milpas as part of their ethnocidal campaign, this act of saving seeds underground enabled varieties of corn to be preserved. Taking time to share these

experiences, during one of the seed exchange events, would be one of the ways to transmit the deep meaning of the seeds, team members agreed.

#### **4. *The Market Favors agribusinesses over small producers.***

The fourth contradiction identified by the Voces y Manos team is the difficulty that Rabinal's agroecological farmers face when attempting to sell their products in the market. Agroecological farming methods involve significantly more labor, yet that additional labor is not matched with greater revenue. Unlike in countries with a formal organic certification process, team members highlighted, there are currently no market incentives to support farmers who grow organic produce. Voces y Manos team members noted that despite producing widespread environmental and societal benefits, farmers receive no form of compensation for them. This means that even though many farmers may wish to use agroecology, it is often not economically viable for them to do so. The contradiction can thus be summarized: *even though producing crops agroecologically is more time and energy intensive, agroecological producers receive no economic incentives, and still must compete with large agribusinesses who depress prices.*

In the context of local markets, Rabinal's agroecological producers bring their small baskets of produce, and sit alongside *coyotes*, or intermediaries who purchase and resell produce grown on large fincas. For large-scale producers, export markets provide the primary source of revenue. However, export standards are extremely difficult to meet, and a large proportion of what is grown is not accepted by exporters, meaning that Guatemala is awash in blemished, "leftover" crops. Rather than allowing those crops to rot, producers will sell surplus crops to intermediaries, who then sell them at an extremely low price in markets like Rabinal. Given low incomes among the vast majority of those who shop in the Rabinal marketplace, most members of the public will consistently opt for the cheapest produce.

In addition, Yenifer drew our group's attention to the harassment and discrimination faced by Maya-Achí women in Rabinal who come from the most remote villages to sell their products. She described a group of "about 20 people who cornered the market," and have been assigned permanent booths. When women from the remote villages sit on the floor with their baskets to sell their crops near their booths, some of the people with established locales have gone to the extent of pouring chlorine on the ladies of the remote communities. There is thus no physical, safe place for agroecological producers to sell their crops.

Finally, the team identified another component of the issue: a lack of awareness—and economic means—on the part of consumers to pay more for organic products. Edilcer emphasized that this means that when purchasing produce, consumers prioritize the price, size, and color of the product they buy over the health benefits they can obtain by eating organic products. The need to save money when buying produce has been made even more urgent, as food costs have been rising steadily. Edilcer thus emphasized: the person who produces organically spends more but receives less money for what he produces.

#### **5. *Swimming against the stream of the dominant development model.***

The fifth recurrent contradiction we analyzed was the role of the other NGOs in Rabinal, which, in many cases, tend to reproduce what we have called the conventional development model. One of the characteristics of this model is its "deliver, deliver, deliver" approach, as Yenifer referred to it. The mandate of many of these organizations, which comes from large international agencies, is to deliver large quantities of seeds, fertilizer, or other materials within a short span of time. In order to meet their targets, large NGOs often work quickly, and lack the

time to get to know farmers or to work with them in an individualized manner.

One consequence of these top-down pressures is that many of the large NGOs provide all beneficiaries the exact same forms of support, in the same quantity, at the same time. The Voces y Manos team members criticized this model for providing resources in quantities that were not appropriate to meet individual needs, that were not tailored to individuals' situations, and which created paternalistic expectations which could not be met by other organizations, like Voces y Manos. They contrasted this model to that which Voces y Manos and other community-based NGOs attempt to use, which works in a personalized manner, based on the interests, strengths, soil conditions, and other pertinent factors of each farmer.

Swimming against this current of the conventional development model has caused Voces y Manos several specific challenges. First, because the large NGOs provide an "obscene amount" (according to Lilian) of seeds, fertilizers, and other farm inputs, farmers affiliated with Voces y Manos are often dissatisfied with the amount of seed, or other inputs that Voces y Manos provides. Furthermore, Armando explained, many of the large NGOs promise agricultural supplies to farmers as an "incentive" to encourage those farmers to engage in conservation practices on their own land. For example, Armando described a project where the promise of foodstuffs was used as a mechanism to encourage farmers to build contour barriers to prevent the loss of topsoil. Armando sharply criticized this practice, because it assumed farmers' were not intrinsically interested in preserving their own soil. Armando saw such practices as deeply paternalistic, and contrary to the vision of agroecology. Armando further explained that such practices of large NGO change farmers expectations of the nature of projects, such that they assume they will receive resources from Voces y Manos in exchange for "doing what Voces y Manos wants us to do." The team characterized this expectation as widespread and antithetical to Voces y Manos' goal of working to empower a network of farmers to protect the environment and exchange agroecological knowledge with one another.

A closely related aspect of this contradiction is that since many of the large NGOs often dole out chemical fertilizer for free, they contribute to agrochemical dependency and undermine efforts to generate organic alternatives. Lastly, Voces y Manos team members highlighted that because large NGOs are each accountable to the expectations of their own donors, it can be quite difficult for organizations to collaborate with one another. One of the local consequences is that the benefits of many projects are not evenly or fairly distributed between and within communities.

## **6. Individualism and Religious Conflicts**

Within communities, there are also longstanding internal conflicts — many of which have their origins in the armed conflict — which make collective work challenging. During the armed conflict, an explicit aim of the military was to destroy the social fabric of the communities. This was done by forcing many community members to join community-level "*patrullas de autodefensa civil*" (Self-defense patrols, or PACs) to spy, intimidate, and carry out severe acts of violence against their neighbors who were accused of being guerilla fighters. After the conflict, Rabinalences continued living in communities with the very same individuals who had committed acts of violence against them. The impact of all this, in the realm of community development projects, has been a preference of many to work individually on their own small projects at the household level, rather than on cooperative projects.

The members of Voces y Manos referenced many "very bad experiences" that they have had — both in their work with Voces y Manos and in their personal experience — where

collective projects have failed miserably. Yenifer shared about a project in her own home community designed to engage multiple community members in working together to raise egg-laying hens. She explained a widespread perception that:

El problema es que cuando llega el turno de mi vecino, no llega. La gente ha dejado de trabajar colectivamente, porque pueda que “yo trabaje más y el vecino trabaje menos.”

The problem is that when my neighbor's turn comes, he doesn't show up. People have stopped working collectively, because they feel that “I will work more, and my neighbor will work less.”

Edilicer shared a similar reflection:

Es muy complejo. Hemos tenido experiencias malísimas; porque la gente dice “el que menos trabajo, es el que más come, y más lleva, y más regaña.”

It is very complex. We have had very bad experiences; Because people say, “the person who does the most gets the least, and scolds others the most.”

Because communalism is a fundamental part of the commitment to Buen Vivir and a pragmatic necessity of agroecology, this was seen by the Voces y Manos team as a major barrier to the success of their work.

Related to this sense of community division is religious conflict. Today, there are two predominant religions: Catholic and Evangelical, with the population roughly evenly split between the two. The Catholic religion was the dominant force behind 500 years of religious conversions, conquest, and cultural domination that caused a great deal of knowledge from the Mayan world to be lost. At the same time, many Mayan religious and cultural practices survived in a hidden, syncretic form within Catholic religious practices, and Catholic priests over time adopted a relative level of openness to the Mayan influence within practices of Catholicism. Today, the Evangelical religion is generally perceived as being much more hostile to Maya spirituality and culture. For example, as described in focus groups, Mayan spiritual guides were often accused of performing “witchcraft.”

Alejandra explained that, to her surprise, Mayan cultural practices are “almost entirely unknown” to many of the community members she works with. For example, when she opens her agricultural activities with reflections on the Nahual of the day, she reported that many people “have a look on their face that shows that don’t know anything about this.” Despite all these barriers, the Voces y Manos team members said that the participants they work with have shown interest in learning more about the Mayan spirituality, culture, lunar calendar, harvesting practices, etc. “They respect space,” Lilian said, referring to the practice of opening project activities with a reflection on the Nahual of the day. They saw this as a positive and encouraging sign, and noted that, at least to date, they have not encountered intolerant attitudes or disrespect toward these practices.

## **Analysis and Discussion**

As I turn to my analysis, I move from asking *what* double-binds emerged through the group’s collective analysis to try to peel back the underlying axiological, ontological, and epistemological assumptions undergirding the identification and problematization of contradictions. I focus on three key alternative modes of analyzing double-binds that promoters encountered in translating their theory of Buen Vivir into practice. I ask which of these modes

tended to predominate the discussion: (1) whether and how contradictions were collectivized and historicized, versus treated as ahistorical and individual? (2) what implicit telos and underlying ethical commitments can be discerned operating beneath the surface? Is this telos implicitly aligned more closely with the commitments of “Big Development” or Buen Vivir? And (3) what kinds of knowledge and knowledge holders are granted epistemic authority for addressing the contradictions the team identified? I will highlight the ways in which the joint use of the Buen Vivir theory of change and reflection on double binds tended to historicize issues and problematize them in relationship to Maya-Achí communities’ life projects, values, and ways of knowing. These are dimensions of double-binds which, I argue, have been granted scarce analysis in the existing formative intervention literature.

### ***Were contradictions historicized or individualized?***

Content analysis highlighted the ways in which the praxis dialogues tended to open up space for historicizing and contextualizing phenomena. It is important here to emphasize just how widespread the emphasis on individual responsibility is within the development sector in Rabinal. As mentioned in the introduction, there are historical reasons for this: much development *explicitly* sought to address poverty on an individual level, as a means of undercutting collective action. Many in the Voces y Manos team have worked in Rabinal’s development sector and were trained in the use of planning tools to address problems in a highly individualistic, technical manner. Changing these working practices is no easy task.

This said, rather than showing that one “type” of explanation (individual or structural) tended to predominate, content analysis showed a high prevalence of both. Yet even as individual-level explanations arose repeatedly, individual-level explanations of contradictions rarely stood on their own or were treated as self-evident. More often, they were followed by a self-reflective moment of considering explanatory factors for the contradiction beyond the control of the individual.

Consider, for example, that much of the conversation around the contradictions of the market tended to revolve around the “lack of awareness among consumers.” This is an individual level framing which led to a discussion about how we might devise a project to raise public awareness of the benefits of buying agroecological produce. Alongside such “consumer awareness” approaches, however, there was also a consistent pattern of situating individual decisions within a broader sociohistorical context. Thus, the team’s conversations about pursuing consumer awareness strategies were mindful of the limitations of those strategies in a context where market incentives systematically favor large-scale producers. This led to a conversation about other types of strategies, such as offering some form of premium or subsidy for agroecological produce. Often, the structural solution was seen as being long-term or unfeasible, producing rich dialogues on how to work on multiple scales, multiple timespans, and in concert with other organizations.

Similarly, there were many times when Voces y Manos team members — like focus group participants — tended to blame community members for using herbicide to clear their land. In some cases, team members explained the use of chemical herbicide in terms of people choosing “the easy way out.” Yet here again, the structure of the praxis dialogues tended to generate space for situating this individual “choice” within a broader set of structural conditions. Thus, team members recognized the ways in which the marketing practice of agro-industries; and broader trends of market integration, migration, and globalization strongly favored the

agroindustrial approach.

It was also quite significant that the issues of community division were framed and discussed as one of the legacies of the armed conflict, rather than treated merely as a cultural preference for working alone. I attribute this not only to the structure of praxis dialogues internal to Voces y Manos themselves, but to the broader commitment among Maya-Achí organizations and the Maya movement in general to the notion of historical memory (*memoria histórica*). As graduates of the Fundación Nueva Esperanza School, the commitment to remembering the deceased, preventing future ethnocides, and healing community divisions has been deeply inculcated in the Voces y Manos team members. Each year, Voces y Manos joins other Maya-Achí organizations in a commemoration of the Rio Negro massacres. They educate visitors on the history of the massacres when they come to Rabinal. Historical memory is thus part of the broader milieu and working practices of the organization, and this necessarily informed the praxis dialogues.

This awareness of historical memory does not make issues of community division any less frustrating or difficult to manage. However, understanding them as a product of genocide and repression makes it easier to have compassion and understanding for community members when these divisions manifest.

It is noteworthy that although the concept of historical memory cannot be found in the formative intervention framework (or, for that matter, within Marxist analyses of the concept of the contradiction), this commitment to historical memory enabled the Voces y Manos team to avoid blaming community members when they encountered community division or hesitancy to work on collaborative projects. This again points to the need for deep engagement with local community history and concepts, rather than applying frameworks developed in the global North uncritically. Although Engeström and Sannino do not explicitly call their formative intervention model a universal tool for all circumstances, they also do not discuss this critical issue of whether or how it might need to be adapted for other contexts.

### ***What was the implicit Telos guiding analysis on contradictions?***

In general, the Voces y Manos team's implicit telos organizing the discussion of contradictions revolved around the values of the abuelas and abuelos. To be sure, this was related both to what they learned in focus groups, and also to their own lived experience with farming. It is clear, for example, that the promotores' commitment to reducing or eliminating the use of agrochemicals was grounded in their commitments to revitalizing ancestral farming methods. This is evident, for example, in the way Oscar described his pedagogical approach to encouraging farmers to cease using agrochemicals by reminding that "our grandparents never used chemicals."

It is striking then that loss of native seeds emerged as one of the most significant, historically rooted dilemmas repeatedly by the Voces y Manos team, given that this issue is rarely considered as a priority of most conventional development programs. Furthermore, the way the Voces y Manos team members articulate the value of native seeds aligns closely with the perspectives voiced in focus groups. For example, when Lilian said, "our history is in our seeds," she very closely followed the words many focus groups participants who emphasized the central important of these seeds to the Maya-Achí identity. This indicates one of the ways in which a telos aimed at the revitalization of deeply cherished cultural practices shaped the kind of contradictions that were granted salience. This particular contradiction was framed as a double-bind insofar as the emergent practice (of seed swapping) is recognized as a response to the threat

to the very cultural identity of the Achí people posed by hybrid or transgenic seeds. Importantly, as emphasized in the previous chapter, this practice of saving native seeds is one which very likely would be outside the professional vision of conventional development practice, because native seeds do not necessarily produce a measurable advantage vis-a-vis hybrid seeds in terms of raw output. The very fact that this issue emerged as one of central importance indicates an attunement to Maya-Achi values and ways of life coming to shape the professional vision of the Voces y Manos team.

It was also telling that much of the Voces y Manos groups' conversation revolved around how we might not only revive native seed varieties, but also bring to life the stories behind these seeds so that their significance is not lost to future generations. This indexes the way the team's emerging professional vision attuned them to the intangible dimensions of seed exchanges. This emphasis on revitalizing native seeds and regenerating ancestral practice provides evidence of praxis dialogues being organized around a markedly distinct telos than conventional development. That is, rather than focusing linearly on progress, modernization, or economic returns, the ethical compass guiding the team's analyses pointed toward improving material conditions by means of "rescuing" (rescantando) ancestral practices. Furthermore, it is clear from the team's problem-solving approach that — contrary to essentialized, derogatory notions of Indigenous ancestral practices being inherently static — ancestral practices are themselves understood as dynamic. In response to new challenge (e.g., climate change) new strategies are innovated, or renovated, such as the practices of seed exchange.

### ***What Epistemological Systems Guided the Analysis?***

It was apparent throughout the praxis dialogues that Maya-Achi knowledge and practices were not only *accepted* as valid but actually granted significant epistemic authority. We see this in the various times at which Voces y Manos team members reference the practice of their own parents or grandparents. It was also evident in the way they treat the knowledge of community members they work with as an intellectual resource. Consider, for example, the way Lilian describes community members' practices of seed saving, or the way Oscar describes his father's commitment to avoiding the use of agrochemicals. This granting of epistemic authority to elders within the community is especially significant when we consider the ways in which many development projects regard their "beneficiary populations" as ignorant and dependent on the superior knowledge, the superior technologies, and the "improved varieties" of experts in order to get ahead. Copeland's (2019) work, for example, showed how this epistemic stance not only led to a devaluation of communities' endogenous practices and knowledge, but also led to deepening divisions between those community members who saw themselves as "capacitados" ("having obtained capacity building") and those they saw as "incapacitados" ("the incapable" or "the ignorant").

The commitment to revitalize Maya-Achi knowledge systems was also evident in the way the team analyzed the contradictions posed by water scarcity and climate change. From the outside looking in, it is all too easy to conclude that climate change creates emergency conditions which require dramatic changes in farming practices. Indeed, when describing Voces y Manos project to outsiders, it is common for audiences to ask: "why don't they just grow another crop?"

Tellingly, because of Voces y Manos' very close relationship to farmers and their deep understanding of the immaterial value of maize, they recognize that *only* encouraging farmers to switch to growing other crops would do harm to cultural survival and simply fail to take hold as a viable solution. Instead of replacing existing practices with new ones, their approach is to

leverage existing cultural repertoires and to recuperating valuable ancestral methods. In some cases, the recuperation of ancestral practices is accompanied by the introduction of complementary alternatives.

It is also noteworthy that conversations on the specific pragmatic challenges of climate change were often placed within a broader context, drawing on pan-Indigenous readings of the Anthropocene as problems of the Western “civilizational model” (Escobar, 2020). This was evidenced most clearly when Yenifer linked the challenges of climate to the contrasting ethics of reciprocity (“give and receive, give and receive”) with an ethic of extraction (“extract, extract extract”). It shows a kind of multi-scale mode of analysis at work, in which the knowledge of Maya communities was not limited to its affordances for climate change adaption, but also seen as informing the broader response to the “civilizational crisis” of climate change. Finally, it was striking that in her illustration of an ethic of reciprocity, Yenifer granted moral and epistemic authority to the elder who made a practice of leaving a portion of his produce behind for the insects. She was clearly moved — as all of us were — by this farmer’s generous stance toward the insects that so many of us have become accustomed to thinking of as “pests.” The fact that Yenifer marked this anecdote as salient to bring into the discussion suggests that the organization of the space was not only *open* to non-Western worldviews, but that they were actually privileged and linked to broad philosophical propositions for how to live in right relationship with Mother Earth.

## Summary & Conclusion

This chapter has sought to advance understandings of the utility of the concept of the double-bind, or contradiction, in collaborative design processes. While recognizing the concept’s powerful affordances, I have argued that for the concept to truly be socially transformative, it requires greater theoretical and sociopolitical elaboration. More specifically, when using the contradiction as an ideational artifact, I assert that it is necessary to always ask: *with respect to what desired endpoint, values, and practices is this issue a contradiction?* Problem-solving around contradictions necessarily involves making axiological judgments, grounded in implicit or explicit understandings of what is true, right, moral, beautiful, and worthwhile. They also involve ontological assumptions about the nature of the world and epistemological assumptions about how we ought to make sense of the world around us. That is, the notion of contradictions necessarily implies a desired endpoint — and if the analysis of contradictions is to pursue decolonization, this endpoint (which is itself constantly being defined and re-defined) must be made explicit. In other words, the concept of the contradiction is never politically neutral.

It is also important to highlight the importance of holding these praxis dialogues consistently, frequently, and grounding them in very specific challenges encountered in the field. This enabled theory and practice to inform each other in very specific, actionable ways. For example, when one of the team members raised the concern that logistical difficulties tended to predominate over “deeper meanings” in the seed exchange activity, the rich dialogue that ensued points to the value of bringing the analysis of contradictions as proximate as possible to the specificities of practice. In this conversation, the practicalities of implementation were not glossed over. Yet, at the same time, the reflection provided an opportunity for reflection on how logistical difficulties can lead — quite understandably — to reproducing some of the conventional development practices that we criticize. This also shows the value of the praxis

dialogues, as it provides a “safe space” for productive self-criticism to occur.

The previous, second phase of Participatory Design for Buen Vivir — developing a theory of change — was the step we used to make this endpoint explicit. This third phase — analysis of contradictions through praxis dialogues — has sought to illustrate what foregrounding Indigenous life projects in the analysis of contradictions can look like. The utility of this exercise, I argue, was in part that it helped make explicit how secondary contradictions encountered by Maya-Achí farmers rest on a foundation of primary contradictions rooted in colonialism and capitalism. I showed how this work of tracing secondary contradictions “to their origins” is necessary for design practices to avoid reproducing coloniality. For instance, when Lilian problematized the loss of native seeds by stating that, “*our history is in our seeds,*” she pointed toward a design imaginary (elaborated upon in chapter 4) which departs from Western ontology which regards seeds merely as objects — as things. This chapter has thus highlighted the value of analyzing contradictions with respect to Indigenous communities’ life projects and showed that doing so enables a more pluriversal approach to design.

Finally, it is important to highlight the role re-mediations that took place in this practice of critically reflecting on contradictions. Jurow’s (2016) work with a community-based organization in the United States revealed a sharp bifurcation between the “intellectual” work of program designers (who write grants, develop programs, etc.) and “front-line staff” charged with implementing programs. This bifurcated phenomenon is widespread, and indeed is one of the specific working practices through which hierarchies of knowledge and power are reproduced in the field of development. The model of PDBV points to a concrete possibility for an alternative. In this model, the promoters’ first-hand knowledge was recognized as central to the process of critically analyzing contradictions, and they engaged as co-thinkers together with program administrators, the program director, and researchers. The development of subsequent iterations of design was clearly enriched by this knowledge. I will expand this concept of role-remediations, and their close connections to development of collective design imaginaries, in the next chapter.

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# CHAPTER 4

## DESIGNING FOR EMERGENCE

### Introduction

Chapter 4 focuses on the fourth and final phase of Participatory Design for Buen Vivir — “Designing for Emergence.” Whereas chapter 3 focused primarily on how issues were problematized and framed by the Voces y Manos team, this chapter focuses on the collaborative processes involved in envisioning new cycles of design. Analytically, I attend to *collective design imaginaries*, which I define as a conceptual space which sets the parameters of the thinkable and desirable end goals of world-making, not as a pre-determined destination but a “moving horizon of possibility” (Gutiérrez, Jurow & Vakil, 2020, p.331). The broad stakes involved in studying design imaginaries stems from the divergent possible responses to the crisis of climate change in Guatemala’s dry corridor. As explained in chapter 1, the same set of material circumstances can be used to justify either a retrenchment of green revolution technologies on one hand or a cultural revitalization of Maya-Achí farming practices on the other (or some combination thereof). Given the key mediating role that agricultural outreach workers play in shaping the response to the crisis of climate change in the territory, understanding their vision of what’s possible and desirable is critical.

In the introduction and chapter 2, I argued that conventional international development models operate on the basis of design imaginaries which profoundly constrict understandings of *what is* as well as *what could be*. In chapter 2, I described Voces y Manos’ strategy for recovering communities’ absent knowledges, as tool for enabling more expansive design practices. Chapter 3 attended to how the Voces y Manos team problematized issues of climate change and food production. This chapter moves from modes of perceiving to modes of designing — exploring how design imaginaries emerge, and how they challenge, reproduce, or transform the dominant discourses and practices of development. I see collective design imaginaries (a shared vision) as closely linked to world-making (a set of practices) with the former creating the kinds of “mental maps” or “regimes of representation” which shape world-making practice. Agroecology — which is simultaneously grounded in the immediate, local practices of food production and linked to broad visions of agrarian reform — is an ideal site for studying this interplay between the co-construction of a long-term vision and the immediate practices which potentiate that vision.

My analysis centers on a strategic planning retreat, held in January of 2024, whose aim was to develop a new set of agroecology projects — guided by a theory of Buen Vivir — to be carried out over the next 2–3-year cycle of the program. Using a combination of thematic analysis (Clarke & Braun, 2014) and micro-genetic video analysis (Jordan & Henderson, 1995) of short cycles of dialogue, I examined both the contents of design imaginaries and how they were co-constructed in practice and interaction. In doing so, I attempt to move beyond unitary accounts of either social reproduction or resistance to conventional development models to

illustrate how design imaginaries were co-created as relational, interactional achievements. Furthermore, by considering design imaginaries of Buen Vivir and how they come to take hold, my analysis attends to the interplay between long-term, broad visions of change, and how those ends might be instantiated in specific practices and activities in the here-and-now. I illustrate how long-term sociopolitical visions were instantiated in short-term design commitments through the description of two project proposals developed and described by members of the Voces y Manos team: a school-based gardens projects to teach children about Maya agroecology, and a community-based activity to save native varieties of seeds.

### ***Utopian Methodologies in Education***

This chapter's focus on collective processes of envisioning alternative worlds aligns particularly closely with the field of utopian methodologies in education. Utopian methodologies in education are "a form of DBR [design-based research] that can guide the process of envisioning, implementing, sustaining, and critically evaluating the more radical forms of activity systems that have become both possible and necessary in the current world crisis" (Rajala et al., 2023, p. 111). In its concern for the collaborative design and study of learning environments for broad social transformation, utopian methodologies are also closely aligned with the traditions of social design experimentation (Gutiérrez, 2008, 2016; Gutiérrez & Jurow, 2016) and participatory design research in education (Bang et al., 2016; Bang & Vossoughi, 2016). The distinctive focus of utopian methodologies in education is the attention they pay to the enactment of what Wright (Wright, 2011, 2020) calls "real utopias" — or activity systems which enact, in the here-and-now, modes of social life which prefigure more just futures. Scholars in this tradition view learning environments as examples of such prefigurative spaces and highlight the central role of education within broader social change projects.

Utopian methodologies in education were first developed by Brown and Cole (2001) whose conceptualization of utopia drew closely on the theoretical work of Ruth Levitas (2013). Levitas painstakingly defined utopias in a manner that would avoid the teleological orthodoxies which have plagued utopian visions throughout history. Highlighting Levitas' contributions to the conceptualization of a utopian methodology, Rajala et al. (2023) write that:

Levitas gave priority to reflexivity provisionality, and dialogue in the building of utopias. Possible futures should be regarded as partial and provisional, as well as open to criticism and debate. The recognition of the partiality and reflexivity of utopian imagination is also central for dealing with the risks of utopias, for example, the violent imposition of utopias on others... (p. 113)

These principles of reflexivity, provisionality, dialogue, and avoiding the violent imposition of utopias are invaluable insights for educational designers. Yet when applied to contexts in the global South such as Rabinal, it must be recognized that the violent imposition of one utopian vision on another is not a future risk to be guarded against, but rather an ongoing fact of life. For example, and as discussed in the introduction, the re-imagination of Ixim Ulew (a territory comprised of Maya, Xinca, Garifuna, and Ladino pueblos) as Guatemala, a

developmentalist, export-oriented state, was a violent utopian imposition, and one which remains predominant today (Dary et al., 2018)

Given this colonial context, I argue it is necessary to specify a utopian vision that rejects the premises of a One-World-World and embraces the notion of the pluriverse. In other words, Levitas' ideas of reflexivity, provisionality, and dialogue must recognize and embrace multiple ontologies, Indigenous communities' life projects and commitments, and recognize how these often depart from Western utopian imaginaries. Furthermore, given the material precarity wrought by colonialism, the commitment to enacting concrete utopias must not only be future looking, but also responsive to the material needs of people in the here-and-now (Gutierrez, 2024).

Because agroecology is so intimately connected both to immediate survival needs and also to sustaining long-term Maya-Achí life projects, it provides a key site for the application and study of utopian methodological approaches. Indeed, the principles of reflexivity, provisionality, and dialogue are precisely what is involved in the “dialogue among knowledges” (Pinheiro-Barbosa, 2020) between Western and Indigenous knowledge systems so integral to agroecology. For example, the attempt to discern which exogenous tools and technologies are convivial and consistent with Maya agroecology practice and which are detrimental is informed both by values, future world-making visions, and by near-term survival demands. This process of discernment is fundamentally dialogical, and is guided by a notion of utopia better understood as a “moving horizon of possibility” (Gutiérrez et al., 2020, p. 331) than a pre-specified blueprint.

Rather than treating short-term survival and utopian commitments in opposition to one another, I see the two as mutually informing. Thus, in this chapter I explore two inter-related, underexamined questions which I see as crucial to the design of just, utopian futures: *(1) What epistemic, ontological, and axiological premises lie at the heart of the utopian vision toward which we (as collectives of designers) are working? (2) How are these epistemic, ontological, and axiological commitments instantiated in design imaginaries, and leveraged to respond to the immediate issues communities face in the here-and-now?*

Despite much attention to the concept of social transformation in the utopian methodology scholarship, surprisingly little work has attended to the question of what precisely constitutes a transformative vision, and how it can be distinguished from one which reproduces the status quo. Thus, the contribution of this chapter is to attempt to consider the axiological, ontological, and epistemological principles undergirding a particular utopian vision, and to explore how those future-looking principles and commitments can be leveraged in the design of activity-systems which aim to respond consequentially to communities' quotidian circumstances.

### ***Recognizing Seeds of Transformation in Design Imaginaries***

As Rajala et al. (2023) state, programs attempting to transform the status quo must always guard against the very real risk of domestication. The authors reference Adorno's pessimistic belief “that those who deviated and endured would, over time, become domesticated—that is, assimilated within the prevailing institutional constraints and power

relations” (p.114). Rather than treat this assertion as an inevitability, Rajala and colleagues take Adorno’s pessimism as a challenge, or a kind of design-based null hypothesis to refute (Cole, personal communication, February 2024). That is, against the ever-present risk of cooptation, the task of utopian designers is to sustain the “transformative edge” of the program against the prevailing pressures of social reproduction.

Yet this raises a critical question: How does one know whether a designed activity system is transformative, or reproducing the status quo, and who has the power to decide? Recall Escobar’s (2020) adage that, “we cannot get our way out of the crisis with the same categories that got us into it.” For those of us who believe that utopian designs at small scales of activity can contain seeds of broader transformation, it is crucial to unpack the categories designers use to design. Understanding the ways these categories are conceptualized and applied to problem-solving in the world is vital to understand whether we are pursuing paths out of the socioecological crisis that retrench existing hierarchies and modes of reasoning or something truly distinctive.

Thus, in my examination of the underlying onto-epistemic and axiological premises undergirding the design imaginaries of the Voces y Manos team, I find it useful to specify two “dialogical opponents,” (Bang, 2016, p. 118, citing Matusov, 2008) which I call “Buen Vivir” and “Big Development.” Each of these are caricatures — oversimplifications of what are in reality diverse and heterogenous sets of discourses and practices. Yet presenting them schematically, in opposition to one another, serves as a useful analytic device for unpacking the underlying onto-epistemologies of design imaginaries.

At the highest level of abstraction, I have defined the overarching design commitment of Buen Vivir as *expanding the space available for relationality to take hold* (see introduction). I use the language of the World Bank’s 1975 report to define the overarching commitment of “Big Development” (i.e., the predominant, conventional development model) as, “increasing production and raising productivity.” I disaggregate this broad schema into three domains of teleology (or the object of activity); ontology (the nature of “what is” and the relationship among entities); and epistemology (knowledge systems and ways of knowing), as presented in table 1. In my analysis, I use this conceptual framework as a heuristic for examining the qualities of the Voces y Manos team’s emergent collective design imaginaries.

<p style="text-align: center;"><b>Big Development</b></p> <p style="text-align: center;"><i>“To increase production and raise productivity”</i></p>	<p style="text-align: center;"><b>Buen Vivir</b></p> <p style="text-align: center;"><i>“Expanding the space for relationality to take hold”</i></p>
<ul style="list-style-type: none"> <li>• <b>Telos:</b> Oriented toward externally imposed design imaginaries (e.g., progress, modernization)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Telos:</b> Oriented to the revitalization of Indigenous life projects</li> </ul>

<ul style="list-style-type: none"> <li>• <b>Ontology:</b> Nature as object to be exploited/ resource to be managed</li> <li>• <b>Epistemology:</b> Western epistemic superiority; need for “knowledge transfer” to the Global North to Global South</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ontology:</b> Mother nature as subject (e.g., “we care for the earth, the earth cares for us<sup>21</sup>”)</li> <li>• <b>Epistemology:</b> Validity of multiple knowledge systems; Need for “dialogue among knowledges”</li> </ul>
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Mindful of the risk of reproducing the status quo (in this case, reproducing the status quo of “big development”), in the analysis that follows I attempt to uncover the co-construction of collective design imaginaries in Voces y Manos’ co-design activities. Using these dialogical opponents along the three domains of epistemology, ontology, and teleology as heuristic criteria for analysis, I examine how the emergent design imaginaries of the Voces y Manos team align with one or the other (or both) of these schematic representations. Mindful of the ways in which groups and individuals can voice ideologically contradictory positions without necessarily reconciling them (Philip et al., forthcoming), I consider ways in which the two dialogical opponents may co-exist with one another at the same time.

## Methodology

### *Context*

It is important to briefly describe the context in which the design imaginaries under analysis emerged. Immediately prior to the team retreat, the Voces y Manos team had made the six-hour journey from Rabinal to Guatemala City to witness the inauguration of Bernardo Arévalo, the country’s first truly democratically elected President since the election of Jacobo Arbenz in 1950, and the son of Juan José Arévalo, the first of Guatemala’s two Presidents of the “10 years of Spring” period.

The unexpected victory of Bernardo Arévalo was a watershed moment in Guatemalan history—not only because of the reforms that might be implemented by a social democratic President, but also because of the movement that had brought him to power. After Arévalo won the presidential election in a landslide, Guatemala’s so-called “covenant of the corrupt” (an unholy alliance of conservative politicians, business elites, corrupt judges, and drug gangs) launched a concerted attempt to delegitimize and nullify the election results. In response, the Guatemala people rose up in a nonviolent, nationwide movement led by Indigenous Ancestral authorities from throughout the country (Arroyo, 2024; Russell & Bakal, 2023)

By the time I returned to Guatemala for my second fieldwork stint in November 2023, Voces y Manos was already deeply involved in this movement, which had connected them with Indigenous leaders of all ages from across country. At great personal expense, Indigenous

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<sup>21</sup> The phrase comes from a young person involved in a 2019 youth leadership workshop in Maya-Achi territory, quoted in Bakal & Reyes (2023)

communities throughout the country took turns camping out and providing meals and cultural programming to maintain a permanent presence outside the headquarters of Guatemala's much-despised public Ministry. The tapestry of food, dance, music, and solidarity chants they brought from every region of the country marked a stark contrast to the austere imposing grey of the Public Ministry, surrounded at all times by armed guards. The trips from Rabinal to Guatemala City, were exhilarating but grueling, often requiring a 2am or 3am departure from Rabinal to arrive in time for morning activities. So, attending the inauguration was a chance for the Voces y Manos team to celebrate an achievement made possible by much hard work and sacrifice.

We travelled to Guatemala City a day early to enjoy the festivities. The Maya-Kaqchikel singer-songwriter Sara Curuchich would be performing, and Arévalo himself was scheduled to deliver an acceptance speech in Guatemala's central square at 2:00pm. Yet when 2:00pm arrived, whispers began to spread among those in the crowd that Arévalo's swearing in at the congress was several hours delayed, raising alarm that Congress was engaging in a final attempt at election interference. By 4:00pm, the crowd had grown uneasy. A spokesperson of the Indigenous authorities took to the microphone: "We will march to the congress," he said. "We will let it be known that Congress has a choice: either they fulfill their constitutional obligations to swear in the new President, or we will do it!" The crowd roared and began to march toward the congress. Police with shields and riot gear pushed the crowd backward once it reached the block where the congress building was located. The uncertainty and tension continued until 10:00pm that evening.

Amidst the uncertainty, inauguration festivities proceeded according to schedule. Rebecca Lane, a rapper from Guatemala City, joined Sara Curuchich, a Maya-Kakchikel singer-songwriter in performing for thousands gathered on Guatemala City's sixth avenue. Watching the concert and wondering whether we were in the midst of a coup or democratic transfer of power, the moment felt surreal. I looked at Astrid, one of the promotores. Her eyes were fixed on Sara Curuchich, banging her half-shaved head up and down as she played her electric guitar in the traditional corte and Guipil from her territory. Her powerful voice filled the heart of Guatemala City with the Maya-Kaqchikel language. "Incredible – the passion and emotion she brings," Astrid said, "It brings out the best in you." As the future of the country seemed suspended in time, so too did many of the binary divisions — urban vs. rural; Ladino vs. Indigenous; traditional vs. modern — delineated in most historical accounts of the country.

After many more hours of uncertainty, amidst the looming threat of a coup, Arévalo finally gave his acceptance speech at around 2:00 am. In the speech, Arévalo spoke directly to the country's young people and Indigenous leaders for their vision and leadership. It was without question a moment in which the country's Indigenous majority had demonstrated their moral leadership, and political power, one which created a sense of hope and possibility which carried into the leadership retreat.

The next day, exhausted but exhilarated, we loaded into cars and made the three hour drive to the mountains above Rabinal for our leadership retreat. It was clear from our conversation in the car ride that we shared the sense that they were waking up to a Guatemala that was distinct — in

ways that had yet to be determined — from the Guatemala we had known previously. I believe this experience contributed to an expansive sense of possibility, hope, and imagination that came to shape the design for emergence activity.

### ***Organization of the Retreat***

The retreat was located at a recreation center high in the mountains above Rabinal. The team stayed in two large cabins, overlooking a gushing river, surrounded by lush vegetation. Throughout the three-day retreat, the team ate and cooked meals together, took hikes, and did range of trust building activities. The setting and organization of activities likely enabled “social dreaming,” (Espinoza, 2009; Gutiérrez, 2008), and thus shaped the design imaginaries which emerged.

For example, before the design for emergence activity, each person in the Voces y Manos team took some quiet moments to themselves to sit by the river and reflect on the five core values of Voces y Manos, which we had collaboratively defined the day before. The guiding question was: “what is the value/energy you bring to the group?” The team members then shared out their responses with one another.

The cornerstone of the retreat — and the focus of my analysis — is the “design for emergence” activity, in which small groups working collaboratively to develop new project ideas to be incorporated in the next phase of design. Taking place on day two of the retreat, the Voces y Manos team split into two groups, with each group assigned to two of the four *caminos de Buen Vivir* (pathways to Buen Vivir, see figure X, chapter 1). Each group designed two aspirational projects, one for each of the caminos to Buen Vivir they were assigned. Groups were organized to leverage a variety of perspectives and expertise (e.g., educators, agroecologists, administrative teams worked on integrated teams together.)

### ***Data Collection and Analysis***

My analysis focuses on the presentations and discussions of two project proposals, one from each of the two groups. These presentations focused on the paths of: (1) Buen Vivir pedagogy and (2) food sovereignty, respectively. I selected these particular projects because they were representative of themes identified across all four presentations. Likely because these were the first two of the four presentations, they contained the longest, and most in-depth discussions. I video and audio recorded this activity in full, using a single camcorder and audio recorder. Using a thematic analysis (Clarke & Braun, 2014) approach, I focused my analysis primarily on the characteristics of the design imaginaries which emerged as the Voces y Manos team members shared their project ideas. I also analyzed the posters of each team, moving between the written words of the posters and what was emphasized in the verbal presentations to develop a sense of which aspects of the projects were highlighted. I also attended carefully the full group discussion that proceeded each presentation, attending to which ideas were taken up and granted salience by

the non-presenting group. (Typically, a group would present their project idea for around 15 minutes, followed by 15-45 minutes of discussion.)

My analytic procedures were as follows: Immediately following the retreat, I transcribed and photographed each of the posters developed by teams. I then created content logs and analytic memos to summarize key ideas and themes generated by each of the groups. To identify focal segments for my analysis, I carried out a first-level, top-down coding of content logs, in which I labelled data segments according to the three broad categories of: (1) epistemology (2) relationality or (3) sociopolitical ends. At this stage, I attempted to develop a general sense of data segments that spoke to these three dimensions. Doing this first level of coding, it became clear that these three categories were so closely bound together that they were difficult to disentangle, and selecting vignettes to illustrate one of these criteria alone would have obscured more than it clarified.

Thus, rather than attempt to identify segments of dialogue according to my top-down coding scheme, I instead took the *content and discussion of the project as a whole* as my unit of analysis. That is, rather than focusing primarily on discursive or interactive markers, or the sense-making of individuals, I attempted to capture a general sense of key characteristics of the emerging design imaginary of the team as a whole. In order to do this, I produced an extended transcript of two of the project presentations, one for each of the two groups. To guide my analysis, I wrote up a descriptive vignettes for each transcript which attempted to contextualize the transcript, and organize it as a narrative vignette. To produce the vignette, I moved between various artifacts (my field notes and activity logs written up immediately after the activity; posters created by each group; and repeated viewings of video recordings of group presentations) in order to develop a complete picture. In a secondary level of analysis, I attended to the kinds of issues raised, who raised them, how they were taken up, and which themes tended to recur across projects. My aims with each empirical vignette were to thoroughly describe the project as it was presented by the groups, and also to highlight key segments of dialogue to illustrate the kinds of issues that were raised and granted salience by both the presenting group and the audience.

Next, I developed a set of bottom-up codes, informed by what I saw emerging as salient in videos within each of the three categories of relationality, epistemology, and telos. These secondary codes were also informed by my reading of the post-development and Indigenous education literatures. These codes attempted to capture what I saw as relevant, repeated trends in the team's emergent design imaginaries. I particularly focused on terms or phrases which tended to recur repeatedly, such as "recuperation of ancestral knowledge." I then recorded my transcripts applying this set of secondary, bottom-up codes.

Finally, I identified a key, representative segment of dialogue from my extended transcripts of the group's presentations. To select key dialogue segments, I rewatched segments of video to select those which had a particularly rich density of turns of talk and engagement with the themes of epistemology, relationally, and sociopolitical ends. These were privileged over, for example, segments which focused primarily on the logistics of project implementation. (At times, the conversations tended toward an emphasis on implementation logistics; when I noticed

this happening, I would periodically remind the group that questions of logistics would be taken up at a later time in the planning process; that the current focus was on broad vision, goals and strategies to guide our activities over the next several years.) Based on codes that occurred most frequently, I selected key excerpts, which I summarized using conventions of discourse and interaction analysis.

## **Findings**

In what follows, I present a comprehensive summary of two groups' presentations of long-term projects designed to address two of the four pathways to Buen Vivir. The first presentation focused on "Pedagogy of Buen Vivir," while the second group focused on "Food Sovereignty." For each empirically-derived vignette, I first provide a summary and overview of the group presentations, illustrated with representative quotations. I then present a segment of dialogue for more in-depth analysis. In both vignettes, we see common patterns emerge: a general orientation of design toward the revitalization of ancestral practices; an epistemic openness toward multiple ways of knowing which privilege Maya-Achi knowledge and practices, and a general concern with designing activities with relationality in mind. I use direct quotations as much as possible, including both the English and original Spanish.

### ***Vignette #1: Designing & Envisioning a Pedagogy of Buen Vivir***

The first group to present focused on "pedagogy of Buen Vivir". The group presenting on this topic consisted of Yenifer, Loida, Clara Luz, and me. A core issue that the group sought to address with this project is what we had begun calling "transcendence of knowledge" (*trascendencia de conocimientos*). This refers to efforts aimed at ensuring that ancestral knowledge, spirituality, and cultural practices are not lost to future generations.

Recall from chapter 2 that this issue first emerged in community focus groups, during which adults lamented what they perceived as the loss of practices of conviviality among younger generations. The issue was discussed extensively during Voces y Manos' designing for emergence/strategic planning process the year prior, at the start of 2023. During the course of that year, Voces y Manos developed a project proposal to create agroecological gardens in elementary schools, as an anchor for bringing children into dialogue with elders from their community. A grant proposal based on this idea had recently been awarded funding, which meant that this project was already transitioning from speculative idea to concrete project. This may have been one of the reasons that the conversation at times focused heavily on practical questions of implementation.

The vignette that follows opens with Yenifer, the first presenter from the group, describing the project. Yenifer is one of the most senior members of the Voces y Manos, and is responsible for leading the project. Loida, a newcomer to Voces y Manos, then picks up where Yenifer leaves off and finishes the presentation before opening for discussion.

### Yenifer and Loida Introduce the Project: From School Gardens to Home Gardens

Yenifer opens by defining “*Pedagogy of Buen Vivir*, as follows: “que las comunidades tengamos el espacio de aprender pero no de la forma estructural de las escuelas / *that we in the communities have the space to learn, but not in the structural form of schools*” she says. Harkening back to discussions we in *Voces y Manos* had had on the LOPI model (Learning by Observing and Pitching in) (Rogoff & Mejía-Arauz, 2022) at the beginning of the program in 2020, she then describes the difference between these two models (formal schooling and community learning), emphasizing that in formal schools, students typically learn while seated in rows listening to teachers’ instruction, whereas at home, young people learn “a traves del juego y la observation / *through play and observation.*”

To illustrate the difference, she reminds the team of a photograph that our coworker, Gregorio had once circulated to the team’s WhatsApp thread of his young son working in the field, “jalando un asadon / *pulling a hoe.*” This, Yenifer says, is an example of “pedagogy of buen vivir.” She elaborates by explaining that in Buen Vivir pedagogy, children learn from parents and other family members, and often learn through play. As an example, she describes how children learn to make tortillas by playing with a little ball of masa given to them by their parents. They play with the masa, as they watch their mothers make tortillas, and eventually develop enough skill and confidence to make tortillas for the family.

Reflecting themes raised by focus group participants (see chapter 1), Yenifer emphasizes that what is being learned here is not only a specific skill, “pero tambien convivencia / *but also convivencia.*” She says there are many other examples of this kind of learning in the community, stretching out her syllables to emphasize just how ubiquitous such forms of learning are: “el tejjiiido (weaving), con agricultuuuura (in agriculture).”

She follows these examples of the learning of specific skills with a discussion of the way that people in the communities of Rabinal learn to show respect for elders by “dándoles el camino” (directly translated as, “giving them the path,” a practice of stepping out of the way when elders walk by) and greeting them with the honorifics “ay” and “ta.” All of these practices involve learning, Yenifer explains.

Yenifer next reads off the title of her group’s project: *Recuperación de las prácticas ancestrales a través de la trascendencia de conocimientos de agroecología hacia la niñez y juventud* / *Recovery of ancestral practices through transcendence of agroecological knowledge to children and youth.*” She explains that this year, the team will have the opportunity to implement this work as a pilot project, thanks to the fact that “now, we have a fund to be able to create this project.” From this point forward, the discussion will turn to more logistical concerns, yet in her brief introduction, she has clearly laid out the theoretical underpinnings of the project. First, through her distinction between a LOPI model and formal schooling, she emphasizes that the aim is not to engage children in didactic instruction, but rather observation and participation connected to milpa farming. Second, as the title indicates, the end goal is understood as “recuperation of ancestral practices,” which is closely linked to the recuperation of

agroecological knowledge. Third, she emphasizes that these practices are closely connected to values of respect, such as the respect for elders. Though not mentioned in her brief opening remarks, respect for Mother Earth was also extensively discussed in the groupwork leading up to the presentation.

Yenifer next moves into an extensive discussion of some of the logistical considerations that will be involved in the first phase of the project. She explains that the plan is to work with 2 schools, focusing on one school in the upper region, and a second school in the lower region; the project will focus on children in grades 2,3 and 4. She also explains the work will take place once per week, for one hour, and that the goal is to create community gardens within each of the schools. The project will include extensive hands-on work, including the construction of vegetable gardens, planting and learning about medicinal plants, and how to prepare the soil by using organic compost. A key activity is to involve the children in making *platillos típicos* — traditional dishes made out food they have grown within their gardens.

Finally, she explains that children will participate in *giras comunitarias* (community tours) where they will walk their communities, visiting elders to learn about the plants they grow and their uses, with a particular focus on medicinal plants and heirloom landraces. Picking up where Yenifer left off, Loida explains the purposes of these visits: "para que se den cuenta del trabajo que estan realizando los agricultores, para que se den cuenta el trabajo ya en grande, como se ve, como es / *So that they can appreciate the work the farmers do, so that they can appreciate that this work is big/important, what it looks like, how it is.*" She explains that seeing farmers growing the same crops "at a large scale" as they are growing in their school gardens will be motivating, and will help deepen their connection to their elders, their communities, and to their cultural heritage. The project also involves other forms of tools, such as *afiches de observacion*, which students will use to document various observations from their gardens, including the growth of the plants and any blights that are affecting them.

Loida continues by discussing the second and third phases of the project, as they are written out sequentially on the group poster. In the second phase, she explains, children will replicate in their homes what they learned in their school-based garden. She sees this activity reinforcing the same messages being promoted to the adults involved in the agroecology project: "*siempre enseñándole el buen vivir -- a no usar químicos ni nada. Por ejemplo, que las plantas medicinales pueden servir como repelentes [de insectos] | Always teaching them el Buen Vivir – to not use chemicals or anything. For example, that the medicinal plants can be used as [insect] repellants.*" We thus see the notion of Buen Vivir suffusing the design imaginary here, with emphasis placed on intergenerational learning instantiated in several different forms: learning from the promotores, learning from elders, and ultimately attempting to bridge home- and school-based learning by bringing into the school setting the kind of practices that are today being threatened by migration, globalization, new technologies, and agrochemicals.

Finally, Loida explained that the third phase would be a documentation and celebration of children's community gardens. She shares a few open-ended ideas to begin a brainstorm, such as: bringing the full class of students on a walking tour to visit the gardens created by each child

in their homes; offering each student a certificate of completion; and perhaps offering students first, second, and third place prizes for “best garden.”

*Group Discussion: Recuperating Ancestral Practices of Communities*

The ensuing group dialogue takes the form of a brainstorm of additional, creative activities that can be woven into the school-based project just described. Dayana (from the non-presenting group) suggested giving each student a small number of fruit trees to plant in their homes. I mention an idea that had been generated at the end of the previous year: making sure that children have an opportunity to learn about traditional leadership roles in the community, such as *comadronas* (midwives) and other traditional healers, as well as experienced farmers. Yenifer picks up this idea by explaining that this can be included as part of the community *giras* (*tours*) she had just described. Yenifer also adds that the project can culminate with a year-end ceremony, including parents, along with other community leaders.

Before transitioning to the next group, I suggest that we take a moment to step back from logistics to revisit the "the objetivo a fondo..." (the deeper objective) of the project, the pathways to *buen vivir*, and the extent to which the project addresses identified contradictions. The dialogue that follows is shown below:

**Segment 1.a. School gardens as cultural revitalization**

Line	Speaker/Action	Spanish	English
1.	<b>Michael</b> <i>Calls names of Alejandra, Dayana, and Astrid [Tista] asking for participation from those who were part of non-presenting group</i>	Sería interesante que ustedes	It would be interesting that you all comment—returning to the theory of Buen Vivir, and the contradictions we’ve identified: How much has this project helps to resolve the problem that we’ve identified? Someone from this group? Ale? Diana? Tista?
2.		comentan — regresando a la teoría	
3.		de Buen Vivir, y a las	
4.		contradicciones que identificamos,	
5.		¿Que tanto es que este proyecto	
6.		ayuda a resolver la problemática que	
7.		identificamos? ¿Alguien de este	
8.		grupo? ¿Ale? ¿Dayana? ¿Tista?	
9.			
10.			
11.			
12.			
13.	<b>Dayana</b> <i>Responds almost immediately</i>	Desde mi punto de vista, este	From my point of view, <b>this project would help to recuperate the ancestral practices of the communities.</b> So it’s like if I’m gaining interest of learning from my mother, from the things that she has planted, and why she does it [i.e., why she plants a particular way]. Right? Because sometimes my mom tells us “come on kids, let’s go plant some plants” [stern tone of voice]. And
14.		proyecto <b>ayudaría a recuperar las</b>	
15.		<b>practicadas ancestrales de las</b>	
16.		<b>comunidades.</b> Ya es como que <b>voy</b>	
17.		<b>asumiendo el interés de aprender</b>	
18.		<b>de mi mama,</b> desde las cosas que	
19.		ella ha sembrado, del porque lo hace	
20.		tambien de conocerlo, ¿verdad?	
21.		Porque a veces . . .mama nos dice	
22.		“vamonos patojos, vamos a sembrar	
23.		unas plantas” [tono de voz de regaño]	

24.		y allí se van [los patojos], <b>pero se</b>	there they [the kids] go, but they are
25.		<b>están integrando ¿verdad?</b>	integrated, right? So, it is about
26.		Entonces, es de ir identificando, si	identifying, if I want to learn this
27.		quiero aprender eso [alguna	[particular practice], if I'm interested
28.		práctica], si me interesa o no.	in it or not. So, for the kids to know
29.		Entonces, para conocer entre los	that there are projects out there <b>to</b>
30.		niños, conocer que hay proyectos que	<b>help recuperate the culture.</b> From
31.		apoyan también a poder <b>recuperar</b>	their own families, that sometimes we
32.		<b>lo que es, este, la cultura...de las</b>	have distinct ways of working, and it
33.		<b>propias familias,</b> porque a veces	would be a big step in the ability to
34.		tenemos distintos formas de trabajar,	instruct along this pathway. And if I
35.		y sería un gran paso para poder	don't want to, I don't want to. By the
36.		instruirle en este camino...y si no	same token, my sister likes
37.		quiero [aprenderlo], no quiero y	[agriculture]
38.		ya...porque igual en este caso mi	
		hermanita le gusta. . .	

In Dayana's initial response to my question, she enthusiastically connects the proposed project with the goal of recuperation of Maya Achí ancestral knowledge (lines 14-16). Her use of first-person pronouns (lines 16-18) indicates she is putting herself in the position of children, considering how they learn through participation in farmwork. She elaborates upon this by considering the experience of her own siblings in participating in farmwork, emphasizing that, even if their initial participation is coerced by parents' demands, their integration in the activity presents then with an opportunity to develop a passion for one aspect or another of agroecology (lines 26-18).

Before Dayana finishes, I excitedly share that her reflections remind me of a key contradiction we had identified earlier: young people no longer having interest in agriculture. Immediately following the turns of talk presented in segment 1.a., the conversation continues with me connecting the preceding discussion to back to that contradiction.

### Segment 1.b. Leveraging childrens' Funds of Agroecological Knowledge

Line	Speaker/Action	Spanish	English
1.	<b>Michael</b>	-Para ir abarcando esto; esto	So, to go about addressing this; we
2.	<i>As Michael</i>	hablamos también en [mi] grupo, que	talked about this also in [my] group,
3.	<i>speaks, Dayana</i>	a veces existe esto, de [donde la	that sometimes this issue exists, where
4.	<i>raises hands in a</i>	gente dice] 'porque quiero trabajar en	[people say] 'why would I want to
5.	<i>shrugging motion</i>	el campo? Esto es precisamente la	work in the fields? This is precisely
6.	<i>and nods</i>	idea de, [como] quitar esto porque-"	the idea of – [how] do we change this
7.	<i>vigorously</i>		because—
8.			
9.			
10.	<b>Dayana</b>	- porque a veces muchos dicen,	--because sometimes many people
11.	<i>Dayana finishes</i>	"trabajar en el campo, no, mejor otra	say, "working in the fields, no, better
12.	<i>Michael's</i>	carrera", y sin embargo, ellos no	to do another career," and yet, they
13.	<i>sentence making a</i>	tienen trabajo...en este caso mis	don't have work...for example my

14.	<i>face of disgust to dramatize of those who don't like working in the fields</i>	primos, muchos estan en casa, sin trabajo...no hay espacios [de trabajo]...bien podrían estar en casa siembrando, pero, <b>¿como ir cambiando este ideologia de nosotros como jovenes</b> [de no querer trabajar en el campo]? Pero vemos que hay unas posibilidades	cousins, they're just at home, without work since they graduated; their aren't openings [for jobs]. . . they could well be at home planting, but, <b>how go about changing this ideologies among us youth</b> [of not wanting to work in the fields]? But we can see there are possibilities.	
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.			¿Ale?	Ale?
24.		<b>Armando</b>		
25.		<i>Calling on Alejandra to speak</i>		
26.				
27.				
28.				
29.	<b>Alejandra</b>	A mi me parece un proyecto muy bueno porque además, como dice el nombre <b>es una recuperacion de conocimientos hacia los niños</b> . Creo que nos damos cuenta que en las comunidades <b>los niños de pequeños ya estan familiarizados</b> con sembrar un arbol, de ir a dar comida a un animal, incluso, digamos, ir a recolectar leña, pues ellos van detrás de mama porque saben, conocen que es lo que falta [en la casa].	To me it seems like a very good project, because in addition as the name says, <b>it is a recuperation of knowledge toward the children</b> . I believe we all know that in the communities, <b>the children are already familiarized from a young age</b> with planting a tree, how to feed an animal, even, we could say, going to collect firewood, so they follow after mom [to collect firewood], because they know, they understand what is lacking [in the house].	
30.	<i>Gestures with her hand, to indicate the height of a young child speaks quickly, and enthusiastically</i>	Practicamente, si va a llevar logistica, procesos logistica, monton de estrategia de como el tecnico encargado de este proyecto va a tener que explotar su imaginación con los los niños <b>porque los niños aprenden de la observación, de tocarlo, de sentirlo.</b>	Practically, [the project] will take a lot of logistics, many strategies by the technicians in charge of the project. They will have to search their imagination [in their work] with the children because <b>children learn by observing, by touching it, by feeling.</b>	
31.				
32.				
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34.				
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47.				

Dayana's vigorous nodding in response to my observation (lines 1-6) indicates she agrees with my assessment that the process she has just described addresses the contradiction of young people's declining interest in farmwork. She builds on this point by acting out the stance of young people who say they find farmwork labor intensive and poorly remunerated, and hence pursue other career paths (lines 10-13). She then shares her assessment that this school-based project creates opportunity to "change the ideology" (lines 16-19) of young people by exposing them to the joys of farmwork, and by helping them to see it as a viable form of income-generation in a context where other forms of work are quite limited.

To move the conversation along (likely noting that we are behind schedule) Armando calls out “Ale?” to invite Alejandra’s participation in a way that is simultaneously encouraging, prodding, and teasing. Alejandra says, echoing both the title of the project and Dayana’s previous assessment, that the project is good and worthwhile because it involves recuperating ancestral practices (lines 30-31). Alejandra emphasizes the many community practices that children already “are familiarized with,” including planting trees, feeding animals, and collecting firewood (lines 34-37). Interestingly, in contrast to Dayana’s emphasis on adolescents who have lost interest in farmwork, Alejandra emphasizes the many “funds of knowledge” (Moll, 1998) that can serve as a resource on the project. Alejandra also emphasizes that children’s participation in these activities is based on their desire to be helpful “(porque conocen que hace falta [en la casa] / *because they know what is lacking [in the home]*”). Her comments together with Dayana’s illustrate two sides of the same contradiction: on the one hand, some knowledge and practices may be lost, yet at the same time, children remain engaged in a wide range of agricultural practices that connect them to the land. Interestingly, by working through the contradiction in this future-looking, creative mode of envisioning future cycles of activity, a major concern of adults in the Maya-Achí community — young people losing of interest in Maya-Achí methods of farming — was reframed away from an inevitable process of knowledge loss or generational change to creative strategies to build upon the cultural practices children already participate in and in which they find joy.

Alejandra speaks with enthusiasm and excitement about the creativity and imagination involved in working with children. She emphasizes the importance of involving them in hands-on activities and that engage all their senses (lines 45-47). Beyond the content of her speech, there was a palpable, felt sense of enthusiasm in Ale’s comments, which eventually led Armando to ask her (after the retreat) whether she would want to be involved in the school-based project. (Up to this point, she had only planned on continuing her work with adults in the program). Alejandra enthusiastically agreed.

Through this dialogue, we are beginning to see convergence around a design imaginary committed to the revitalization of ancestral agroecological knowledge, as indicated in both Dayana and Alejandra’s initial responses to the merits of the project. Marking a significant departure from cognitivist models of learning, Alejandra, Dayana, and Yenifer all articulate a theory of learning agroecology through participation in agroecology – a process which begins in the home and can be deepened through children’s participation in the project. Furthermore, the kinds of creative strategies and ideas that were generated focused on how to best involve children in learning from elders in their communities. While certain classic Western STEM modalities are involved in the design (e.g., use of observation sheets, the taking of measurements), these are clearly envisioned as being syncretic (Gutiérrez, 2008) with and supportive of Indigenous knowledge.

Thus, in this emergent design imaginary of a pedagogy of Buen Vivir, we can discern the deep engagement with the role of community-based models of education, and creative re-imagination of how such models might be taken up by a school system which has historically been deeply implicated in colonization, exclusion, and the delegitimization of the Mayan culture and language. This prefigurative design imaginary took hold in the iterative, creative co-construction of specific activities among the members of the presenting group and the listening group, and among members of the Voces y Manos team of diverse forms of expertise and experience, as we will see.

Finally, it is interesting that more senior members of the Voces y Manos team (Armando, Yenifer, and I) at times engaged in the school-like practice of calling on people by name, to invite their participation. This practice was generally met with quite lengthy, extended reflections, showing that perhaps a gentle “push” was helpful, even welcome, in overcoming an initial timidity to speak. In the case of Alejandra, her remarks were so enthusiastic that they led to her eventually becoming highly involved in the project. This again speaks to the importance of role-remediations which help break rigid hierarchies between “designers” who develop projects, and “front-line staff” who follow instructions and implement projects. Paradoxically, achieving those role re-mediations at times seemed to involve leveraging existing powered expectations (e.g., of who has the power to call on people to speak) in order to ultimately challenge them.

### ***Vignette #2: Designing & Envisioning Food Sovereignty***

The second group to present focused on the domain of food sovereignty (*soberanía alimentaria*), and the spokesperson for the group was Dayana, who has just completed her first year of an internship with Voces y Manos. The vignette is presented in three sections: First, I discuss how Dayana defined food sovereignty and described her group’s project to promote it based on this unique definition. Next, I provide an overview, in two segments, of the full-group conversation which ensued.

#### *Dayana’s Presentation: Design Imaginary of Seed Saving and Food Sovereignty*

Dayana opens her presentation by reading the title of the project her group developed: "produccion de semillas de granos basicos y hortalizas en parcelas modelos con planes de manejo organico y bioinsumos / production of seeds for basic grain and horticultural seeds in model parcels, with organic management and bio" She then gives a definition of food sovereignty: "es producir y consumir productos orgánicos a traves de prácticas ancestrales, que es, principalmente, resguardando las semillas nativas y criollas de nuestras actividades / *it means to produce and consume organic products by means of ancestral practices, which is principally, saving native seeds in our activities.*"

Thus, while the group's overarching topic is food sovereignty, they focus on one specific dimension of it: saving native seeds. Before Dayana delves into the specifics of the project, Armando (part of Dayana's group) jumps in to provide context on why they have chosen to focus on seed saving. Harkening back to the core contradictions introduced in the previous chapter, Armando explains that the team's efforts during the previous year were hampered by the dearth of farmers who actively produce and save heirloom seed varieties. Hence, the team's proposal is to teach families how to save seeds, create small seed banks on their land, and harvest and re-plant their own seeds at no cost year after year.

Dayana builds on Armando's point: "it is critical," she says, "to identify producers – those who produce their own native seeds so that we can buy from them." But before that, she emphasizes the importance of first building the capacity of the Voces y Manos team in how to do seed selection, so that they can teach these practices to the farmers they work with.

Over the next 10 minutes, with occasional interjections from team members, Dayana lays out, in step-by-step fashion, how the team will pursue this goal. First, she says, they will "identify the strengths of each family (*identificar las fortalezas de cada familia*)" She elaborates that some farmers with a specific interest in horticultural plants (*hortalizas*) will be supported in saving seeds from those plants, while those more interested in grains (*granos básicos*, such as corn and beans) will be supported in saving seeds for those plants. Once farmers have been identified, the next step is to bring those farmers together for training and knowledge exchange. At an initial meeting, they will receive a workshop on soil health. Yet this workshop will not be didactic, but rather will involve farmer-to-farmer learning, oriented toward the specific needs of each family. "It is very important that [the farmers] have information based on their specific contexts," she says. Furthermore, Dayana emphasized that while it is important for farmers to be instructed in the basics of soil health, the *promotores* will also learn from the farmers: "we will also be strengthened by means of the experiences and the practices that they will give us in the space" (*también estaremos fortalecidos por medio de las experiencias y prácticas que ellos nos darán en el espacio*) she says. In this way, we see an emphasis on dialogical pedagogy, rather than a one-way "extension" of information (Freire, 1973).

Moving on to subsequent steps of the proposed project, Dayana explains that following the training, the *promotores* will support each participating farmer, both in using soil conservation techniques and in saving native seeds. For each farmer, they will develop a "plan de parcela" or general plan for the management of their parcel, based in agroecological principles. After the harvest, Dayana explains, farmers will be invited to participate in a second workshop, now focused on how to select seeds for saving, and how to properly store them (e.g., in dry conditions) to be planted the next year. Once again, this is not envisioned as a top-down training but rather a process of "intercambio de experiencias" (*exchange of experiences*) in which farmers can discuss strategies that did and did not work for them.

She also ties in a second contradiction, that of agrochemicals, even though it is not explicitly mentioned on her group's poster. Dayana paraphrases farmers' sense that "without agrochemicals, I can't produce anything." She suggests that the exchanges between farmers can

be a space in which “we can emphasize the experiences of producers, that some have had good harvests without agrochemicals” (*se puede recalcar las experiencias de los agricultores, que algunos han tenido buenas cosechas sin agroquímicos*). In other words, the space for exchange of knowledge among farmers can encompass both the exchange of knowledge about seed saving, as well as the exchange of knowledge of alternatives to agrochemicals. Once again, it is through dialogue and the exchange of practical experiences among farmers that Dayana and her team envision overcoming this contradiction of agrochemical dependency.

Dayana concludes her presentation by referencing how this project responds to a third core contradiction: that people continue to purchase hybridized seeds, when they could be growing native seeds. She sees this project responding to the contradiction by equipping farmers to have the knowledge, resources, and community encouragement to save their seeds, and along the way, save money:

Como hablamos, verdad, en las contradicciones, a veces producimos y compramos. Pero que mejor si producimos nuestros propios semillas para no tener que guardar dinero para comprar las semillas mejoradas.

*As we talked about, right, with the [discussion of] contradictions sometimes we produce [corn] and we buy [different corn]. But how much better if we produce our own seeds and not have to save money [just to] buy “improved” seeds.*

Group Discussion: Co-imagining and co-creating food sovereignty

Following her presentation, Dayana invited input from the full Voces y Manos team. Mindful that we have a newcomer to Voces y Manos who may not be familiar with the concept of food security, I begin by asking Dayana to say a bit more about the connection between the project and the overarching “eje” (domain) of food sovereignty. Dayana extends upon her earlier definition and elaborates on how this project will be sustained and expanded upon over the long-term:

**Segment 2.a: Co-creating, not imposing practices**

Line	Speaker/Action	Spanish	English
1.	<b>Michael</b>	Hacemos un poco la conexión con	Let’s make the connection to Food
2.	<i>As Michael</i>	soberanía alimentaria. Que es, y como	Sovereignty. What is it and how are
3.	<i>speaks, Dayana</i>	es que estas actividades ayudan a	the activities achieving it?
4.	<i>gestures to the top</i>	alcanzar la soberanía alimentaria?	
5.	<i>part of poster and</i>		
6.	<i>smiles</i>		
7.			
8.	<b>Dayana</b>	Bueno, como muy bien lo decía,	Well, as I said very well, it is...food
9.	<i>Gesturing to</i>	es...la soberanía alimentaria abarca	sovereignty covers a lot, mainly in
10.	<i>poster</i>	mucho, principalmente en producir y	producing and consuming
11.		consumir lo que ... con las practicas	what...with the practices carried out
12.			

13.		que se realiza en cada uno las comunidades -- <b>prácticas ancestrales.</b>	in each community - <b>ancestral practices.</b>
14.			
15.			
16.		Entonces acá, en todo esto <b>no es que nosotros vayamos a ir imponer practicas</b> sino van a ser con las mismas practicas de los agricultores.	So here, in all this, <b>it's not that we are going to impose practices</b> but rather it will be with the same practices that the farmers are using.
17.			
18.			
19.			
20.			
21.			
22.		Y ellos...la sostenibilidad de ellos es que ellos van a estar produciendo, y pueden consumir lo que producen, y pueden distribuirlos en las comunidades	And they...their sustainability [of the activity] is that they are going to be producing, and they can consume what they produce, and they can distribute it in the communities
23.			
24.			
25.			

In Dayana’s initial response to my question, we hear a re-iteration of key elements of the unique definition of food sovereignty that she provided earlier. She once again emphasizes the centrality of ancestral farming practices as central to food sovereignty (lines 12-13). This emphasis on ancestral practices is tied to a respect for farmers’ existing knowledge practices. She emphasizes that the project will not involve “imposing practices” (lines 15-17) but rather leveraging and expanding upon what farmers already do, largely by bringing farmers together to exchange practices and dialogue with one another.

Through her extended definition, Dayana mentions the idea of a “feria de semillas” — a seed fair. The idea was not included on the poster, so she checks with her groupmates to confirm whether this activity might be included as part of the project, and if so, what it might look like. The conversation continues below:

**Segment 2.b:** *Envisioning how to save native seeds*

Line	Speaker/Action	Spanish	English
1.	<b>Dayana</b>	aja, en las semillas, compartirlas con los demás, y incluso, creo las ferias de semillas...ya no se está contemplando? En estos pequeñas plazas de tiempo, pero quizás con esto ya podemos ya podemos-- pensar en algo más amplio.	aha, with the seeds, sharing them with others, and even, I think with the seed fairs...are we still planning on doing seed fairs? Maybe within these small timespans we can think of something bigger
2.	<i>Gesturing to poster, facing outward to the group</i>		
3.			
4.			
5.			
6.			
7.			
8.			
9.	<b>Michael</b>	Como?	What?
10.	<i>Asking for clarification (off camara)</i>		
11.			
12.			
13.	<b>Lilian</b>		
14.	<i>Affirms seed exchange is part of plan (off camara)</i>	Se tiene [incluido] el intercambio [de semillas]	Yes, we have the [seed] exchange
15.			
16.			
17.			

18.	<b>Michael</b>		
19.	<i>Clarifying again whether</i>	Si, me parece el intercambio de	Yes, it appears to me that the seed
20.	<i>seed exchange is part of</i>	semillas no se si esto tienen?	exchange...is this is part of...
21.	<i>plan (off camera,</i>		
22.	<i>Overlaps with Lilian and</i>		
23.	<i>Dayana)</i>		
24.			
25.	<b>Lilian</b>	Siiii	Yessss
26.	<i>affirms (off camara)</i>		
27.			
28.			Yes, we have planned to do this as a
29.	<b>Dayana</b>	Si, esto tenemos contemplado	small fair where they [farmers] will
30.	<i>Gesturing to poster,</i>	hacerlo como una pequeña feria	showcase their products. If this time I
31.	<i>facing outward to the</i>	donde [los agricultores] van a dar	harvested bananas, why not take them
32.	<i>group</i>	a conocer sus productos. Si esta	there [to the seed fair]. Squash, seeds,
33.		vez coseché banana porque no	boxbol [a traditional dish made of
34.		llevar allá, ayotes, semillas,	squash leaves], they are small things
35.		boxbol, son cosas pequeñas que	that they will have in mind based on
36.		van a tener en cuenta a base a la	food sovereignty
37.		soberanía alimentaria	

In responding to my question about the connection between food sovereignty and native seed saving (segment 2.a.) Dayana invokes the idea of a “*feria de semillas*” — a seed fair. She then quickly wonders aloud as to whether that particular idea was part of her group’s plan, since it was not written the poster. Lilian, one of the team leaders, jumps into to affirm that this activity is indeed part of the intervention they have outlined.

Having received this affirmation, Dayana then briefly elaborates on some of the other specific activities which could be involved in this seed fair, including selling or exchanging other produce and traditional dishes (in addition to the swapping of seeds). Including traditional dishes based on agroecologically grown produce – such as the dish boxbol that Dayana references — was one of the ideas routinely proposed by the Voces y Manos team to promote culture, sustain ancestral farming knowledge, and improve health. Dayana’s use of first-person pronouns (*si está vez coseché banana* / if I grew bananas this time) indicates she is hypothetically putting herself in the “shoes” of participants (lines 31-37) to contemplate the specific ways in which they might engage in the seed swapping activity. This is a routine practice, which I see as a kind of speculative strategy for considering the consequentiality and relevance of various activities from the perspective of participants. It is a practice which is only possible because of their close relationship with farmers.

*Ongoing discussion: Validating Design Imaginaries with First-hand Community Knowledge*

Recognizing that thus far, Armando and Michael (older, male participants) have been calling on more junior participants, we encourage Dayana, as presenter, to ask people from the other team to share their thoughts.

Dayana first asks Michael to share his reactions. I say that I am excited by the idea of a seed fair, as it moves beyond merely exchanging native seeds to providing an educational space where people can learn about their importance and uses (e.g., in traditional dishes). In my comment, I reference the concern raised after the previous years' seed exchange activity that seed swaps took place rather quickly, without adequate time for reflection and discussion on the "deeper meaning" of the seeds. I say that the seed fair idea offers an opportunity to deepen this activity.

Dayana nods and then calls on Loida, who only joined the Voces y Manos team a few days ago. Emphasizing points raised earlier, Loida says she finds the project to be "a very good idea, because native seeds are slowly being lost, as more and more people have been purchasing seeds from agricultural supply stores." In contrast, she emphasizes that when you grow seeds on your own land, "you can be 100% sure it is organic."

Finally, Loida mentions the advantages of exchanging seeds: "every community will have their own variety" she says, and so, "by exchanging seeds, communities can make sure that their seed varieties are maintained." Though she is a newcomer to Voces y Manos, Loida expressed a shared sense of concern about the widespread loss of native seeds and hope that the seed exchange activity could constitute a meaningful response. Indeed, distrust of, store-bought hybrid seeds are widespread in Rabinal, even if they are purchased ubiquitously. By providing an opportunity for communities to exchange seeds with one another, she sees the seed fairs providing a valuable opportunity for helping maintain native seed varieties.

Finally, Dayana asks for Clara Luz to share her thoughts. Like Dayana, Clara Luz has one year of work as a promotor, and Dayana specifically asks Clara's to share her thoughts based on her previous years' experience on the project. Clara Luz responds by sharing a story not from her work per-se, but of a conversation she overheard in an agricultural supply store between an elder gentleman and the store clerk. The elder had come to the store to make a complaint about the hybridized seeds he had purchased from the store previously. Reporting the elder's words, Clara Luz says, "'Look, these seeds you sold me, they didn't sprout! I want a reimbursement!'"

Moving from reporting third party speech to voicing her own perspective Clara Luz says,

you see how the practices they [agricultural supply stores and the corporations they are tied to] have imposed on us have influenced our culture? And now we don't have the courage to defend what is ours (*lo nuestro*), to plant what is ours and conserve our heritage – our most valuable heritage that our grandparents have left us, which is our foods, our maize, which we have lost so much of. And with these ideas that they [the agricultural supply stores] have put in our heads, we have gotten sick more, and we are even seeing new kinds of sicknesses

She then contrasts this story with a second story of her brother and father. She tells us that once her brother asked her father why he does seed selection. "Look," Clara Luz's father said to him, "I did an experiment, I just planted the seeds from a single ear of [heirloom] corn, and look, it all sprouted!"

Through these two stories, Clara makes a contrast between what she sees as the false promises of purchasing “improved seeds” from agricultural supply stores, and the practices of seed saving, which her and her family have found to be successful. She also makes an ontological claim about the quality and value of the seeds, calling them, “the most valuable heritage our grandparents have left us.” It is noteworthy here, first, that the affective social context of this activity is one in which Clara Luz’s expertise, as a relative newcomer to the program, is invoked and valued, and second, that Clara Luz leverages that expertise to report on her own families’ experience growing native corn varieties. Clara is not making a claim here that her own father’s experience constitutes experimental validation of the universally superior germination rate of native corn varieties. Rather, she is reporting on the hopeful, positive case of her own fathers’ success at preserving the heritage carried by native corn seeds, as an inspirational exemplar. As described in chapter 2, the sharing of positive, first-hand accounts of successful practices was identified as a particularly effective pedagogical strategy for working with farmers. In a similar way, we see reported, first-hand accounts drawn from promotores’ personal as well as professional experience, playing a key role in shaping the team’s design imaginaries.

## **Discussion**

In the two extended vignettes presented above, we began to see clear patterns in the underlying commitments and values that took hold among the Voces y Manos team. Team members expressed what were clearly shared commitments to the recuperation of ancestral practices, to the saving of native seed varieties, to the “transcendence” of knowledge and cultural practices across generations, to reducing the use of agrochemicals, and to empowering farmers through a “campesino-a-campesino” mode of co-learning. How do these emergent themes and patterns reflect, challenge, reproduce or transform the underlying premises of Big Development? What do they tell us about the team’s emergent, co-constructed meaning of Buen Vivir, and how do these speak to the themes of reflexivity, provisionality, and dialogue which are so central to the utopian methodological approach?

Recall that I summarized the design imaginary of Development, in the words of the World Bank, as being committed “*to increase production and raise productivity,*” and that of Buen Vivir as “*expanding the space for relationality to take hold.*” Below I analyze how the design imaginaries of the Voces y Manos team align or challenge each of those visions, along the three axes of telos, ontology, and epistemology.

### ***Unpacking the Design Imaginary Telos: Recuperation of Ancestral Knowledge***

In contrast to conceptualizing the object of their activities in a manner narrowly tied to productivity, the design imaginaries of both projects (school-based gardens and seed saving) were clearly oriented toward the recuperation of Maya-Achi knowledge and the revitalization of

ancestral agroecological practices. This was evident in the goal-definition of the first project as “recuperation of ancestral practices.” It was also evident in the reflections of the non-presenting group. Upon listening to the first group’s presentation, both Alejandra and Dayana used the phrase “ayudar a recuperar las practicas ancestrales” (help recuperate ancestral practices) in their reflections on what made the project good and worthwhile, indicating convergence (Philip et al., 2018) around this as a key goal.

It was also noteworthy that both projects were seen as direct responses to contradictions connected to the loss of Maya-Achí ancestral knowledge and cultural practices. While the first project was a response to the challenges of passing traditional knowledge to future generations, the second project directly addressed the problem of the loss of native seed varieties. It was noteworthy, first, that the emergent design goal was connected to food sovereignty, which Dayana described as helping farmers so that they can “consume what they produce.” This contrasts markedly with the vision of food security of major development agencies, which aim to increase incomes predominantly by increasing the production of crops for export (Copeland, 2019). Second, it is striking that, among all the many ways food sovereignty could be pursued, that ancestral knowledge, and seed saving were so prominent. This again underscores in the telos of ancestral knowledge in the telos of the emergent design imaginary. This speaks to the utopian commitment to reflexivity and dialogue. Through dialogue with elders in the community (including the parents of many of the promotores) the Voces y Manos team members converged around a design imaginary which departed from mainstream, developmentalist notions of food security, or even more progressive Western visions which may valorize communities’ autonomy without necessarily appreciating the significance of native seeds within many cultural communities.

***Unpacking the Design Imaginary Epistemology: “we will be strengthened by means of their experiences and their practices”***

The epistemic dimension the team’s emergent design imaginary is well captured by the phrase “intercambio de experiencias” (exchange of experiences), which was a running theme across the discussions of both projects. This was clearly evident in the way that *giras comunitarias* (community tours) figured prominently in the design imaginary of the school-based project. Further, learning from elders — to see and value the elders’ agricultural knowledge, as Loida expressed (p. 10) — was central to the project’s design. This illustrates the value of Indigenous knowledge systems within the team’s emergent design imaginary.

In a similar manner, the pedagogical commitments undergirding the seed saving activities also illustrated the value placed on Indigenous knowledge. This was evident, for example, when Dayana emphasized that the promotores would not “impose practices” on farmers, but rather create environments where they can exchange knowledge and experiences with one another. Finally, this epistemic dimension of the design imaginary was evident in the frequency with which participants drew from examples within their own families and communities when brainstorming and evaluating project ideas. Knowledge, in this setting was not understood as

emerging only from experts or from textbooks, but from a “dialogue among knowledge systems” (or, *diálogo de saberes*, see Pinheiro Barbosa, 2017) in which daily experience plays a critical role in knowledge construction.

***Unpacking the Ontology of the Design Imaginary: “Our seeds are the most valuable heritage our grandparents have given us”***

Discerning a person or communities’ ontology from spoken statements is not a straightforward proposition; nevertheless, numerous certain patterns relevant to ontology can be discerned from the vignettes described above. First, we can hear a recognition of a sacred essence (*uk’ux*) of within the team’s frequently expressed commitments to keeping native seed varieties alive. This viewpoint was clearly articulated by Loida’s statement that the value of the seed fairs is that they can “help communities make sure that their seed varieties are maintained.” The depth of the commitment, and its repeated invocation reflects the subjecthood of seeds, even if not always explicitly stated. Yet in Clara Luz two contrasting, we hear the notion of seed subjecthood invoked directly. Her contrasting stories between store-bought hybrid seeds and native seeds not only emphasized that that native seeds could save families money through annual replanting; she also highlighted that these seeds are “the most valuable heritage our grandparents have left us.”

**Conclusion**

In the context of the present study, the broader significance of attending to design imaginaries stems from recognizing the divergent approaches to addressing the crisis of climate change in the dry corridor. Against the prevailing development discourse of “no alternatives” to the technologically mediated, export-oriented path through the climate crisis, it was significant that the Voces y Manos team came to develop a design imaginary which seemed to break from many prevailing premises of development discourse and practice: rather than focus their sights narrowly on increasing production, a concern for production was tied to cultural and ecological revitalization. Furthermore, rather than positioning themselves as experts due to their “superior” Western scientific knowledge, team members routinely articulated a syncretic vision of dialogue and knowledge co-creation among farmers and between diverse knowledge paradigms. This was evident, for example, in the ways in which team members invoked first-hand community experience as evidence of the potential validity or impact of a proposed project. Of course, such design imaginaries do not guarantee that community practice will necessarily align perfectly with expressed values or commitments; however, without such design commitments being clearly articulated and shared among collectives, the tendency to reproduce the status quo of development practice would be more probable.

In this sense, the current study can be understood both as an extension and an application of the utopian methodologies’ literature in education. This study extends the utopian methodologies literature through its explicit engagement with decolonial frameworks. By applying specific

criteria to operationalize frameworks of Big Development and Buen Vivir, I was able to examine how co-constructed utopian visions aligned with, or departed from, one philosophical orientation or the other. In this sense, the contribution of this study to scholarship on utopian methodologies is that it addresses more specifically the question of “whose vision of utopia counts?” Such specificity is required to avoid the pattern of reproducing Eurocentrism within progressive or radical projects, a pattern which has been well documented (Escobar, 2016, 2020; Santos, 2015). It also suggests concrete directions for building bridges between the utopian methodologies literature and decolonial thought. Specifically, the examples presented above illustrate specific ways that that utopian methodologies’ commitments to dialogue, provisionality, and reflexivity can be extended by attending explicitly to the critical importance of dialogue and collaboration among diverse AOE (knowledge systems, values systems, and ways of understanding the world).

This study can also be understood as an application of the utopian methodological approach to fields outside of education, which have historically attended less explicitly to the interactional co-construction of knowledge and relations over multiple spans of time. In the field of agroecology, for example, it is often asserted that agroecology promoters — like those on the Voces y Manos team — are “organic intellectuals” or “collective political subjects” who see their work as inherently linked to Indigenous epistemes and social movements (Rosset et al., 2019). Yet whether and how one becomes an organic intellectual in agroecology is a topic which has only been approached in a handful of cases (McCune et al., 2017; Meek, 2015). Rather than take this as pre-given, the utopian methodology developed in the current study recognizes both the possibility of transforming the status quo, and also the vulnerability of programs to losing their transformative edge over time. It treats social transformation both as an object of design and of careful empirical study, with the tendency toward domestication heuristically conceptualized as a “null hypothesis.” In other words, this study suggests the value of treating potentially transformational design imaginaries as interactional achievements, rather than foregone conclusions. Such an approach may illustrate the value of cultural-historical learning theory for agroecological organizations and movements interested in promoting transformative, collaborative models of learning to transform dominant systems of power.

This leads me to highlight a limitation and key future direction for this research. My analysis focused primarily on the *content* of the design imaginaries that emerged among the Voces y Manos team. This analysis demonstrated that it is possible for groups to work together to develop creative, pragmatic design imaginaries which break from the status quo. However, while I pointed to multiple features of the co-constructed social environment which may have contributed to the emergence of these design imaginaries, this was not the primary focus of my analysis. My tentative speculation is that the design imaginaries that emerged were a product of routine practices across multiple timescales which created a feeling of belonging and collective sense that every team member’s perspective and lived experience were necessary and valued. The relevant immediate contextual experiences included team-building exercises that preceded the collaborative design activity, and the fact that the activity took place in a bucolic retreat

center, geographically removed from the day-to-day work.

Looking across a longer time span, the relational histories among members of the Voces y Manos team, deepened over weeks, months, and years, also likely contributed to creating an environment where people felt welcome and encouraged to share their opinions and perspectives. Finally, the intentional efforts made to provide all team members with consequential roles not only in *executing* projects, but also in *theorizing* and *conceptualizing* those projects, at all stages of design, likely were consequential in challenging the hierarchical norms which constrain and limit egalitarian forms of participation in many organizations. Finally, it seems likely to me that Voces y Manos participation in the remarkable *nueva primavera* movement of Indigenous political power and cultural revitalization that preceded the retreat, contributed to a sense of hope and possibility that suffused their emergent design imaginaries. While the current study took design imaginaries themselves as the object of analysis, future research would benefit from studying how mutually informing modes participation in change-making efforts on multiple scales (e.g., short-term and long-term, local and national) create the conditions for transformative design imaginaries to take hold and be sustained over time.

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*It's cliché because it's true to say that the major global warming challenge right now is countries like China and India getting richer. And we want them to get richer. It is a huge human imperative, right, a moral imperative for poor people in the world to become less poor. And if that means they use more energy, then we just need to figure out how to make that work. And we don't know of a way for that to happen without them using more energy.*

—Ezra Klein Show April 12. Interview with Dario Amodei

## CONCLUSION

Seventy years after President Truman (1949) asserted that “greater production is the key to prosperity and peace,” development remains not only the mainstream consensus, but such a powerful vision that alternatives are virtually unthinkable. As the quotation above from a highly popular current-day podcast “The Ezra Klein Show” (2024) illustrates, the “moral imperative for poor people in the world to become less poor” is still largely understood as *poor people living more like us* — the rich, affluent, and consumptive. That is, a single view of “the good life” predominates among Western policymakers and the public — one which is synonymous with increasing levels of consumption, and along with it, ever-increasing demands for energy.

Even as the climate crisis presents us with stunning and undeniable realities — from wildfires, to heatwaves, to major water shortages — this development imaginary remains unrivaled in the West. Rather than prompting deep reflection on the fundamental organization of Western societies, the setting-in reality of climate change instead prompts world leaders to gamble the future on the naive hope that even more economic growth will magically solve the very problems it helped cause. As the target of limiting global heating to 1.5 degrees C now “hangs by a thread” (Zhong, 2024), the need for alternative paradigms to development — both for frontline communities and for broad sociopolitical change — is more urgent than ever.

This dissertation has focused on the co-creation of tools and practices for post-development at the community scale, based on the understanding that multiple scales of transformation are necessary and interconnected. The methodology of Participatory Design for Buen Vivir (PDBV) aimed to respond consequentially to the here-and-now challenges of frontline communities facing immediate effects of climate change, while also keeping sights set on the long-term sociopolitical horizon (Gutiérrez et al., 2020) of Buen Vivir. Informed by theories and methods from the learning sciences—particularly Indigenous approaches—that attuned us, the Voces y Manos team, to the re-vitalization of Maya-Achí cultural practices and lifeways, we sought to co-develop methodological tools and practices grounded in a paradigm of intercultural knowledge co-creation and co-design (Rosado-May et al., 2020), rather than cultural imposition. In the broadest terms, our aim was to help narrow the gap between relatively abstract calls to design for the pluriverse, and the immediate struggles faced by frontline communities.

Having considered within each chapter the ways that each of the phases of PDBV reproduce or challenge development, in this conclusion, I consider the affordances and constraints of the PDBV methodology as a whole. I then share a few broad methodological reflections on processes of collaborative design that are attentive to ontological difference, multiple

epistemologies, and power which may be relevant to others engaged in similar work. I end with implications and future directions for research and practice.

### **Affordances and Constraints of the PDBV Methodology**

I approached design-based research in agroecology from the premise that agroecology creates distinct openings for transformative change, but that such change is not a guaranteed, inherent feature of agroecology, which can, alternatively, be articulated as a set of apolitical techniques or broad transitions in human-nature relations. Moreover, there are many factors which could contribute to a community-based organization like Voces y Manos reproducing elements of the status quo of development: Formal schooling and professional training, demands of funders, the generalized assimilation of tenets of development into working tools and practices, and power dynamics (including my own involvement) are all factors which could readily create a driving force in the direction of reproducing the status quo. Even farmers themselves at times encouraged Voces y Manos outreach workers to deliver agrochemicals, convinced this was the only means they could grow corn under prevailing conditions. All these factors can implicitly, even unwittingly, lead agroecology promoters' energies to be entirely consumed by the short-term goal of production (which is itself no easy task). At the same time, members of the Voces y Manos team have deep histories of participating in Maya-Achí agroecological practices and were guided by a shared framework oriented toward long-term commitments to ecological balance and cultural revitalization. This can create a countervailing force.

It is not as though these two axes (production versus cultural revitalization) are diametrically opposed to one another; rather, these are the discursive currents within which we operate. The question is how these various discursive fields intermingle with local working practices and on-the-ground pressures to shape collective commitments and practices.

From this perspective, I was interested in co-designing tools and practices for re-mediating development — that is, developing tools and practices which might fundamentally transform development as the dominant mediating framework for envisioning “solutions” to people’s here-and-now circumstances. Drawing on the work of Brown and Cole (2001) and Rajala and colleagues’ (Rajala et al., 2023) conceptualization of utopian methodologies, I treated the “risk of domestication” (in this case, the risk of reproducing dominant practices and theories of development) as a kind of design-based null hypothesis. At the level of design, the aim was to co-create tools to enable a collective design imaginary oriented toward Buen Vivir to take hold and be sustained over time. At the analytic level, my aim was to understand whether and how such a transformative design imaginary took hold. Using this null hypothesis as a qualitative heuristic, I was able to take an explicitly non-neutral stance to my research while still attempting to make as balanced an appraisal as possible of the constraints of the methodology, as well as its affordances. That is, rather than biasing my interpretations, I believe my investment in achieving particular outcomes created a sensitivity and desire to understand not only the ways the methodology succeeded, but also how it might be falling short. Given that contradictory ideological premises can shape the thought and practice of individuals and collectives (Philip et

al., forthcoming), I also sought to be attentive to the ways top-down models might be both reproduced and challenged in the same program and by the same people (me included), at the same time.

This established, I can now ask: what did the tools and practices of PDBV afford and constrain, with respect to the dual goals of orienting design practices toward Buen Vivir while also offering a meaningful response to immediate circumstances? Looking across the three analytic chapters of this dissertation, three key affordances of the methodology emerged: (1) An alignment between the Voces y Manos team members' design imaginaries and life projects expressed by community members; (2) A tendency to historicize and contextualize emergent issues; and (3) A linking of daily practices to broader sociopolitical commitments.

### *Aligning design with Maya-Achí life projects and worldviews*

Perhaps the most striking finding—suggestive of a key affordance of the PDBV methodology—is the alignment that emerged between the concerns and perspectives voiced by participating farmers and the design imaginaries that emerged among members of the Voces y Manos team. Focus groups highlighted a set of concerns widely shared by farmers which included but also exceeded commitments to yield, income-generation, and production. For example, farmers were concerned about the loss of *convivencia* and cultural practices connected to milpa farming, and highly skeptical of bioengineering (e.g., the development of transgenic seeds or more advanced pesticides) as strategies for climate change adaptation. They clearly expressed that more than agricultural output was at stake in the response to the climate crisis. For example, they saw the preservation of native seed varieties, and practices of respect for the earth and for fellow community members, as vital aspects of climate change adaptation.

In a similar manner, a key theme that emerged from the design imaginaries voiced by team members was a commitment to the recuperation of ancestral knowledge (*recuperación de conocimiento ancestral*). This theme emerged again and again as a key motivating factor driving the design imaginaries in phase 4 (design for emergence). It was a key sensibility motivating the creation of the school-based project and was also central to the group's understanding and working definition of food sovereignty. The commitment to ancestral knowledge often meant positioning elders in the community as experts and wisdom keepers, marking an important departure from deficit perspectives. This meant that the *promotores* frequently emphasized their role not as involving *transfer of knowledge* to farmers, but co-learning with them, and create contexts in which farmers can learn from each other.

The commitment to recuperating ancestral knowledge was evidenced most clearly and consistently in the team's efforts at saving native seeds. It is significant that when describing their commitment to seed saving projects, team members expressed that commitment in terms that went beyond the logics of preserving genetic diversity (although that rationale was also recognized). This was evidenced, for example, in the analysis of contradictions (chapter 3) when Lilian said that “our history is in our seeds,” closely reflecting perspectives voiced by community elders in chapter 2. This thread carried through into the design imaginaries analyzed in chapter 4, as when Clara Luz said that Native seeds are “the most valuable heritage our

grandparents have left us,” and articulated the design of a program based on this commitment to saving native corn and bean landraces. That the issue of native seeds was understood as one of the six central contradictions identified by the team, and became so central to the team's design imaginary, is especially significant, given that this issue is rarely considered as a priority of conventional development programs (or worse, directly undermined by them). It points to an affordance of the PDBV methodology to not only elicit Maya-Achí knowledge and practices, but also to place such knowledge and practices at the center of the design goal. Significantly, these efforts to save seeds and recuperate ancestral knowledge did not remain merely abstractions, but are being implemented by the Voces y Manos team as I write.

Although this dissertation did not systematically study the pedagogical strategies used by outreach workers, the deep engagement with Maya Achí AOE's were reflected in promotores' accounts of their own practices. This is evident, for example, in the way Oscar described his approach to encouraging farmers to cease using agrochemicals by reminding them of the practices of their grandparents. To repeat a quotation from Chapter 3, Oscar said:

It is very important to [explain to people] that it is still possible to return to the practices of our abuelas and abuelos, because they harvested more, and worked with a hoe and machete [only]...

This quotation illustrates how values foregrounded in community focus groups (chapter 3) were taken up and used as pedagogical tools by the promotores. Building on communities' funds of knowledge, values, and identities (Moll, 1998; Esteban-Guitart & Moll, 2014) is thus another critical way in which the PDBV approach may contribute to dialogical agroecology pedagogies grounded in and informed by historicity and an asset-orientation to communities.

### ***Historicizing and contextualizing emergent contradictions***

A second key affordance of the PDBV methodology is that the practice of routinely reflecting on contradictions between theory and practice helped practitioners and designers situate the challenges they encountered in the field within broader historical and social context. As described in the introductory chapter, a tendency toward individualism and mistrust among community members has been one of the vicious, ongoing legacies of the genocidal violence that took place in Rabinal. This individualism was fomented — at times intentionally — by agricultural extension programs. Utilizing a theory of change grounded in Maya-Achí life projects and which sought to promote Buen Vivir proved a useful means of avoiding individual blame and pursuing structural solutions.

This tendency to move beyond a focus on individual responsibility was perhaps most relevant when the issue of agrochemicals was considered. In both community focus groups and reflective practice dialogues, there was a tendency at times to accuse those who use agrochemicals of “taking the easy way out” and destroying the environment. On one level, this way of speaking may have encouraged accountability, and pride among agroecologists for putting in the hard work of protecting the environment. Yet the frame of individual responsibility ultimately is inadequate when it comes to understanding and addressing the complex factors which push individuals to use agrochemicals.

Through ongoing work with farmers and reflective dialogues among the Voces y Manos team, a broader lens took hold. When individual-level explanations arose, they were rarely taken as self-evident or a sufficient basis of knowledge for informing design. More often, they were followed by considering explanatory factors for the contradiction beyond the control of the individual. Thus, in phase 2 (developing a theory of change), phase 3 (reflecting on contradictions), and phase 4 (developing design imaginaries) strategies were generated which explicitly sought to transcend histories of division and promote community cohesion. These strategies included: creating a network of model agroecology parcels to serve as teaching facilities throughout the community; creating work teams of farmers to engage in the practice of *kuchub'aal* (collective work in teams) to help one another with the tiresome work of tilling by hand; and creating farmer-to-farmer knowledge exchange activities, particularly focused on the sharing of knowledge for preparing organic soil amendments to replace chemical inputs. Each of these strategies creatively move beyond narrow foci on individual behavior change.

### ***Linking of daily practice to broader sociopolitical commitments***

The final, key affordance of the methodology was that, as it tightened the *promotores* bond of accountability to respond to farmers' immediate circumstances, it also appeared to link those daily circumstances to deep sociopolitical commitments. Voces y Manos team members routinely remarked, with pride, that what distinguished their work from mainstream development institutions was the depth of relationships they had with farmers. They emphasized that they know each farmer by name, know every plant they grow and animal they raise, and understand their needs. From their perspective, this meant they were able to provide consequential forms of assistance that responded to farmers' specific challenges rather than offering them "cookie-cutter" solutions.

At the same time, it seemed to me that there was a growing sense among the team that their daily engagements with farmers were part of broader political struggles for transformation. There is little doubt that the team's increasing participation in social movement contributed to the growth of these political sensibilities. During the 2020-2024 period, Voces y Manos joined and played an increasingly active role in a national network of agroecology organizations working to promote legislation to protect against the patenting of native seed varieties and the introduction of transgenic seeds into Guatemala. (This was in response to several major attempts by the Guatemalan Congress to pass a so-called "Monsanto Law" which would have enabled the privatization of genetic material). Throughout this time, team members participated in regional fora on agroecology, lobbied local officials, and protested in the capital city to demand lawmakers vote on a proposed bill titled, "The Law to Protect Biodiversity and Ancestral Knowledge."

As the name of the proposed legislation suggests, the discourse in support of this bill was closely aligned with the that of Maya-Achí farmers (as we saw in chapter 3) and attuned to the contradictions the team had been working daily to address (as we saw in chapter 4). In a segment of dialogue from the team's year-end, "Design for Emergence" activity (not included in chapter 4) Lilian spoke to this linkage between her daily agroecology practice and broader political activism:

We were discussing family seed banks, so that families can consume what they produce. . . so we need to rescue them [native seeds], and not fall into the trap of these privatization laws, but instead keep promoting our seeds in the communities.

For Lilian and other team members, participating in social movements to protect native seeds were a direct extension of her work creating seed banks and setting up seed swaps in the communities.

The relatively small agroecology movement eventually dovetailed with the nationwide democracy defense movement, which, quite significantly, was also headed by the country's Indigenous Ancestral Authorities. As thousands took to the streets to defend the results of the democratic elections of 2023, the Indigenous authorities of Guatemala quickly emerged as the country's de-facto moral compass, a point routinely underscored by the middle-class university students who also played a prominent role the protests and eventually by President-elect Arévalo himself.

It was not lost on team members that the movement in which they were taking part had pushed their country around a significant bend in history. Their parents' generation had survived the genocide and their grandparents' generation had lived through the forced labor and mass displacement of the Ubico dictatorship eras, both marked by their profound violence, extreme racism and social exclusion of Maya communities. It was thus highly significant for members of the Voces y Manos team that the social transformations they witnessed and participated in did not emerge from some enlightened outside vanguard, but rather from the visions and life projects of the Indigenous communities themselves.

Of course, this linkage between community practice and social movement activism was a product of a unique conjuncture in history. (The claim being made here is not that that use of PDBV will reliably spark national revolutions!) The provocation I aim to raise is whether and how practices of co-design at the community scale might be understood as — and contribute toward — prefigurative politics. Recall from chapter 2 the ways in which a unique admixture of violent repression and neoliberal development projects gave rise to radical pessimism (Copeland, 2019). From this perspective, what was significant here about PDBV was not what it causally produced but the visions it conceptually and relationally opened up: our routine dialogues intentionally privileged Maya-Achí life projects and visions for how to live in ethical relationship with Mother Earth. When structural barriers to this vision were identified, these became an explicit object of collaborative design thinking. Thus, when the conditions were right for those barriers to be addressed through a mass movement, it was only appropriate that Voces y Manos would feel called to participate. I suggest this may be an example of what Escobar (2020) calls the “political activation of ontology” — when a conjunctural moment presents itself, and relationalities carefully tended at the small scale come take expression in a broad, pluriversal movement. The current study only provides empirical basis for proposing this as a conjecture. Studying this relationship between social movement participation and local, community-based design is an important direction for future research to emerge from this study.

## **Methodological limits and Constraints: Deepening community participation and building local and trans-local networks**

Reflecting on the process as a whole, there are two key dimensions of work which could have been more explicitly accounted for in the PDBV methodology: deepening the study of Maya-Achi agroecological knowledge and practice, and more explicitly accounting for inter-organizational collaboration and social movement participation. Some of these forms of participation happened organically (as described above) but the methodology could be expanded to account for them more directly.

First, while the focus group methodology proved rich for supporting the goals of the recovery of absent knowledges, there are complimentary methods which can help deepen those understandings and support their incorporation into community practices. The Yucatec Maya concept/methodology of “tsikbal” —referring “to a process of knowledge co-creation through conversation, body language and joint participation” (Rosado May, personal communication, April, 2024) could be used to expand the insights gained from focus groups. For example, once particular key concepts or practices are identified, team members could co-participate in those practices, thereby complementing verbal description with embodied experience. Because much traditional knowledge has been lost, it is important to identify “*sabios locales*” (local wisdom keepers) within the Maya-Achi cultural community who continue to hold extensive traditional knowledge, and with whom team members could study. Closely related to this, it would be worthwhile to expand the analysis of contradictions to include reflections on how practices learned from *sabios locales* can be more thoroughly incorporated into the team’s agroecology activities.

Finally, as the previous section suggests social movement organization and inter-institutional collaboration emerged as key complementary activities to Voces y Manos’ community-based work. Participating in a broader agroecology movement was vital for building relationships; it helped keep team members motivated and inspired; it provided a means of sharing and learning new practices; and it was critical for peasant groups to build political power on the national scene. Though this emerged as highly significant, it was not explicitly accounted for in the PDBV Methodology. Future iterations of the work would benefit from considering how participating in peasant networks might be included in the model. For example, the culminating activity — design for emergence — could readily be carried out among a range of institutions; those organizations could share strategies and approaches with one another; coordinate activities and identify key structural barriers to become the target of social movement organizing campaigns.

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In summary, across the three chapters, we saw the Voces y Manos team come to develop a set of shared meanings of Buen Vivir. Commitments to reducing or eliminating the use of agrochemicals; sustaining collaborative learning and cultural practices; respecting mother earth; respecting elders and recuperating ancestral knowledge; and saving native seeds were all central themes. Significantly, these meanings were co-created, not only internally within the Voces y Manos team, but also in dialogue with community members and social movement organizations.

If the term *Buen Vivir* itself gestured at these meanings, the specific foci it took could not have been specified in advance. This is the distinct affordance of *Buen Vivir* as a design imaginary: it's not a "closed" concept, in the way that development presupposes means and ends. It is directive only insofar as it directs attention to communities' life projects and considers how collaborators might build with and support these life projects. Paired with specific collaborative design practices, it invites and requires co-creating meanings and shared goals between agricultural professionals, community members, program leaders and outside researchers when they are involved.

## **Reflections & lessons on Working across Epistemic and Ontological Difference**

Recognizing the distinct relational ontology of Maya Achi communities invites several sensibilities and methodological reflections. First, when outside researchers are involved, it becomes clear that a commitment to recovering absent knowledges and designing for expanded relationality requires a posture of "radical openness" (Blaser, 2010) to non-Western onto-epistemologies. Significantly, this does not require outside researchers to develop a perfectly emic understanding (an impossible goal) of practices or to fully share underlying ontological understandings of, say, the nature of a seed. What is required instead of forced commensurability is inter-epistemic dialogue: the ability to listen and learn not only from other people and languages but also across fundamentally different ways of knowing and being in the world.

This entails attempting to think and work across paradigms, searching for convergences while being open to divergences. Even if Maya-Achi life projects are not reducible to discourses of the environment, the two can be "fellow travelers." For example, reducing the contamination of agrochemicals both reduces biological toxicities and expands space for relationalities among plants, microbes, and humans to take hold. The revalorization and exchange of native seeds both preserves genetic diversity, and also preserves an entity which is of central importance in the Maya Achi relational cosmology. The critical issue here is to ensure that the search for convergences does not lead to epistemic subjugation: working across multiple cosmologies and gradients of power requires an intentional commitment of all to recognize the inherent validity—and unique affordances and constraints—of multiple knowledge systems and ways of life.

Closely related to this point, it is important to recognize the inherent limitations in attempting to document a world or cosmology in a language other than the one that is being spoken, and in the mode of expository writing. It is always difficult or impossible to see the world through the eyes of the other, much less represent it. Yet the best of the ethnographic tradition has long held that the attempt, however imperfect, is worthwhile. A useful metaphor comes from Blaser (2010): Rather than attempting to engage is "border thinking" (assuming the enunciative locus of the *napatla*", or one who can speak 'from the Border') the attempt is at "border dialogue."

This notion of border dialogue means that the onus of translation does not fall onto non-dominant communities alone; academics and designers too, must make the attempt to engage in intercultural/interlinguistic translation. We saw, for example, the recovery of absent knowledges discussed in chapter 2 as an example of the feasibility of such a border dialogue: community members met us halfway – travelling from far away, taking the time to painstakingly describe their lives. And we met them halfway as well. We attempted to create a context where pursuing an academic research question was only one component of a much broader activity system in which a variety of horizontal knowledge exchanges were taking place. We also used numerous

analytic techniques to enable community members to speak in their native language; to elicit narratives closely tied to participants' pragmatic circumstances, histories, and repertoires of practice (Gutierrez and Rogoff, 2003); and to interpret their statements as carefully and deeply as possible. Inevitably our understandings were limited and shaped by the expectations all parties brought to the focus groups, including by the professional vision of development. At the same time, findings suggest it was indeed possible to engage in modes of analysis and co-design beyond this dominant frame.

Writing this dissertation was its own attempt at a border dialogue, meeting readers half-way by translating words from Spanish to English, which in some cases are themselves translations from Achí to Spanish. Even when they were speaking in Achi, it is important to remember participants were still engaging in work of translation/representation – perhaps shaped by their previous expectations of development, and attendant notions of what I and my colleagues “wanted to hear.” Yet rather than assuming that the act of translation is either perfect or impossible, I assume two things: (1) much is “lost” in the translation; (2) much is communicated, even if imperfectly, and that the earnest attempt at border dialogue is worthwhile.

My own writing practice—grounded in my commitment to cognitive justice and expanding the pluriverse—was to render entities and ideas as best as I could in the context of the Maya-Achi linguistic/epistemic universe, rather than to attempt to interpret them in relation to concepts and entities more familiar to the western academy. So, for example, when describing cultural practices, I attempt to describe their significance within the Maya-Achi cosmology (e.g. blessing seeds prior to planting them to grant them wisdom and strength), rather than reducing their truth value to that of “cultural beliefs.” As I argued throughout this work understanding concepts and entities within their own frameworks is a critical practice for maintaining inter-epistemic design imaginaries, sustaining relational cultural practices, and expanding the pluriverse.

### **Future Directions & Research Implications**

For a long-time, ending my dissertation with an analysis of design imaginaries felt like an unsatisfactory response to my research questions. Ultimately, what I want to know is whether agroecology offers a meaningful alternative for farmers like Doña Juana, and whether and how the cultural practices of milpa farming are sustained over time. Yet I've come to a growing appreciation of the significance of collective design imaginaries as a key precursor step to broader change. Given the gravitational pull of mainstream development discourse, the co-creation of a collectively shared design imaginary aligned in significant ways with Maya-Achi life projects was a significant achievement. Still, major questions remain around how that vision is translated into practice. There are three primary future directions I would like to pursue: (1) documenting Maya-Achi agroecological knowledge; (2) systematizing agroecology pedagogies; and (3) examining the translation of design imaginaries into practice.

The first key direction of future research is to more systematically document Maya-Achi ancestral knowledge. As much of this knowledge is being lost with globalization and migration, it is important that this information is documented — not only in books, but as a living practice. As mentioned previously, participant-observation based on the Yucatec Maya concept of tsikbal offers a powerful means of sharing and documenting ancestral knowledge and practice. Another way this can be pursued is by involving Maya-Achi young people in participatory research, where they spend time with elders learning from them and documenting their knowledge and practices.

This knowledge can be documented through a variety of print and digital media. The practice itself would be especially consequential for the young people involved in doing this work of documentation.

A second future direction for research is to more systematically document pedagogical practices of agroecologists. Chapter 3 hinted at some of the ways in which the agroecology promoters drew upon and leveraged Maya-Achí values and practices in their work. In future research, I hope to shadow agroecology promoters (both in Voces y Manos and other organizations), in order to systematically document the pedagogical practices that they use, particularly focusing on how they weave together western and ancestral Indigenous techniques and philosophies. Such research could prove useful in training future generations of agroecology promoters to adopt an asset-oriented approach which builds on their existing values and repertoires of practice. This can inform both the literature and also contribute to practice. For example, Voces y Manos and other agroecology organizations have expressed interest in the development of training manuals to be used in the pedagogical training of extension workers.

The third critical future direction for this research is to develop a better understanding of how design imaginaries developed are translated into practice, and how the project developed by Voces y Manos are received and perceived by communities. Throughout this current study, I have highlighted the profound challenges and contradictions that Maya-Achí farmers face in their attempts to grow milpas in the dry corridor. As water becomes increasingly scarce, there's a genuine question as to whether existing agroecology techniques are adequate to manage prevailing conditions.

For example, in 2024 the onset of the rainy season was significantly delayed, and many are anticipating crop failures, price increases, and even widespread hunger. Will this lead farmers to abandon milpa farming in favor of other more drought resistant crops, or transgenic seeds? Will they see agroecological practices of soil restoration and water retention as capable of helping them meet the challenges they face? Or will they simply leave the territory, and begin migrating to the global north in even larger numbers than they are already? All of these are distinctly possible. By engaging in long-term participant observation over time with a few focal families, I hope to gain a greater understanding of the processes of agroecological adoption, and a sense of how farmers' yields, crop diversity, and senses of *convivencia* and efficacy change as they gain greater skill and familiarity with agroecology.

### **Implications for Policy and Broad Social Change**

Though focused on community-level practices, I see this work having implications for transforming development policy at the regional scale. In a recent special issue of the journal *Nature Climate Action*, agroecology scholar Nathan Einbinder and I (Bakal & Einbinder, 2024) explored how the work of local agroecology organizations in Rabinal might inform climate change adaptation in Latin America, at the level of policy. We began by highlighting the marked difference between Maya-Achí life projects and visions of climate change adaptation articulated in the Biden administration's 2022 "Call to Action for Northern Central America." We remarked on the fact that, even in the midst of a regional water shortage and food production crisis, ecological considerations played a minor role in the initiative. Considerations of

Indigenous communities' rights or worldviews were absent altogether. In contrast, the primary focus of the initiative was to attract private sector investment from U.S. companies, such as Nestle, Target, and Mastercard, to ostensibly increase GDP and income (White House, 2023). The more things change, the more they stay the same.

We contrasted this top-down vision of development with the initiatives underway in Maya-Achí territory. Deeply disenchanted by the promises of development, we saw these groups enacting “real utopias” (Wright, 2011) in their territory, grounded in a fundamentally different philosophy and telos. We argued that “their local efforts should be studied seriously, and be used as the basis for a reformulated, post-development model built from the ground up and guided by ecological, communitarian, and social equity criteria rather than merely economic growth” (Bakal, and Einbinder, 2024, p. 5). Specifically, we proposed three ways in which the international community might begin to align its policies with Indigenous and campesino life projects and commitments: (1) Increasing funding for Indigenous-led climate action; (2) Re-conceptualizing development practices to align with Buen Vivir, and (3) Transforming social and economic policies to remove structural barriers to community members' locally defined goals.

Although aspirational and much work would be required to translate such a vision into concrete policy, the basic ideas articulated in that piece emerged directly from this research. The link, of course, is the recognition that the underlying assumptions of development are not universally shared and that learning with and from non-Westerners conceptions of equality, justice, ecological balance and the “the good life” — is vital. Having survived many disastrous misadventures carried out in the name of development, it is clear to many in the Maya-Achí territory that solutions to the interlocking crisis of our times must be pursued on different terms. For many of the elders and youth leading the revitalization of Maya-Achí agroecology, the key lies in sustaining values and practices of respect, balance, conviviality, localization, and food sovereignty. At a time when so many in the West continue to see economic growth and the development of new technologies as the singular cure for all societies' ills, my hope is that this dissertation has contributed to learning from their critically important perspectives.

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