

Indigenous women's empowerment as quinoa producers in rural Ecuador

by

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DEDICATION

I dedicate this dissertation to my beloved family: parents, siblings, sisters in-law, and beautiful nieces Sofi, Ami, Analí, and Emi because without your love I could not have been able to finish my PhD. In particular, I dedicate this to my husband Sam, the love of my life. Thank you for always supporting me, guiding me, and loving me. Cheers!

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NOMENCLATURE

COOP	Cooperatives
CODENPE	Consejo de Desarrollo de las Nacionalidades y Pueblos del Ecuador – Council for the Development of Nationalities and Towns of Ecuador
ESPOCH	Escuela Superior Politécnica de Chimborazo – Higher Polytechnic School of Chimborazo
IFPRI	International Food Policy Research Institute
INEC	Instituto Nacional de Estadística y Censos – National Institute for Statistics and Census
INIAP	Instituto Nacional de Investigaciones Agropecuarias – National Institute of Agrarian Research
NGO	Non-Governmental Organization
MAG(AP)	Ministerio de Agricultura y Ganadería (Acuacultura y Pesca) – Ministry of Agriculture and Husbandry (Aquaculture and Fisheries)
OPHI	Oxford Poverty and Human Development Initiative
USAID	United States Agency for International Development
WEAI	Women’s Empowerment in Agriculture Index

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When you realize the richness of your own culture you become stronger
Cuando te das cuenta de la riqueza de tu propia cultura te vuelves más fuerte
Enrique Olvera

ABSTRACT

Indigenous women are crucial agricultural contributors in rural Ecuador, yet they face vulnerabilities as Indigenous people and as women, which limits their quality of life and opportunities for empowerment. This dissertation includes three primary chapters that collectively explore how vulnerability and empowerment relate to Indigenous women who are members of a quinoa cooperative. The data collection took place during a continuous five-month period across 2018 and 2019. Empowerment is often analyzed in agriculture through people's access to productive resources and decision-making opportunities. This research contributes to the literature on Indigenous women's empowerment by focusing on how Indigeneity and gender influence their access to resources and agricultural decision-making processes in rural Ecuador, respectively. This research was guided by components from the Women's Empowerment in Agriculture Index (WEAI), including the domains of production and resources as well as concepts of empowerment, access, and decision-making. The research focuses first on colonial and postcolonial legacies that pushed Indigenous people into isolated rural areas with poor land quality, harsh weather, and scarce resources that often inhibit agricultural productivity. Quinoa is an important source of income and it is facilitated through their membership in an Indigenous cooperative. Their membership to the coop diminishes Indigenous vulnerabilities through promoting access to resources for quinoa production, which improves their income opportunities, quality of life, and thus are empowering. Indigenous women are also restricted in their decision-making opportunities due to their gender. The research participants have experienced a feminization of agriculture in which women have become principal producers. The participants described engaging in joint decision-making, yet in practice men often made final farm decisions. Thus, while Indigenous women's empowerment was enhanced from their membership

in the cooperative that addressed their own Indigenous and rural vulnerabilities, their empowerment is still restricted by their gender and limited decision-making power in agriculture. Overall, this research provides evidence for future policies and programs on the importance of analyzing and considering Indigeneity and gender as contexts influencing Indigenous women's empowerment.

CHAPTER 1. GENERAL INTRODUCTION

Problem Statement

Indigenous women producers are critical contributors to agricultural production in Ecuador but face substantial vulnerabilities as Indigenous people and as women that restrict opportunities for empowerment. However, there is scarce research focused on both Indigeneity and gender in agricultural production in the region. Empowerment in agriculture is often analyzes people's access to productive resources and their opportunities for decision-making in the farm (Kabeer, 1999; Cornwall, 2016; Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019). Existing research demonstrates that (post)colonial legacies marginalize Indigenous people by pushing them into remote rural areas with limited access to critical resources in agriculture, such as land and water (Partridge, 2016; Bose, 2017; Hidalgo, Boelens, & Vos, 2017). Indigenous empowerment often emphasizes their organized collaboration and participation in their social movements (Giunta, 2014; Faas, 2015; Coq-Huelva, Torres-Navarret, & Bueno-Suárez, 2018), yet limited research examines Indigenous empowerment in agricultural cooperatives.

The study of Indigenous struggles, however, does not address Indigenous women's marginalization in patriarchal structures, such as having men serve as heads of households, that often diminishing their opportunities for agricultural decision-making (Twyman, Useche, & Deere, 2015; Deere & Alvarado, 2016; Alwang, Larochelle, & Barrera, 2017). This dissertation contributes to the empowerment literature by focusing on both access to productive resources as Indigenous people as well as opportunities for decision-making as women when producing quinoa as members of an Indigenous cooperative. Collectively, access to resources as Indigenous people and decision-making opportunities as women, illuminate complex issues of marginalization and empowerment of Indigenous women.

Research Background

Indigenous women in Ecuador often face isolation in rural locations due to (re)produced racist colonial legacies and practices that prevent access to knowledge and crucial productive resources (Hidalgo, Boelens, & Vos, 2017; Bose, 2017). For example, about eighty-two percent of Indigenous people live in rural areas and approximately forty-two percent are considered poor (INEC, 2019). Agriculture is a major source of rural income and employment and, in an effort to enhance rural economies, Ecuador's government increased investment of quinoa production because of the strong global demand and is historically grown in the Indigenous areas (Skarbo, 2015; Pro Ecuador, 2015).

However, isolation and marginalization continue to diminish Indigenous agricultural productivity (Partridge, 2016; Waters, Ehlers, Ortega, & Kuhlmann, 2018), which has forced Indigenous men to work outside the farm. The absence of men has caused a feminization of agriculture in which women have taken over previously male-dominated farm activities, including quinoa (Radcliffe S. A., 2013; Slavchevska, 2016; Jia-cheng, Zhi-gang, Qiu-fen, & Hua, 2019). Because Indigenous women are now principal farmers, the feminization of agriculture raises questions about decision-making processes as men are often considered heads of the household. Thus, Indigenous women not only face limited access to valuable information and crucial agricultural resources as Indigenous people, but also face inequalities for decision-making compared to men, which affects their overall empowerment. There are a variety of ways Indigeneity and gender issues have been studied in this research, and a description of key topics and literature are provided next.

Indigenous women's opportunities for empowerment are highly influenced by their struggles as Indigenous people, and in Ecuador access to productive agricultural resources are scarce due to their rural isolation, a consequence from racist policies and structures since

colonization. For example, Hidalgo, Boelens, and Vos' (2017) study found that Indigenous people's access to water was limited due to colonial and postcolonial practices. The authors argue that water rights are gradually seized from Indigenous groups by powerful actors who are often supported by public policies. They concluded that "Andean governments and elites have undermined peasant-Indigenous societies' subsistence means and strategies, using diverse economic and cultural-political modalities and strategies to marginalize local rights... and oppressing local peoples' management and self-determination" (p. 81). Bretón Solo de Zaldivar (2013) studied land access among Indigenous groups. He argues that land distributions during the agrarian reform during the 1960s, labeled as social assistance since Indigenous producers were able to purchase land, were strategies for continuous domination of Indigenous groups. He concluded that the land acquired by Indigenous groups was ill-suited for agriculture, which reinforced their subordination in Ecuador.

Research in Latin America and in Ecuador examine issues associated with Indigenous marginalization resulting from colonial and post-colonial structures and practices, but they often focus on access to one agricultural resource at a time, such as land or water (Gray, 2009; Bretón Solo de Zaldivar, 2013; Hidalgo, Boelens, & Vos, 2017). Research that investigates the effects of produced and reproduced colonial practices on Ecuadorean rural Indigenous quinoa producers' access to multiple agricultural resources, including water, land, seeds, machinery, and fertilizers is essentially non-existent. An analysis of more than one resource at a time is valuable for understanding agricultural empowerment because each one of them provides unique evidence of marginalization. For instance, limited access to roads in rural isolation restrict fertilizer and machinery use and exposes them to harsh weather that negatively impact seed survival and crop

diversification. Collectively examining more than one resource illustrates the multiple impacts of colonial legacies and practices.

In Ecuador, the fight against Indigenous women's marginalization as Indigenous people is often analyzed through Indigenous social movements and their use of collaborative and organizational structures, often referred as *minga*¹ norms, for self-empowerment. Becker (2011), for example, found that Indigenous social movements contributed to the inclusion of plurinationalism² in the updated 2008 constitution of Ecuador through a collective rights approach that seeks inclusion of vulnerable groups. Lalander (2010), on the other hand, stated that Indigenous social movements in Ecuador are among the strongest in Latin America due to their work on "bilingual education, rural development and models of participatory democracy" (p. 507). Lalander demonstrates the importance of Indigenous social movements for their own empowerment and social, political, and cultural inclusion.

Studies in Ecuador that analyze Indigenous empowerment often focus on social movements (Goodwin, 2017; Radcliffe S. , 2012; Lupien, 2011). However, there is a gap in the research, which this study addresses by focusing on the use of Indigenous communitarian support as strategies within Indigenous cooperatives to overcome rural marginalization. Cooperatives provide an opportunity for small-scale producers to pool resources and share processing costs in a competitive market. Thus, analyzing an Indigenous cooperative can illustrate Indigenous women's opportunities for empowerment, including through the use of Indigenous *minga* norms to acquire and distribute crucial resources in agriculture.

¹ *Minga* means 'collective work in communitarian support' and has Indigenous symbolism reflecting identity, solidarity, and ethnicity (Lalander, 2010).

² Defined as: "a social contract that respects and harmonizes the rights of Indigenous peoples...with the judicial structure and political force to recognize their status as political subjects with clear rights" (Becker, 2011, p. 55).

Additionally, Indigenous marginalization is not the only concern faced by Indigenous women when it comes to their empowerment in Ecuador. Indigenous women are often placed at a disadvantage in comparison to Indigenous men when it comes to decision-making in the farm due to their gender. For example, men are often perceived as heads of the household and owners of assets (Socolow, 2015; Waters, Ehlers, Ortega, & Kuhlmann, 2018), and Kuokkanen (2011) noted that Indigenous women's work is frequently associated with subsistence production and childcare and men's work with wage labor. Women's decreased involvement in income generation can diminish their authority for household decision-making (Deere & Twyman, 2012).

However, a feminization of agriculture, where Indigenous women have taken over previously male-dominated farm production may influence decision-making processes. Women have become the principal producers and thus, often possess greater knowledge about farm activities and conditions, but it is unclear if women's decision-making opportunities have also changed. Research focused on women's empowerment in Ecuador often considers them empowered if they contribute to farm decisions alone or jointly with men (Alwang, Larochelle, & Barrera, 2017; Twyman, Useche, & Deere, 2015; Deere & Twyman, 2012). Yet, this research contributes to a gap in the research by focusing on rural Ecuadorean Indigenous women and their decision-making opportunities in the context of a feminization of agriculture.

Overall, this research makes three important contributions to the gap in the empowerment literature by focusing on Indigenous women's ability to make life choices given their unique contexts. First, it examines their access to productive resources in rural isolation as Indigenous people, which contributes to the literature on the negative consequences of colonialism. Second, this study analyzes their participation in a coop, which contributes to the gap on how

cooperatives can empower members and through Indigenous minga norms of collaboration and participation. Third, this research investigates opportunities for decision-making in agriculture as women given unique local context such as a feminization of agriculture, which contributes to the literature on decision-making. Collectively, this study addresses empowerment gaps through the analysis of key concepts, *access* to resources and *decision-making* opportunities as Indigenous women when members of a quinoa cooperative in rural Ecuador.

Research Questions

This study includes three research questions that together help understand Indigenous women's empowerment as quinoa producers in rural Ecuador. Each question focuses on key empowerment concepts in agriculture: *access* and *decision-making*. The first research question concentrates on Indigenous women's access to productive resources given Indigenous marginalization due to colonial and postcolonial legacies. The second question focuses on Indigenous women's membership in a cooperative and their opportunities for empowerment as Indigenous people. Finally, the third question highlights opportunities as women for farm decision-making. Collectively, this research illustrates various issues that impact Indigenous quinoa-producing women's empowerment in Ecuador. The research questions are:

1. How do Indigenous people access productive resources, given historical colonial and postcolonial legacies, when producing quinoa in rural Ecuador?
2. How does the Indigenous cooperative empower its members to overcome marginalization?
3. How does gender influence Indigenous women's decision-making when producing quinoa in rural Ecuador?

Conceptual Framework

Empowerment in agriculture is unique and context specific and, for Indigenous women in Ecuador, it is highly influenced by both their Indigeneity and their gender. Indigenous people are

understood in this research as aboriginal groups with unique cultural identities that are different than other sectors in the country and who are governed by their own social, economic, and political systems (INEC, 2006). Indigenous people in Ecuador self-identify as plurinational³ and multiethnic people and include thirteen recognized nationalities, each with their unique culture, language, and organizational structure (Radcliffe, A. Laurie, & Andolina, 2002).

Indigenous people, while not all the same way, often have unique struggles often from constructed and reconstructed colonial and postcolonial legacies that have forced them into rural areas facing poverty and isolation. Gender is associated with men and women's opportunities for power and privilege resulting from local rules and norms, which often include men as heads of the household and the breadwinners and women in charge of subsistence production and reproductive work (Kabeer, 2016). It is important to analyze Indigenous women because they are major contributors in agriculture. Yet, they have been marginalized as Indigenous people from centuries while at the same time face gender power inequalities, both influencing their opportunities for empowerment.

Organizations such as the United Nations and the World Bank as well as scholars have studied empowerment by using tools and indicators to measure and compare men and women's political positions, educational levels and more (Schuler, 2006; Folbre, 2006; World Bank, 2005; Malhotra & Schuler, 2002). Such tools were created to measure men and women's power relations; however, they often do not specifically focus on agriculture and, their broadness can result in confusion about what aspect of people's lives they actually measure (Mills, 2010).

One prominent tool and the first publicly available one that measures gender empowerment in agriculture is the Women's Empowerment in Agriculture Index (WEAI)

³ The recognition and respect of all Indigenous nationalities each with their unique culture, language, and structure (Altmann, 2013).

survey. The WEAI was created by USAID in 2010 in conjunction with IFPRI and OPHI⁴ (Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015). It is composed of five domains of empowerment: production, resources, income, leadership, and time (Sraboni, Quisumbing, & Ahmed, 2013). This research focuses on production and resources, because decision-making about *production* activities and *resource* use are highly influenced by people's gender, Indigeneity, and their contextual characteristics, which align with the goals of this study (Alwang, Larochelle, & Barrera, 2017).

The use of the WEAI in Latin American studies is limited, but studies on decision-making that use or where guided by the WEAI often find decision-making about production and resource use as highly influenced by gender and often find it as jointly made between husband and wife (Alwang, Larochelle, & Barrera, 2017; Twyman, Muriel, & García, 2015). Women engaging in interdependent or joint decision-making was found empowering because women have saying about household decisions (Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015; Alkire, et al., 2013).

The WEAI is a survey tool useful at tracking, comparing, and recognizing the importance of women's work and input in agriculture, but it faces criticisms from being too lengthy and potentially inadequate to measure empowerment because it is often considered intangible and unquantifiable (Akter, et al., 2017). For example, O'Hara and Clement (2018) use of the WEAI in Nepal and demonstrated the value of not only qualitative analysis but contextual settings to truly understand women's empowerment. Thus, while the participants engaged in joint decision-making and possessed high scores in the WEAI, women did consider themselves as empowered during the interviews. Men's absence was common in farming and contributed to "complex

⁴ United States Agency for International Development (USAID), International Food Policy Research Institute (IFPRI), and Oxford Poverty and Human Development Initiative (OPHI)

household structures and relationships” that made their analysis “insufficient for measuring or understanding gender empowerment” (O'Hara & Clement, 2018, p. 121).

This research addresses concerns of length by analyzing two WEAI components (production and resources) qualitatively to provide a local and detailed descriptions of Indigenous women's empowerment. Additionally, because the WEAI is often used in Africa and Southeast Asia countries (Sraboni, Quisumbing, & Ahmed, 2013; Malapit & Quisumbing, 2015), this research addresses a gap by utilizing components of this tool in Latin America in a unique context: Indigenous women quinoa producers in rural Ecuador.

The index components and concepts are rooted in definitions by prominent feminist scholar Naila Kabeer (Alkire, et al., 2013). Thus, empowerment is defined in this research as the “expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them” (Kabeer, 1999, p. 437). Kabeer's definition was selected because it is widely used in the empowerment literature and it emphasizes the importance of context and life choices, which are important for understanding Indigenous women's ability to pursue goals, access resources, and make decisions in rural Ecuador amidst a long-standing history of colonial discrimination (Lavinias Picq, 2012; Radcliffe S. A., 2015; Waters, Ehlers, Ortega, & Kuhlmann, 2018).

Access to productive resources can positively impact Indigenous women's empowerment, self-worth, and respect within their communities in agriculture (Hernandez Castillo, 2010). Thus, access is defined here as the ability to use valuable resources, such as land, water, seeds, fertilizers, and machinery (Akter, et al., 2017), beyond ownership, that impact people's quality of life given local sociocultural structures (Kabeer, 2005). A prominent strategy in agriculture for increasing empowerment are memberships in cooperatives, which allow

members to pool resources and share processing costs, all of which improve their bargaining power (Borda-Rodriguez, Johnson, Shaw, & Vicari, 2016). However, access is not the only determinant leading to deeper understandings of Indigenous women's empowerment. It is also important to understand how and by whom farming decisions are made (Cornwall, 2016). Decision-making is defined in this research as people's ability to pursue life goals in agriculture by determining household priorities given their unique contextual settings (Sraboni, Quisumbing, & Ahmed, 2013).

Understanding Indigenous women's opportunities for decision-making is crucial for their empowerment, particularly when they have become the principal producers due to men's absence in the farm. Indigenous women's increased participation in farm activities, referred to here as the feminization of agriculture, raises questions about decision-making processes and the distribution of decision-making power related to farm activities. Women have the right to choose and make decisions that align with their rights, values, and goals to improve their quality of life. However, women, especially those who are indigenous in Latin America (Molyneux & Thomson, 2011), continue to be among the most vulnerable populations in rural areas (Bose, 2017).

Ultimately, as shown on Figure 1.1, Indigeneity and gender influenced Indigenous women's access to resources, decision-making opportunities, and overall empowerment. More specifically, Indigenous women's access to resources and the ability to expand their life choices was limited by their Indigeneity partially because colonial and postcolonial legacies pushed them into rural isolation, which restricts their empowerment. External contexts, such as the participant's membership in a quinoa cooperative increased their access to material resources and agricultural information to improve production, bargaining power, and ability to make strategic

choices in the market, which was empowering to them. However, Indigenous women's ability to make decisions was denied because men had greater authority from patriarchal structures, even when women are principal farmers, which negatively influenced the Indigenous women's empowerment. Ultimately, understanding how Indigeneity and gender influence Indigenous women's empowerment provides a venue for improved policy creation and application as they are major contributors in agriculture but among the most vulnerable group in Ecuador.

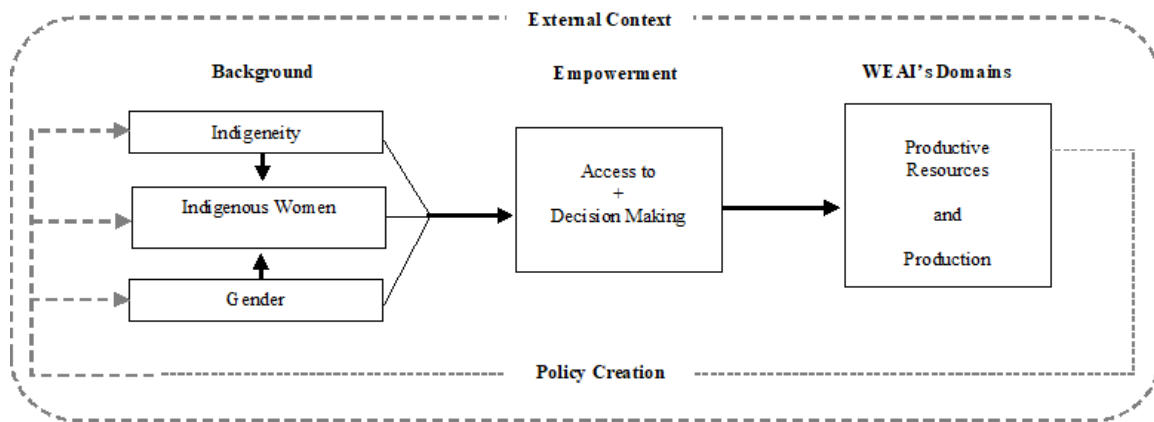


Figure 1.1. Diagram of Conceptual Framework about Indigenous Women's Empowerment. Source: Author

Research Methods

This research study collected data in the form of focus groups, face-to-face interviews, private and public documents from and about the Indigenous cooperative as well as observations and field notes. The cooperative was first contacted in 2014 when visiting their processing plant and communications via email and phone were accomplished until the field trip in 2018. The field research lasted five months, which occurred during the quinoa harvest and planting seasons between the year 2018 and 2019. Data included three focus groups with Indigenous women and men quinoa producers: one with men and women, one with only women, and one with only men. All producers were recruited through purpose sampling (Ritchie & Lewis, 2014), which indicated that they were from a specific rural community working with the selected cooperative.

However, all came from diverse backgrounds including various marital status (married, single, and widowed), educational level (none, elementary school, and two had a college degree), asset portfolio (number, location, and size of land), and an array of livelihood activities besides quinoa production such as husbands working in construction or as taxi drivers. Nonetheless, this research provided consensus findings that reflect the participants' shared experiences, helpful at understanding their overall empowerment.

The participants from the focus groups were recruited for the individual interviews in their community. Twenty-six interviews were collected with the producers as well as eighteen interviews with key informants. The key informants were first recruited from the cooperative's reference and later from recommendations by other informants, a process called snowball sampling (Ritchie & Lewis, 2014). They included people who work in the cooperative as a committee member or workers in the processing plant and representatives of the government such as from MAG⁵ and INIAP⁶ or from their organic and Fair Trade certifications.

The collected private documents came directly from the cooperative about the members farm and quinoa production characteristics, such as size and location of land and more. Public documents were collected online from government websites, such as INEC,⁷ MAG, and INIAP and newspapers about the participants, their location, and the cooperative, which went back to early 2000s when the cooperative was created. Private documents included reports by the cooperative about the participants' production characteristics, such as land size, resource use in the last 3 years, including seeds, machinery, fertilizers, etc. The multiple methods for data collection were utilized in a case study design to provide detail and in-depth understandings

⁵ Ministerio de Agricultura y Ganadería – Ministry of Agriculture and Husbandry

⁶ Instituto Nacional de Investigaciones Agropecuarias – National Institute of Agrarian Research

⁷ Instituto Nacional de Estadística y Censos – National Institute for Statistics and Census

about Indigenous women's empowerment (Liamputtong, 2010). A case study analysis was chosen as it "draws from multiple perspectives (whether through single or multiple data collection methods) and is rooted in a specific context which is seen as critical to understanding the researched phenomena" (Ritchie & Lewis, 2014, p. 76).

The observations and field notes were about the producers natural settings such as daily farm activities and public cooperative and producer meetings. For example, I joined the participants in their harvest, threshing, and planting activities, which provided further understandings about how and what forces influence their opportunities for quinoa production as Indigenous people and as women. The observations and field notes considered my positionality as a researcher when in the field and making assumptions about the participants (Liamputtong, 2010), such as having an insider and an outsider status. My insider status, such as being a woman and from Chimborazo, Ecuador, helped me gain trust when engaging in individual interviews especially with women. My heritage and name, Sumac, are Indigenous, but I am considered mestiza and I currently live and study in the United States. Thus, while not being considered Indigenous, my shared positionality (Mullings, 1999) such as my name and bilingual English-Spanish skill allowed me to connect and gain trust from my participants.

Other strategies to ensure trust among the participants and ultimately ensure a good data collection methodology were implemented. First, a pre-data collection trip was scheduled which increased support from the cooperative leaders and members, including staying in two participants' homes as well as visiting many families and crop fields. Second, an Indigenous woman interpreter was hired during the data-collection and who was from another community to

help with Kichwa-Spanish translation and interpretation of the participants' culture.⁸ I was able to foster trust and cooperation through my shared experiences with the participants, the pre-data trip, and by hiring the Indigenous interpreter, but I also recognize that the collected information might be partial and, thus claims are made cautiously.

Study Area and Population

This study is located in the province of Chimborazo in Ecuador (Figure 1.2). Chimborazo has the highest quinoa production and the largest Indigenous population in the Andes of Ecuador (INEC, 2010; Pro Ecuador, 2015), making it well-suited to investigate the empowerment of Indigenous quinoa producing women. Ecuador is the third largest exporter of quinoa globally, after Peru and Bolivia (Kerssen, 2015; Walsh-Dilley, 2013; Bedoya-perales, Pumi, Mujica, Talamini, & Domingos Padula, 2018). Quinoa is historically produced and consumed by Indigenous groups, and it is naturally grown on high-altitude land often with harsh weather conditions. The crop is often ignored nationally because it is regarded as an "Indian crop" and, thus equated to poverty, remnants of racist colonial legacies and practices. However, due to its high global demand by health-conscious rich consumers, quinoa represents an income opportunity for small-scale Indigenous producers. Quinoa production is an opportunity recognized by the government of Ecuador by investing on its production as a national economic strategy, especially after 2013 when the United Nations declared it the International Year of Quinoa (FAO, 2015).

⁸ She was the second interpreter, as the first one left due to her uneasy feelings with the community. I later understood that the first interpreters' lack of Indigenous self-awareness from living in an urban area, such as not wearing an Indigenous attire and not having a well-spoken Kichwa were determinants for the participants to feel comfortable during interviews.



*Figure 1.2 Map of Ecuador and Chimborazo in red.
Source: Adapted by author from Ezilon*

The research population consists of Indigenous women and men quinoa producers who are members of an Indigenous quinoa cooperative. More specifically they are from the Chimborazo Quichua (Kichwa) nationality and the subgroup Puruhá (Puruwá) characterized by their location in the province, culture (including clothing - Figure 1.3), Kichwa language, and organizational structure (chp. 3). The cooperative was selected because it is managed by and for Indigenous people and focuses on Indigenous empowerment through quinoa production and sales. It represents an important organizational affiliation for the participants at affecting their well-being and livelihoods through enhanced access to resources and increased bargaining power. The Indigenous-only cooperative emerged as a response to their poor treatment by a local Catholic nonprofit focused on quinoa production that denied Indigenous participation in leadership and managerial positions. The Indigenous coop now operates its own processing plant near the members' rural locations, which facilitates access to technical assistance in the field as well as distribution of new agricultural information and resources to support quinoa production.



Figure 1.3. Traditional Puruwá women's (left) and men's clothing.
Source: Author

Key Findings and Contribution to the Literature

This case study about Indigenous women's empowerment is structured as follows: (1) analyze their access to resources as Indigenous people in rural isolation, (2) understand how membership to the quinoa cooperative influences their opportunities for empowerment, and (3) provide evidence on their decision-making opportunities in the farm as women quinoa producers. Collectively, the three primary chapters illustrate how Indigenous women's empowerment and, thus, opportunities to make strategic life choices are affected by both their Indigeneity and their gender.

Chapter two answers the research question about participants' access to productive resources in quinoa production given colonial and postcolonial legacies. Indigenous rural marginalization, a consequence from colonization, diminishes access to quality land, water, seeds, fertilizer, and machinery for quinoa production. Access to productive resources in agriculture relates not just to ownership, but peoples' ability to strategically make use of such resources. For example, while the participants own their land, due to living in rural isolation, the

land was of poor quality and in high altitudes with harsh weather conditions including hail, frost, droughts, and heavy rain that increased risks associated with crop losses. The isolated high altitudes often lacked roads which prevented them from accessing machinery and transporting fertilizer to their land.

Access to water was from rain, and the producers saved quinoa seeds from their own production, but both are at risk due to the extreme weather conditions in the high isolated altitudes. Quinoa is a significant income opportunity since it survives much better than other crops, such as fava beans and melloco, in part because it requires less water in the already harsh elevations (FAO, 2015). Nonetheless, quinoa was still difficult to produce due to such challenging conditions. Overall, Indigenous rural isolation inhibits the participants' opportunities for agricultural productivity, a consequence from colonialism, which diminishes Indigenous women's overall opportunities to make strategic life choices leading to their empowerment.

Chapter three focuses on how membership in a cooperative influenced Indigenous women's opportunity for empowerment as Indigenous people through the production and sales of quinoa. The cooperative began under the umbrella of a nonprofit Catholic group focused on assisting Indigenous people in the province of Chimborazo. The participants perceived their membership to the nonprofit group as unfair and discriminating due to their exclusions from leadership and managerial positions. Thus, they created an Indigenous-only cooperative that provided them an opportunity for self-empowerment to overcome marginalization and rural isolation. The cooperative is embedded with Indigenous *minga* norms of participatory collaboration and self-governance that help with their organized work and distribution of information and small tools for quinoa production. For example, the cooperative focuses on Indigenous marginalization by sending bilingual representatives to distant external Spanish-

language workshops and trainings, who later share that information in their native Kichwa language with members. Access to current agricultural information improves the participants' strategies for production and bargaining power against market intermediaries.

Providing access to small tools is another strategy used by the cooperative to enhance production as most of the Indigenous producers and who are mostly women, engage in intensive labor by hand because their land is located on steep slopes and lacks roads for machinery. *Minga* norms go beyond an institutional structure and represent a cultural way of living for the participants' families and community and is embedded in their cooperative. The findings of this chapter illustrate empowerment opportunities for Indigenous women as members in a coop by enhancing access to information and material resources to improve quinoa production.

Chapter four focuses on the influence of gender on decision-making among Indigenous women. Decision-making is the ability through which people determine priorities in their household, given contextual settings, thereby impacting their pursuit of goals in agriculture (Sraboni, Quisumbing, & Ahmed, 2013). Scholars have argued that the ability to make decisions alone or jointly with a spouse is empowering because people have input about decisions in the farm (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019; Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015; Alkire, et al., 2013). This research found that while the participants described engaging in joint decisions, which contributes to the literature on joint decision-making in rural Ecuador. In practice men often had the final say about farm activities. Women's decreased decision-making opportunities occurs even in a feminization of agriculture because men are considered heads of the household by most participants. Men's increased authority was often due to religious beliefs, which leave women with less authority for decision-making and thus, diminishes their overall empowerment.

These three chapters collectively illustrate the complex realities of empowerment for Indigenous women quinoa producers in rural Ecuador. Opportunities for empowerment are impacted by their Indigeneity, which often decreases access to crucial resources including high-quality land and machinery use, which in turn inhibit their agricultural productivity and well-being. While Indigenous women have limited resources, their membership in the cooperative increased exposure to agricultural information, which enhanced their production and bargaining power for better market prices, thus positively impacting their empowerment.

Indigenous women are still restricted by their gender due to patriarchal structures, such as a feminization of agriculture in which women's participation in agriculture has increased, but their decision-making capabilities were still limited by their gender. The participants described engaging in joint decision-making which can be empowering because women have input on agricultural activities. In practice, however, men had greater authority in final decisions, even when Indigenous women are principal producers and have high knowledge about activities. This gender-influenced and diminished decision-making power diminished Indigenous women's opportunities for empowerment. Thus, this study makes unique contributions to the literature by focusing on vulnerabilities from both Indigeneity and gender that influence Indigenous women's overall empowerment, which are often overlooked by policies, programs, and organizations.

Dissertation Structure and Overview

The dissertation is divided into five chapters, which includes an introduction chapter, followed by three chapters each with a unique research question that focuses on key concepts, and a conclusion chapter. The introductory chapter includes the research background, questions, conceptual framework, methodology, and a brief description of the studies and their key findings. Chapters two, three, and four are articles that examine ways Indigenous women's empowerment is affected by their access to resources as Indigenous people and by their decision-

making opportunities as women. Chapter five concludes the dissertation by summarizing Indigenous women's opportunities for empowerment in agriculture as Indigenous people and as women. Collectively, the three main research chapters illustrate that Indigenous women face substantial marginalization due to colonial legacies and patriarchal structures, particularly as relates to access to resources and decision-making power, which influence their opportunities for empowerment.

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CHAPTER 2. INDIGENOUS QUINOA PRODUCERS AND COLONIAL LEGACIES IN RURAL ECUADOR

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Modified from a manuscript to be submitted to *The Journal of Women's Studies and International*

Forum

Abstract

Colonial and postcolonial practices in Latin America have pushed Indigenous people into rural areas with scarce access to resources for agricultural production. Programs and projects that advocate for Indigenous groups and the reduction of rural poverty often focus on agriculture as a major source of income and employment in rural areas. Quinoa, an ancient Indigenous crop, is part of an economic strategy among Andean nations, including Ecuador, especially after the United Nations' 2013 International Year of Quinoa. This study focuses on Indigenous producers who are members of a quinoa cooperative in the province of Chimborazo, Ecuador. Research shows that limited access to productive resources such as land and water is a challenge faced by Indigenous people in rural Ecuador. However, a few studies have investigated access to more than one resource to provide a more holistic account of Indigenous quinoa producers' agricultural resource access, particularly given wide-ranging and detrimental colonial and postcolonial legacies. The research collected data from interviews with producers and key informants, focus groups, field notes, and observations. The study found that quinoa production provides a valuable economic opportunity for Indigenous populations in rural Ecuador, yet their limited access to crucial resources due to rural isolation inhibits overall crop productivity and income generation. The participants face poor quality land that is in difficult-to-reach locations. They also have an unreliable water supply and inadequate availability of machinery due to poor or nonexistent roads. Despite governmental efforts to enhance production, the poor conditions

faced by the Indigenous participants negatively impacted production opportunities and further increase their rural poverty, consequences of oppressive colonial and postcolonial legacies. Policies and programs that account for and address the unique challenges of Indigenous people, such as access to roads and irrigations systems in rural isolation, are needed to support the development of this historically marginalized group.

Introduction

Since early colonization in Latin America, Indigenous groups have been forced into rural isolation with limited access to agricultural resources, their main source of income and employment. In Ecuador, colonization included indentured labor in *haciendas*, or feudal land tenure, which isolated Indigenous people into rural areas as agricultural producers (Burman, 2016). Indigenous people still remain in marginalized conditions. For example, while the agrarian reform in the 1960s included land redistribution, the redistributed land among Indigenous people was of poor quality and located in remote high-altitude locations (Kay, 2015). Today, about eighty-seven percent of Indigenous people in Ecuador live in rural areas (International Work Group for Indigenous Affairs, 2020) and forty-three percent live in poverty (INEC, 2019). The Indigenous peoples' poor land conditions in these locations negatively impact their agricultural production and contributes to their poverty status.

To better understand issues of Indigenous marginalization when accessing resources, this study asked: how do Indigenous people access productive resources, given historical colonial and postcolonial legacies, when producing quinoa in rural Ecuador? Quinoa is a crop naturally grown in the Indigenous high-altitude land that provides an income opportunity due to high global demand (Peralta & Mazon, 2015). The study found that the Indigenous producer's marginalized rural locations, often in slopes and without roads negatively impact access to resources in agricultural production including land, water, seeds, fertilizer, and machinery.

The poor land conditions and in isolated locations, legacies of colonization, decrease Indigenous smallholders' opportunities for production, marginalization, and poverty status. While quinoa is a crop with high global demand and income potential, producers cannot fully benefit from it due to their limited access to productive resources. Thus, understanding Indigenous marginalization and how it affects access to such resources represents an important aspect of the livelihoods of Indigenous groups in Ecuador. A deeper understanding of Indigenous marginalization contributes to the literature on the negative consequences of colonial legacies and may influence future policies and programs to focus on Indigenous vulnerabilities when focusing on agricultural productivity and alleviating rural poverty in Ecuador and Latin America more broadly.

This paper begins by providing a description of Indigeneity in the context of colonialism and postcolonialism in Latin America. The second section describes Indigenous people's access to productive resources in agriculture in the Ecuadorean Andes, such as inadequate roads that decrease opportunities to transport nutrient fertilizers in their already poor land conditions. The paper then describes the methodology, including strategies for data collection and analysis, and explores the results and conclusions, such as how crucial agricultural resources are access and often limited due to rural isolation and discrimination from colonialism.

Indigeneity in Latin America and Ecuador

In the developing world, the legacy of colonization continues to place Indigenous people at a disadvantage. In Latin America, Indigenous people have been pushed into rural isolated locations with scarce resources such as land and water, diminishing their income opportunities and often increasing their poverty status. Indigenous marginalization is evident in Ecuador by their high concentration in rural areas (International Work Group for Indigenous Affairs, 2020) and by their high poverty rates. While Indigenous people make up only seven percent of the total

population, they make up about 43 percent of those living in poverty in rural Ecuador (INEC, 2019).

Indigenous people are descendants of groups who lived in the area before colonization who have maintained many of their unique social, economic, cultural, and political institutions (Burman, 2016). However, conceptualizations of Indigeneity are unique and contested, as they vary among groups given their local settings, including for Indigenous people, governments, organizations, and scholars. Generally, Indigenous people self-identify and/or are recognized as Indigenous people in society. According to CODENPE,⁹ Indigenous people are defined in Ecuador as aboriginal groups formed by communities, towns, or centers with cultural identities that are different than other sectors in the country, which are governed by their own organizational systems socially, economically, and politically (INEC, 2006).

Figure 2.1 shows 13 recognized nationalities, 6 of which are Kichwa (Quichua) subgroups. Indigenous people self-identify and are recognized as plurinational and multiethnic people,¹⁰ of all which are uniquely recognized by the government (Lavinas Picq, 2012; Altmann, 2013). A nationality means a group of people or towns who share a historical identity, language, culture and who live in a specific territory (INEC, 2006). The concept of Indigeneity, however, has been reappropriated by Indigenous people since it was initially used derogatorily by European invaders as a form of social hierarchy (Levi & Maybury-Lewis, 2010). The following section describes colonization and postcolonization in the context of Ecuador and their impact on Indigenous people in rural Ecuador.

⁹ Consejo de Desarrollo de las Nacionalidades y Pueblos del Ecuador – Council for the Development of Nationalities and Towns of Ecuador

¹⁰ The recognition and respect of all Indigenous nationalities each with their unique culture, language, and structure (Altmann, 2013).

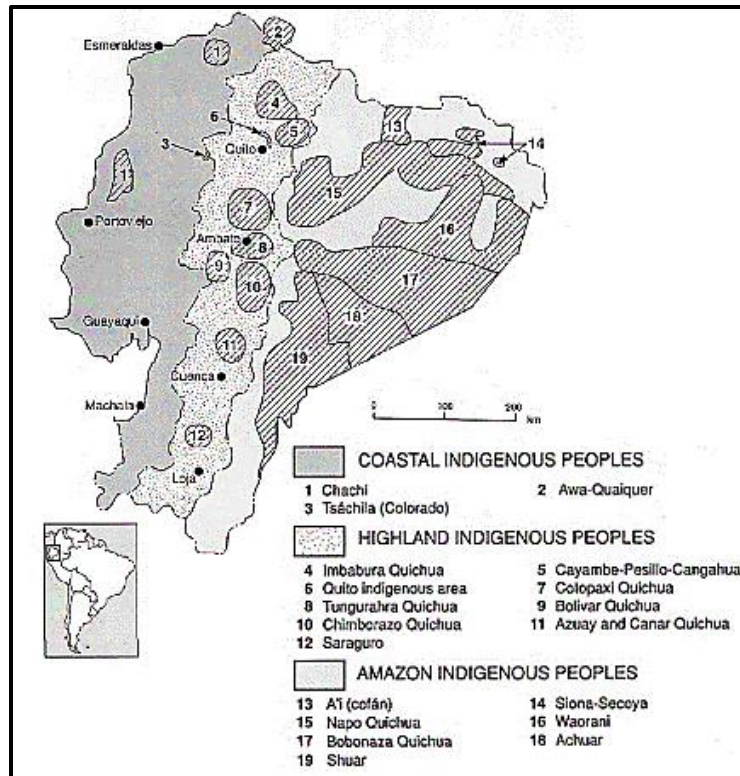


Figure 2.1. Map of Indigenous nationalities in Ecuador. Source: (Radcliffe, A. Laurie, & Andolina, 2002). Printed with permission by Taylor & Francis

Colonialism

Starting in the XV century through the late nineteenth century, European colonizers invaded and occupied large portions of the world, including the Americas (Ashcroft, 2013). Colonial occupation under the international law referred to as the Doctrine of Discovery claimed European superiority over Indigenous nations. Such rights translated to European ownership of land, assets, and people, as well as control over governmental, political, and commercial rights without Indigenous knowledge or consent. The international law justified claims of superior racial and religious status (i.e., Christianity) over those of the Indigenous population (Miller, 2011). Colonialism represented both structural and social changes by Europeans, including land confiscations and the denial of Indigenous intellectual and cultural practices (Coulthard, 2014).

In Latin America, colonialism had an impact on cultural practices and land structures (Cook & George Lovell, 2001). Indigenous groups gradually adapted the colonial culture of diet,

agricultural practices, and religion. Colonization also included structural changes through the management of land and agricultural work that were supported by the institutions of *haciendas* or feudal land tenure. Aristocrats were given land by the Spanish crown to populate the conquered land, ignoring Indigenous people's laws, culture, and community structures (Miller, 2011). Feudal land tenure forced Indigenous groups into indentured labor and, instead of payment, Indigenous families lived and used unoccupied and often distant land for subsistence production and animal grazing (Grieshaber, 1979; Wolfgang, 2012).

Spaniard colonization in Ecuador resulted in the production of European crops such as wheat, while discouraging the production of Indigenous crops such as quinoa (Kuokkanen, 2011). Additionally, colonization also implemented new agricultural practices often disruptive to the Andean environment such as introduction of sheep (Cade, 1992). *Huasipungueros*¹¹ typically worked six days per week in exchange for “pay at about half the free-labor rate or for the use of a small plot of land (the *huasipungo*) and at least one other privilege, such as gathering firewood or the use of the landowner's pastures” (Blankstein & Zuvekas, 1973, p. 76). The unequal status of Indigenous people as unpaid laborers in *haciendas* provided a “dual cultural sector: Spanish in the city and Indian in the countryside” (Grieshaber, 1979, p. 112) that generally furthered their marginalization in the country.

Overall, through the Doctrine of Discovery, colonizers seized Indigenous people's land and imposed agricultural and labor practices that placed them at the bottom of hierarchical structures. Centuries of colonial conquest in Latin America, and in Ecuador, were detrimental to Indigenous people's well-being, and continue to marginalize them as the poorest people.

¹¹ Tenant farmers or Indigenous male and female workers working and living in *haciendas* land (Bretón Solo de Zaldivar, 2008).

Postcolonialism

Colonialism included the control of land, labor, and farming practices through the expansion of racism, capitalism, and epistemic Eurocentrism (Andolina, 2012). Indigenous groups remain marginalized after colonization through socially and economically uneven policy and program structures (Partridge, 2016). Postcolonialism is thus a manifestation of oppressive colonial legacies that persist today (Ashcroft, 2013).

An example of the continued Indigenous marginalization in the 19th century, postcolonization, were discriminatory practices and policies by the government of Ecuador. As Radcliffe and Laurie stated, after colonization Indigenous populations “were erased from national development imaginaries at the same time that diverse spaces were reconfigured to marginalize them spatially and socially (Radcliffe & Laurie, 2006, p. 237). An important policy that further marginalized Indigenous groups was the agrarian reform movement during the 1960s. During the era of so-called modernization and political stabilization, governments in Latin America and Ecuador abolished the *haciendas* system and indentured labor (Kay, 2015).

To decrease social conflicts, Indigenous producers could purchase pieces of *haciendas*, however, the available land was of poor quality and in isolated areas (Wasserstrom & Southgate, 2013). For instance, the offered land was unoccupied by the landlord, which meant it was often hilly, subject to erosion, and at distant locations. Additionally, producers could only take ownership of land they had personally worked on it for at least three years, a condition influenced by various landlord preferences and decisions (Research Directorate, Immigration and Refugee Board, Canada, 1999). The purchased land in isolated high-altitude locations meant limited access to basic resources such as water and, thus, was detrimental to their long-term agricultural production and quality of life (Partridge, 2016).

During the 1970s, Indigenous groups formed social movements to pressure the government of Ecuador for inclusive policies and programs (Becker, 2011). Some of their contributions included Indigenous political representation and respect towards Indigenous food sovereignty and plurinationalism in the 2008 updated constitution (Giunta, 2014; Becker, 2011). However, Indigenous marginalization still remains, and their isolated rural locations are increasingly ill-suited for agriculture, their major source of income and employment (Bebbington & Perreault, 1999; Partridge, 2016). Access to productive resources is a critically important component of agricultural productivity, inclusion, and overall reduction of poverty among Indigenous people in rural Ecuador. The following section outlines the research's conceptual framework of Indigenous access to resources in rural Ecuador.

Indigenous Access to Resources

This research focuses on Indigenous people's access to productive resources in agriculture in order to understand Indigenous marginalization in rural Ecuador. Limited access to productive resources negatively impacts their production levels and in turn their income and quality of life. Access is defined here as the opportunity to make use of available resources in agriculture, given sociocultural structures that influence their quality of life (Kabeer, 2005). The research analyzes five agricultural resources commonly used in agriculture: land, water, seeds, fertilizers, and machinery (Akter, et al., 2017).

Studies on resource access often focus on Indigenous rural poverty and analyze only one resource at a time, such as water (Hidalgo, Boelens, & Vos, 2017; Hoogesteger, 2012) or land (Gray, 2009; Bretón Solo de Zaldivar, 2013). This research focuses on access to several productive resources to understand Indigenous marginalization among quinoa producers in Ecuador. Additionally, while Ecuador is the third largest global quinoa exporter, most studies have focused on Bolivia and Peru, the other top exporting nations (Kerssen, 2015; Walsh-Dilley,

2013; Bedoya-perales, Pumi, Mujica, Talamini, & Domingos Padula, 2018). Thus, this research fills a gap in the literature by focusing on the unique struggles of rural Indigenous quinoa producers in the province of Chimborazo, Ecuador.

Methodology

This research used a case study design to examine a contemporary phenomenon, such as Indigenous marginalization, of a specific group and location, such as Indigenous people who are members of a quinoa cooperative and who live in rural areas of the province of Chimborazo, Ecuador (Ritchie & Lewis, 2014). According to Yin (2018), the use of a case study is appropriate when it focuses on answering a contemporary problem through in-depth descriptions by asking how questions and focusing on the populations' unique contextual conditions. For example, this research examines how Indigenous people access to productive resources, given contextual historical colonial and postcolonial legacies, when producing quinoa in rural Ecuador. This qualitative study provides detailed and rich information to describe people's lives (Akter, et al., 2017). The study collected data through individual interviews, focus groups, observations, and field notes.

Study Context, Area, and Population

Agriculture in Ecuador represents about ten percent of the national Gross Domestic Product (GDP) and employs about 23 percent of people nationally. Agriculture is, however, critical to rural areas as it employs about 53 percent of smallholder families, many of whom are Indigenous and live in poverty (INEC, 2019; Pontón & Pontón, 2008). Following the International Year of Quinoa in 2013, Ecuador's government increased investment in quinoa production to provide economic opportunities among rural groups (FAO, 2015).

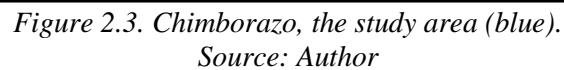
Quinoa is an ancient crop often produced and consumed by and for Indigenous people, but has been frequently disregarded as an "Indian" crop since colonization (Andrews, 2017). It is

naturally produced at high altitudes in harsh environments and with little resource requirements, such as abundant water for growth (Figure 2.2). During the last 20 years, demand for this highly nutritious grain has sharply increased among health-conscious consumers in developed countries such as the United States and European nations (FAO, 2015). The crop's resistance to harsh conditions and high global demand provide an income opportunity, especially among Indigenous smallholders in Ecuador (Gamboa, Schuster, Schrevens, & Maertens, 2017). The quinoa crop is, however, labor intensive and usually produced by hand, as the steep isolated locations limit opportunities to use machinery. Additionally, the time from land preparation to when the quinoa seeds are bagged is about eight to ten months, so quinoa can produce income only once per year. Quinoa remains an important crop for the Indigenous participants because it is among the only income opportunity in their isolated rural locations.



Figure 2.2. Quinoa plant maturing (green to purple) in the province of Chimborazo. Source: Author

The study area is the province of Chimborazo (Figure 2.3) with the highest concentration of Indigenous people and the largest production of quinoa in the Andes of Ecuador (INEC, 2010). The participants are members of the Chimborazo Kichwa nationality and belong to the subgroup Puruwá (Aguilo, 1992). Puruwá participants are characterized by their Kichwa



The participants in this study live in a rural community working with an Indigenous cooperative; which is managed by and for Indigenous quinoa producers in the province of Chimborazo. All participants, however, range from different socioeconomic characteristics, such as various marital status (single, married, widowed), educational level (none, elementary, and two with college degree), but the findings reflect the participants' shared experiences, helpful at understanding their overall empowerment. The cooperative's central goal is to promote Indigenous social inclusion and development by assisting Indigenous smallholders with organic quinoa production and sales. The cooperative organization provides members access to

agricultural information, technical assistance (e.g., crop management), and rotation-crop seeds (e.g., vetch). While quinoa sales exist in both national and international markets, the cooperative concentrates on international buyers, including Germany, Belgium, the United States. Overall, the Indigenous smallholders' coop membership provides an important opportunity to access to valuable knowledge and resources while having a reliable market for their quinoa sales.

However, they still face increased vulnerabilities in agriculture, due to their rural isolation which are further explained in the findings section.

Data Collection

The data collected during the interviews and focus groups was guided by a qualitative questionnaire from Akter, et al., (2017). The questionnaire used the five empowerment domains from the Women's Empowerment in Agriculture Index's (WEAI), which includes income, leadership, time, production, and resources. This study focused on the concept of access derived from WEAI and the questionnaire, but selected two domains, production and resources, to understand Indigenous marginalization. Access to productive resources, such as land and water (Radcliffe S. A., 2014), are highly limited by the legacies of colonialism and specifically Indigenous people's isolated rural locations in Ecuador and Latin America (Wolfgang, 2012), but this research also focuses on additional resources such as seeds, fertilizer, and machinery as they are also important components for quinoa production.

The focus groups generated information on the participants' individual circumstances, attitudes, beliefs, and behaviors related to Indigenous marginalization and access to resources in the context of colonialism (Ritchie & Lewis, 2014; Liamputtong, 2010). Three focus group sessions of about 120 minutes each were implemented as follows: one with both women and men, one with men only, and one with women only. The participants were recruited based on their Indigeneity and location in the study area, participation in quinoa, and membership in the

selected Indigenous cooperative. Each focus group included between six to ten participants to ensure that all participants felt comfortable and were given an opportunity to speak (Ritchie & Lewis, 2014). The focus groups were divided by gender to provide additional detail on their experiences as men and women. Group interviews explored the participants' Indigenous identities by considering their shared knowledge, opinions, and beliefs as Indigenous people.

Forty-four face-to-face semi-structured interviews were conducted, each of approximately 90 minutes in length. The interviews explored detailed descriptions of the participants' circumstances in agriculture as Indigenous people (Liamputtong, 2010, p. 162). The participants were recruited from the focus-group sessions and included a total of 26 Indigenous quinoa producers, 11 men and 15 women. Additionally, 18 interviews with key informants were conducted who work in or with the Indigenous cooperative. Some representatives were from government agencies such as MAG and INIAP or from private entities such as a nongovernmental organization and an organic certification company. The key informants were recruited through snowball sampling which means it started with suggestions by the cooperative and then by other key informants. All participants were given pseudonyms, but the producers' assigned names represented words in Kichwa.

Finally, observations and field notes also provided an opportunity to record information (what was seen, heard, felt by the researcher) outside the focus groups and interviews to enhance understanding of the lives and roles of the participants (Ritchie & Lewis, 2003). All data from the focus groups, interviews, observations, and field notes were collected over a period of five months (September 2018 to January 2019) during harvest, postharvest, land preparation, and planting. The combined data collection provided descriptive information related to the impact of colonial legacies on Indigenous access to agricultural resources for quinoa production.

Data Analysis

The research analysis was inductive and focused on patterns emerging from the collected data after multiple readings and interpretations (Akter, et al., 2017). The analysis of the data used the NVivo software, which is often used in qualitative social research studies to code data into patterns and themes (Woods, Paulus, Atkins, & Macklin, 2016). The central concept of access guided the research analysis in identifying the use and ownership of productive resources in quinoa production, all in the context of Indigenous rural isolation and colonial and postcolonial legacies.

Data analysis was conducted in three primary phases guided by Ritchie and Lewis' recommendations for data analysis (Ritchie & Lewis, 2014). First, phrases and quotes were coded in relation to productive resources such as land, water, seeds, fertilizer, and machinery. For example, when producers talked about land, all phrases were coded as *land*. Second, the codes were grouped into subthemes based on each resource. For example, land was subdivided into location, quality, size, and other. The third phase analyzed the themes and disclosed contextual issues related to resource access. For example, if access to water was from rain, it was unpredictable and often harsh after droughts. Also, all codes and themes were contextualized through the participants' histories and experiences as Indigenous people. For example, conversations about the participant's limited access to good quality land were contextualized through legacies from colonization such as the *haciendas* system.

The research analysis included data triangulation, a strategy used for improving research analysis and findings qualitatively (Birt, Scott, Cavers, Campbell, & Walter, 2016).

Triangulation is the process of comparing different data sources to check for accuracy and consistency. In this study, individual interviews, focus groups, observations, and field notes, were compared to clarify and add precision to the research findings and goals. This process

contributed to understanding the research phenomena and strengthened conclusions (Ritchie & Lewis, 2014). Overall, the combined data collection techniques provided rich and descriptive information to illustrate Indigenous marginalization and access to productive resources for quinoa in rural Ecuador.

Findings

A key aspect of agricultural production is access to resources, going beyond ownership, including those of good quality, such as land, water, seeds, fertilizer, and machinery. The participant access to these productive resources is significantly affected by their rural isolation and their historical marginalization as Indigenous people in Ecuador. Next, a description of the participants' access to each productive resource is included which are affected by their Indigenous rural isolation, consequence of colonial legacies and practices.

Land Quality

Access to good land is critical in agriculture. This study demonstrates that colonial legacies of discrimination against Indigenous population contributed to the Indigenous poor land conditions in this region. During the field visits, it was evident that the participants high altitudes¹² suffered from intense sunlight, droughts, violent winds, and heavy rain, which delayed, diminished, and often destroyed their crops. Additionally, while the participants' owned their land either individually or jointly with their spouses, it was in poor quality and small in size, both detrimental to agricultural production, especially quinoa.

Each participant owned and/or managed about three to five small pieces of land ranging from 2,000 to 100,000 square feet, but each piece had unique difficulties (Anon, Community Leader, Personal Communication, 2019). Land was either on steep slopes or relatively flat

¹² The land was often over 12,000 feet above sea level and faces extreme weather conditions (Luis, INIAP Representative Personal Communication, 2019).

surfaces, which was evident during the field visits as it was frequently accessed only by foot. Land on hills faced issues of erosion and nutrient runoff as shown in Figure 2.4. Tarpuy indicated that in steep “locations, when it rains a lot, land is lost down the hill and [with that] its nutrients (Tarpuy, Male Producer Personal Communication, 2019). Land on flatter areas was often on wet meadows and face issues of *cangahua*.¹³ The flat land served for animal grazing because it provided water for the pastures and animals (Figure 2.5). The participants described that land on flat surfaces was exposed to the harsh weather conditions (i.e. violent winds, frost, etc.) in comparison to land on hills which the latter is preferred for quinoa production.



Figure 2.5. Slopes often experience nutrient runoff after heavy rain. Source: Author



Figure 2.4. Flat land in wet meadows used for grazing and water for animals. Source: Author

The participants small land size is partially explained by family inheritances, where parents are expected to split land equally among all children (male and female alike) often upon dead. As Zampu described, “people do not have enough land because minifundio [i.e., already small land parcels] are getting smaller due to family inheritances” (Zampu, Male Producer Personal Communication, 2019). For “people who are focused on quinoa [production in Chimborazo]...the

¹³ Eroded cemented volcanic land, often unsuitable for agriculture because it does not easily absorb water (Espinosa, Moreno, & Bernal, 2018).

majority [of their land] is in poor conditions” (Luis, INIAP Representative Personal Communication, 2019). Thus, producers such as Tarpuy wished he “had more [land] to increase production [because] the same piece of land does not produce like it did when newly acquired and [when it had more] nutrients. The land gets tired” (Tarpuy, Male Producer Personal Communication, 2019). However, because quinoa is the only income generating crop compared to their production of wheat and barley, the Indigenous producers continue to produce it to survive in their isolated rural areas.

Additionally, agricultural productivity is diminished by the harsh weather conditions such as frost, hail, and droughts in high altitudes, further demonstrating how high altitudes and in rural isolation are problematic for the participants. For example, Sapi described that in 2017 “everything looked good. [I thought] we will have a good harvest, [but] we don’t know how God is, how things will be, [and] in one day frost came and all of it [quinoa production] was lost” (Sapi, Female Producer Personal Communication, 2019). Pallana further described that the volatile weather conditions often cause “downy mildew...¹⁴ [and] when hail falls, it is dangerous. One year we had hail and absolutely everything was lost” (Pallana, Male Producer Personal Communication, 2019). During the research visits, quinoa planting was delayed due to a drought and later many crops were lost because of landslides from heavy rain.

The participants’ experiences and research observations during the field visits demonstrate the many difficulties as Indigenous people in rural isolated areas, which are harmful to their agricultural production and overall quality of life. Small land size of poor quality and in isolated locations with harsh weather conditions are issues impacted by colonization. For example, Indigenous people were forced into marginalized rural areas in *haciendas*. Urku

¹⁴ Downy mildew causes yield loss that is common for the quinoa crop in the Andes (Choi, et al., 2010).

described that during colonization, *huasipungueros* were allowed to use the landlords land for personal use, but it was often on the hills or wet meadows, which are still reflected today (Urku, Male Producer Personal Communication, 2019).

Haciendas were abolished in the 1960s and former *huasipungueros* purchased land from such *haciendas*. However, the land available for Indigenous purchase was the land used as laborers while under colonial rule. Zampu described that the land available to purchase in their community “was not good for production, [because] it was swampy... [and had] salitre, [which is an] ash-like [substance] that comes from a white flower that will not let any production grow” (Zampu, Male Producer Personal Communication, 2019). Overall, colonial legacies in Ecuador impact Indigenous producers’ access to land, which contributes to their limited agricultural production opportunities, marginalization, and rural poverty status.

Reliable Water

All the farms in this study lacked irrigation systems, and thus, the participants relied on rain for their agricultural production. However, the harsh and volatile weather conditions in the Indigenous high altitudes increased risks associated with production loss. To overcome the severe conditions and rural isolation, the participants adopted various strategies for land use and production management. For example, the land on slopes was often preferred for quinoa production “because quinoa survives and does not need much water and much caring” (Kamay, Female Producer Personal Communication, 2019). Because quinoa is highly susceptible to humidity,¹⁵ the wet meadows were not suitable for its production.

Using rain as the only source of water for crops resulted in difficulties when producing quinoa as it is often volatile or even extreme in the participants’ high-altitude land. The crop

¹⁵ During the field visits producers shared that quinoa easily germinates and/or rots when exposed to high moisture.

needs little water for growth, but requires humidity for germination, so quinoa is planted during the rainy season between October and December (Juan, Quinoa Organization Representative Personal Communication, 2019). However, a recent drought, often mentioned as a risk associated with climate change by many participants, forced them to delay planting by almost two months during the field visits. Once rain came, it was excessive and heavy, forcing producers to re-plant quinoa multiple times due to runoff in slopes and loss from high soil humidity. The unpredictable rain “like this past year, [did not allow] quinoa to grow nor produce evenly” (Wiñana, Female Producer Personal Communication, 2019). Thus, the volatile weather conditions, often worsened by climate change, are problematic for agricultural production, even for quinoa, a low water dependent crop.

The combination of isolated location and steep terrain negatively impacted the creation of reliable access to water in agriculture through irrigation systems. The participants described unreliable and unpredictable rain for crop production before and during the period of this research. Such inconsistent water access also influenced the participants’ production, including when, where, and the types of crops that could be produced in their area. For example, cereal or cereal-like crops as such as quinoa, barley, and oats tend to require less water than other crops such as vegetables (Pallana, Male Producer Personal Communication, 2019). However, quinoa is the only income generating crop since the other low-water-dependent crops have little market value (Zampu, Male Producer Personal Communication, 2019). Overall, colonial legacies are reflected by the lack of access to basic infrastructure such as water among the Indigenous rural groups, thus decreasing their opportunities for agriculture and income.

Quality Quinoa Seeds

Quinoa production, while discouraged during colonization, remained a staple traditional crop among the participants. Access to quinoa seeds, thus, primarily comes from the participants' own harvest and harvests from family members, they do not rely on seed distributors. Kamay stated that she originally was given quinoa seeds by her grandparents and she saved additional seeds over time from her own production (Kamay, Female Producer Personal Communication, 2019). On average, about one to one and a half quintal¹⁶ of seed is saved from each harvest. The seeds are then divided in half with one half for consumption and the other for planting, the latter best used within a year of harvest to secure germination. The seeds for production were “collected [during pre-harvest] from the best panicles [Figure 2.6], from the thickest ones, and saved” for next year's planting (Yura, Male Producer Personal Communication, 2019).



*Figure 2.6. Quinoa panicle (left to right) flowering, maturing, and dried ready for harvest.
Source: Author*

¹⁶ Quintal = 100 pounds

Access to high-quality quinoa seeds is diminished by severe weather conditions. During the research visits, heavy rain caused mudslides in recently planted slopes and, thus, the participants lost seeds and needed to replant them multiple times. Such difficulties impact production and opportunities for income. Sapi described such processes and how she saved a specific amount of seeds from the previous year. She noted, “I already planted two times [during the research visit]. I hope it will stay since it is not raining as much now. When I planted it [before], it got covered in mud” and it did not survive (Sapi, Female Producer Personal Communication, 2019). Other producers like Tarpuy said he only “plants [quinoa] once. I do not repeat it [if it gets lost]...I do not plant it again since I lost all the seeds” (Tarpuy, Male Producer Personal Communication, 2019). Most producers, such as Sapi and Tarpuy, however, did not use their personal consumption quinoa seed for replanting and preferred resting land or “use that land for grass to feed the animals” (Tarpuy, Male Producer Personal Communication, 2019).

Overall, many crops spotted in the field were lost or damaged due to a drought and eventually heavy rain. As Pallana said “we have not collected much seeds this year, including quinoa, we lost a lot to downy mildew [from too much humidity] and the drought” (Pallana, Male Producer Personal Communication, 2019). Additionally, the Indigenous poor land conditions also reduced crop yield and diminished overall seed quality. A government representative indicated that since she began working in 2012, crop yield decreased by nearly half in the area (Maria, MAGAP Representative Personal Communication, 2019). In the male focus group, one producer indicated that “from the same piece of land [located] up on the hill I used to get 8 to 10 quintals, but this year I only got 3 quintals” (Male Producers Focus Group, 2018). The poor land conditions diminish both seed quality and quantity but are worsened by the harsh weather conditions, which decreases opportunities for income and quality of life.

Transportation of Fertilizer and Nutrients

Access to fertilizer is important for maintaining soil nutrition and to improve agricultural productivity. The participants' quinoa production is certified organic, which follows specific standards and procedures, including yearly crop rotation and approved organic fertilizers such as biostimulants,¹⁷ manure, and compost. Access to fertilizers for organic production, however, is difficult due to land location. Isolated areas with steep slopes and very few or nonexistent roads prevent the producers from accessing and transporting fertilizer to their land. These conditions limit their agricultural productivity and long-term opportunities for soil health.

The participants' organic agricultural practices existed even before their membership in the quinoa cooperative. As a representative from the coop indicated, the participants' "quinoa production has always been organic, but it is considered conventional until it follows specific certification requirements...[which includes going] through a three-year transition that conveys [the organic certification] norms" (José, Quinoa Organization Representative Personal Communication, 2019). One producer shared that he is "eighty-two years old and has never used [chemicals in his production. After working as a] *huasipunguero* in a big *hacienda*... [he] understood that it was bad for people's health, [that] it is poison... [so he] did not like them, and still [doesn't]" (Kiru, Male Producer Personal Communication, 2019).

Organic practices were observed in all producers through their organic certification and descriptions of chemical free agricultural production since before their membership in the organization. The participants engage in two main organic practices to increase nutrient content in their land. First, crop rotation includes quinoa production with oats and vetch, the last two used for animal grazing. The participants also combined crop rotation with other methods. For

¹⁷ Biostimulants are "diverse substances and microorganisms used to enhance plant growth" often used in organic agriculture (Calvo, Nelson, & Kloepper, 2014).

example, over one-fourth of the participants fallow land, but many chose not to do it as it decreased land for production (Wanu, Male Producer Personal Communication, 2019).

Second, the participants manage and applied manure fertilizer by either leaving animals on the land to eat left-over crops or by collecting the manure from where the animals normally stay at the grazing wet-meadows areas (Male Producers Focus Group, 2018). However, since it was difficult to transport either the manure or the animals to the high-altitude and/or distant locations, many decided not to use it at those unreachable locations (Zampu, Male Producer Personal Communication, 2019). Quinoa production occurred on slopes, but when planted at really high altitudes the producers said it was more difficult “to take [the] manure in bags [with donkeys] or by car... [because they] only use chaquiñán, narrow walking paths, to access the mountain” (Male and Female Producers Focus Group, 2018). Most of the visited crops during the research visits were accessible only by foot, which demonstrated the participants’ limitations for transporting fertilizer. One producer indicated during an interview that she and her family

Only take animals [for manure application] to nearby locations because far-away land lacks water access. If we had water on all pieces of land, the animals would live there...[Also] we cannot [take the animals] when is far away [because] it is difficult for the animals to climb... they get tired and do not want to walk, so we almost never take them [up there].

(Killa, Female Producer Personal Communication, 2019)

While all participants recognized the importance of using fertilizer on their land, because quinoa is produced in slopes, often only accessed by foot, the producers preferred crop rotation for nutrient enhancement. However, as indicated by a government representative

Each year [quinoa] production is decreasing, [because] the soil is losing nutrients ... The producers do not invest on fertilizers... [and so] there is a need for soil conservation

initiatives. Since quinoa is a highly nutritional crop, it absorbs a lot of nutrients from the soil. Exporting quinoa not only means exporting the seeds, but [also exporting nutrients from its] soil. (Maria, MAGAP Representative Personal Communication, 2019)

Generally, the data revealed that all participants worried about insufficient fertilizer usage for maintaining the health of the already poor-quality soil, which made it difficult to achieve long-term agricultural productivity. However, it was difficult to apply and transport fertilizer in the isolated steep slopes and without roads. Overall, the poor land characteristics diminished opportunities for agricultural productivity and overall income further increasing the participants poverty status as Indigenous rural producers.

Use of Machinery and Equipment

Access to machinery can decrease labor and time in agriculture. Machinery was primarily used during the research visits for land preparation, such as fallowing and tilling, and in postharvest activities, such as threshing and polishing. Yet, because many of the producers' land lacked roads in the steep and marginalized locations, machinery access was limited. Thus, the participants' agricultural production was more labor intensive and time consuming.

For example, Pallana compared that for fallowing the workload with “the tractor is one hour, but with the yoke¹⁸ [or by hand] we work all day. It takes more effort” to work without machinery (Pallana, Male Producer Personal Communication, 2019). During postharvest, the quinoa seed is dried with sunlight before and during threshing, and thus, many producers preferred using a threshing machine to avoid working long hours by hand under the often intense sun (Sisa, Female Producer Personal Communication, 2019). Yet, machinery was not always available for threshing, as one producer described

¹⁸ Yoke is a wooden crosspiece fastened over the neck of usually one or two cows and attached to a plow, which is then pull over land before planting.

It is about getting used to [the labor-intensive work]. It is hard [for people who] harvest a lot of quinoa. For us, when machinery does not come [or cannot reach the location], we have to do it by hand. We make a nice pile [of harvested plants] and with a large stick, we beat it. [However] we had issues with rats [since it takes a while to finish it by hand] and they come in quickly. (Yaku, Female Producer Personal Communication, 2019)

Machinery, when available, is extremely helpful for quinoa production activities. Access to machinery goes beyond ownership but it also depends on availability and opportunity to make use of it in agriculture. The use of machinery was previously owned and introduced by the quinoa organization in the community (Male Producers Focus Group, 2018), but according to a key informant, it is no longer in use since it broke (Manuel, Quinoa Organization Representative Personal Communication, 2019).

About ninety percent of the participants rented machinery, including threshers, tractors, and polishers, from nearby communities. Yet, its availability is dependent on the owners' schedules, which often have limited availability during peak seasons. As Urku described "we go ask [or call the owner] to rent us the tractor for the following day or two and, if he has time, he come" (Urku, Male Producer Personal Communication, 2019). Other producers indicated that, because machinery is only available when the owner of the tractor has time, and since he operates the tractor, they take advantage of it when it comes to their area. Pakarina described that she "sometimes waits until [the tractor owner] comes to the community, once he arrives, he works on everyone's land" (Pakarina, Female Producer Personal Communication, 2019). Scarce access to machinery was echoed by the field notes describing participants' requesting to rent machinery once they saw a neighbor renting it. Figure 2.7 for example shows a group of producers pushing a threshing machine from the road to the land, which was fairly close to a

main road and on a flat area, yet it was still difficult to transport it because the land was normally entered by foot.



Figure 2.7. Threshing machine arrival (left) and relocation from the road to destination. Source: Author

Access to machinery was also diminished due to the producers' isolated locations and limited financial resources for purchasing their own machines. Each producer owned multiple pieces of land throughout the community and while not all pieces were on steep slopes without roads for machinery, all participants reported owning at least one piece of land that was unreachable for using machinery. Generally, it is hard to access land without roads, but even harder "to produce in [land that is in] the high zones because there is no access for the tractor" (Male and Female Producers Focus Group, 2018). Overall, even though machinery is a highly valuable component for agriculture, not all producers can actually access and utilize machinery due to the poor transportation routes, steep slopes, and financial costs associated with renting it.

Discussion

The marginalized conditions of Indigenous people in this study are one of the main consequences of colonial legacies in Ecuador, evident by their rural isolation and limiting their access to crucial resources, such as land, water, seeds, fertilizer, and machinery. Colonial

legacies have influenced the location, quality, and size of land to farm, which reduce Indigenous peoples' agricultural opportunities over time. Water access in production came from rain but was often unpredictable due to the high altitudes and steep slopes facing harsh weather conditions. The producers' access to seeds, especially of good quality, was diminished by erosion and nutrient depletion, as well as the severe weather.

Organic production provided the producers with less exposure to chemicals, which was a point of pride for many of the farmers. However, the use of natural fertilizers, such as animal manure, was inadequate due to difficulties in transportation to the high-altitude and steep land in isolated areas. Decreased access to fertilizer in their already poor-quality land contributed to the nutrient loss described and observed in the participants farms. Similarly, access and use of rented machinery was restricted because of the lack of infrastructure, such as roads, which inhibited its transportation and functionality on the steep Andean slopes. Ultimately, the isolated rural locations in Ecuador with severe weather diminish Indigenous producers' access to and use of crucial resources in agriculture, which further increase their vulnerability and poverty status.

Participants' access and ability to use productive resources in agriculture have been highly restricted and impacted by colonial legacies, which have pushed Indigenous groups into isolated rural locations with challenging conditions. Historical marginalization from colonization has shaped and continues to influence social and economic injustices among Indigenous groups. Although *huasipungueros* and *haciendas* were abolished following the agrarian revolution, and Indigenous people could purchase land, it was of poor quality and located in isolated areas (Kay, 2015). Land redistribution reinforced marginalized conditions for Indigenous groups that further isolate and marginalize them in rural areas (Kuokkanen, 2011). These conditions are starkly visible among the Indigenous producers in this study.

This research contributes to the literature by examining Indigenous experiences with marginalization from colonialism through observations, field notes, in-depth interviews, and focus groups. The qualitative approach illuminates the complex realities of Indigenous groups and their limited access to resources in quinoa production. This research also contributes to the literature on colonial and postcolonial Indigenous marginalization (Wolfgang, 2012; Martínez Novo, 2018) by demonstrating how their rural isolation and poor land conditions—legacies of colonization—limit resource access and production capabilities.

Additionally, many studies focused on rural poverty among Indigenous groups often analyze one resource at a time such as water (Hidalgo, Boelens, & Vos, 2017; Hoogesteger, 2012) or land (Gray, 2009; Bretón Solo de Zaldivar, 2013). This research therefore contributes to the literature by examining more than one productive agricultural resource all restricted due to colonial legacies. Finally, while most studies have analyzed quinoa production in Peru or Bolivia, the top exporting nations (Bedoya-perales, Pumi, Mujica, Talamini, & Domingos Padula, 2018; Kerksen, 2015), this study also fills a gap by understanding the importance of access to resources when producing quinoa in Ecuador, the third largest global exporter.

Conclusion

Indigenous marginalization in Ecuador is linked to limited access to productive resources, rural isolation, and harsh weather conditions that diminish their opportunities in agriculture and further increases their vulnerability and poverty status. The participants' vulnerable status is a direct consequence of colonization. This research may inform future policies and programs in Ecuador that consider Indigenous rural marginalization in agricultural development by highlighting Indigenous producers' scarce access to resources. For example, while government investments in quinoa are an income opportunity for Indigenous producers, their lack of basic infrastructure, such as roads, and limited opportunities to crucial agricultural resources, such as

reliable water from irrigation systems, diminishes their productivity levels. Thus, it is important for future programs and policies to be inclusive and to take into consideration the poor conditions faced by Indigenous producers in rural isolation to increase their quality of life.

While this study provides important issues of access to resources, it also has some limitations. First, the exploratory nature of a case study focuses on one community and, thus, this research cannot be generalized to all Indigenous populations in Latin America or Ecuador. Examining other countries and communities in future research can reveal further issues related to access, resources, and production among Indigenous people. Additionally, the length of the data collection occurred over a five-month period, during the producers' harvesting and planting activities. Collecting data over a longer time period in future research can reveal additional influencing characteristics limiting agricultural productivity, such as socioeconomic and marital status, in their isolated rural locations and how they may change over time.

Additionally, future research that includes multiple case studies and considers multiple Indigenous communities over a longer time period in Ecuador and/or other Latin American countries would be valuable in determining commonalities and differences among communities and countries. For example, proximity to the city or land quality might change among communities further influencing agricultural productivity and access to resources. Gathering data on other aspects of production, such as crop management and distribution can illuminate additional challenges among Indigenous producers.

Finally, this research focuses on Indigenous producers in Ecuador, but future research can investigate the potential effects of other characteristics (e.g., gender) to further explain their vulnerable status in agriculture. This research serves as evidence for policy and programs, such as those focused on agricultural growth in rural areas, to diminish the negative consequences of

(post)colonialism that respond to the needs of Indigenous communities, particularly access to roads and irrigation systems in rural isolation.

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CHAPTER 3. INDIGENOUS EMPOWERMENT: THE CASE STUDY OF AN INDIGENOUS COOPERATIVE IN RURAL ECUADOR

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Abstract

Indigenous movements and cooperatives are often rooted in frameworks that promote empowerment through collective work, resource sharing, and solidarity. Research on cooperatives tends to focus on their economic efficiency and productivity, while studies on Indigenous empowerment tend to focus on social movements. This research examines the work of an Indigenous quinoa cooperative to empower its members. The data collection included 43 interviews, three focus groups, observations, and private and public documents by and about the trajectory of the cooperative. The research was guided by two domains from the Women's Empowerment in Agriculture Index (WEAI), resources and production, as well as the concepts of empowerment and access to resources in agriculture. The results show that the cooperative's collaborative Indigenous norms increase the members' access to information, which in turn improve their bargaining power when dealing with intermediaries, as well as material resources for quinoa production. Collaboration and participation are key features of historical Indigenous norms called *minga* and their use within the cooperative system promotes Indigenous empowerment and supports economic opportunities and integration in an open and competitive market.

Introduction

Constructed and reconstructed colonial racist practices in Ecuador have pushed Indigenous people into isolated rural locations with poor land quality and limited access to crucial inputs in agriculture (Kay, 2015). During colonialism Indigenous discrimination included the replacement of Ecuadorian native crops like quinoa for European crops such as wheat (Cade, 1992), which still remain as quinoa is associated with Indigeneity and often equated with poverty (Andrews, 2017). Colonialism also included feudal land tenure or haciendas and indentured labor, but both eliminated postcolonialism in the 1960s (Wasserstrom & Southgate, 2013). The abolition of haciendas resulted in land redistribution for agricultural production, but the land was often of poor quality and in remote and/or hilly locations, perpetuating Indigenous marginalization in the country even after colonial times (Partridge, 2016).

Land redistribution in Ecuador often occurred through imposing a western cooperative system, in order to follow modernization strategies, on Indigenous communities that required registration with the government for them to benefit from owning the land (Andolina, 2012). As a response, Indigenous social movements sought “to increase indigenous control over the cooperatives” leading to state enterprises slowly converting to Indigenous self-managed cooperatives (Goodwin, 2017, p. 26). The cooperatives system often functions through goals of collaboration and participation, where members share costs, resources, and information (Tschopp, Bieri, & Rist, 2018). However, those features are similar to existing historical communal *minga* norms of self-governance and cooperation among Indigenous groups in Ecuador (Faas, 2015).

In Kichwa, *minga* refers to ‘collective work in communitarian support’ and has Indigenous symbolism reflecting identity, solidarity, and ethnicity (Lalander, 2010). A collaborative culture has provided Indigenous groups with opportunities to fight against

discrimination through their social movements (Becker, 2011). Research on Indigenous empowerment often focuses on social movements, and often overlooks the role of Indigenous cooperatives for empowerment (Korovkin, 2001; Lalander, 2010; Becker, 2011). This research project addresses a gap in the literature by asking how the cooperative empowers its Indigenous members to overcome Indigenous marginalization.

The Indigenous quinoa cooperative in this study developed partly as a response to their poor treatment in rural Ecuador. The cooperative evolved from being under the umbrella of the Catholic church into operating independently for and by Indigenous people. The *minga* norms of self-organization and collaboration promote self-empowerment, are at the core of Indigenous culture in families and their community, and, thus, deeply embedded in this study's cooperative. Rural isolation prevents Indigenous people from accessing crucial market information (e.g. product requirements and price changes) because it is often at distant locations, which requires costly travel.

Furthermore, external information is often provided in Spanish, instead of their Indigenous native language of Kichwa. Thus, to overcome such marginalization, the cooperative sends paid bilingual representatives to training sessions who then share the information in Kichwa with their home community or in the cooperative via meetings and workshops. The cooperative also assists the members in all stages of quinoa production and gives a reliable place and price to sell their crop. Finally, the cooperative provides access to small tools and cover crop seeds to increase crop diversification and nutrient content in the poor land conditions.

Due to low staff, the cooperative provides limited assistance to members which caused tensions in leadership regarding staff management and services. Nonetheless, the cooperative helps its members overcome rural isolation by increasing access to agricultural resources and

information to compete in an open market. Access to this information is empowering because it increases the members' bargaining power against market intermediaries. Overall, while cooperatives are often studied as forced structures on to Indigenous groups (Goodwin, 2017), this cooperative relies on Indigenous norms that precede the cooperatives system to empower and improve the quality of life of its members.

Following the introduction, this paper reviews the literature on cooperatives and Indigenous self-empowerment, then it presents the conceptual framework on agricultural empowerment and access to resources. The research methodology includes a description of the study area in the province of Chimborazo, which has the highest Indigenous concentration in Ecuador, followed by the cooperative's background and how it emerged and evolved in the study area, as well as strategies for data collection and analysis. Then, the paper includes the research findings on the role of the cooperative as a reliable place to sale quinoa and providing access to otherwise unreachable resources such as agricultural information, small tools, and vetch seeds for crop rotation. Finally, the paper ends with a discussion and conclusion about how the cooperative, while facing tensions among its leaders on how to best aid its members due to limited staff, was helpful at empowering its members by decreasing their vulnerabilities in rural isolation.

Cooperatives and Indigenous Empowerment in Latin America and Ecuador

Smallholder agricultural producers in Latin America often face difficulties in a global and competitive economy (Tschopp, Bieri, & Rist, 2018). However, Indigenous groups face additional burdens as a result of colonial practices that forced them to live in remote rural areas with poor agricultural conditions. A governmental alternative in Ecuador to assist such populations since the 1960s are cooperatives as they allow members to pool resources, share processing costs, and increase their bargaining power for market prices (Borda-Rodriguez,

Johnson, Shaw, & Vicari, 2016). The following section examines the history of cooperatives as well as Indigenous organization and self-empowerment in Latin America and Ecuador.

History of Cooperatives in Latin America

According to the International Co-operative Alliance, a cooperative is an “autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (International Co-operative Alliance, 2020). Cooperatives vary based on membership size and the sector (e.g., housing, financial, agriculture) and groups served, such as producers, consumers, and/or workers (Borda-Rodriguez, Johnson, Shaw, & Vicari, 2016). Cooperatives connect members, often financially, socially, and environmentally, to allow their product and services adapt to the market (Tschopp, Bieri, & Rist, 2018).

Cooperatives in Latin America were first introduced in the twentieth century by European immigrants as a way to maintain their own forms of social and economic structures and to detach from local populations and governments (Vásquez-León, 2010). The cooperative system became widely popular after World War II due to concerns with inequality that promoted top-down structures. During this time, cooperatives largely focused on agriculture in rural areas by having groups pool resources, costs, and labor (Vásquez-Léon, Burke, & Finan, 2017). Agricultural cooperatives were frequently funded through the state and their role was to empower the poorest and most vulnerable groups in society. However, the cooperative system was “imposed from above as a paternalistic and authoritarian act; it was not the result of popular conviction based on democratic participation or popular enlightenment” (Fals Borda, 1971, p. 12). Thus, while cooperatives protected some small-scale farmers from exploitation by merchants and middlemen, the systems were imposed on them and the government did not protect all farmers (Huizer, 1983).

During the agrarian reform of the 1960s, governments in Latin America abolished colonial land tenure systems to replace them with modern enterprises or cooperatives to improve the conditions of small-scale farmers (Blankstein & Zuvekas, 1973). The new system included opportunities for land ownership, the establishment of minimum wages, and the provision of governmental agricultural services. The 1960s also included socialist cooperative structures, parallel to state intervention, often guided by the Catholic church. The socialist cooperatives were an alternative avenue to the improvement of the rural poor through collective action, political conscientization, and shared agricultural production (Burke & Piekielek, 2011).

By the 1970s, however, the new cooperative movement was criticized due to the lack of delivered promises and social transformation. For example, land redistribution in Ecuador often led to little improvement for producers because much of the fertile land in haciendas was not allocated to small-scale producer cooperatives. Instead, the acquired land was of poor quality and small in size often ill-suited to agriculture (Blankstein & Zuvekas, 1973). State-led cooperatives transformed and became integrated into the dominant capitalist system and the socialist ones often became vehicles for the transmission of state policy (Vásquez-León, 2010).

In Ecuador, during the mid-1980s, the government went through a structural political adjustment of neoliberalism that significantly impacted cooperatives (Burke & Piekielek, 2011). Neoliberalism in the global south and in Ecuador meant less government interventions, the privatization of productive and financial programs, application of free trade, and the removal of state subsidies and market protections. Cooperatives became exposed to increased private and international competition, which resulted in market-oriented practices that often decreased or eliminated social programs (Vásquez-León, 2010). During this time, many cooperatives were forced to close, the state-led ones due to the decreased of financial support from the government

and the grass-root cooperatives due to difficulties with market competition (Vásquez-León, Burke, & Finan, 2017).

Despite criticisms of cooperatives' inability to deliver promises of social transformation, scholars, development practitioners, and governments still value cooperatives. Cooperatives provide integration of small-scale farmers into global markets. For example, starting in the 1990s many cooperatives created alternative strategies and marketing opportunities to increase competition, such as value-added commodities and certifications (e.g., Fair Trade). The separation from the state provided an opportunity for autonomy and encouraged cooperatives to focus on reform, social, and structural changes (Vásquez-León, 2010). Overall, cooperatives often promote independence, democratic governance, sustainable income generation, and commitment to their members' well-being (MacPherson, 2002). Thus, they can be empowering vehicles to members to act on their own and achieve self-defined goals (Bacon, 2010).

Indigenous Self-Empowerment in Ecuador

Cooperatives are often described as strategies to reduce poverty, especially in developing countries (King, Adler, & Grievies, 2013). However, debates on if and how cooperatives empower marginalized Indigenous producers to become self-governing participants in global markets needs further examination (Vásquez-León, 2010). More specifically, while cooperatives often emerged as imposed Eurocentric structures of collaboration and participation, Indigenous groups already possessed their own collective culture and organizational structures relevant to their empowerment in cooperatives. Empowerment is defined here as the expansion of peoples' opportunities to make life choices that align with their goals, especially when that ability was denied to them (Kabeer, 1999).

Studies focused on empowerment in agriculture often analyze people's access to productive resources that positively impact people's opportunities within their communities in

agriculture (Kabeer, 2016). Thus, access can be defined as the opportunity for people to make use of available agricultural resources beyond ownership given their local norms and rules (Kabeer, 2005). Accessed agricultural resources include material inputs, such as land, seeds, water, machinery, and fertilizer. However, it also includes non-material resources such as information as well as human and social components from their family, community, and in organizations (Kabeer, 1999).

Cooperatives provide an opportunity for vulnerable groups from around the globe to overcome issues in an open and competitive market through collaboration and self-organization. A culture of collaboration and democratic governance has been part of Indigenous groups in Ecuador since before colonization (Becker, 2011). For example, *comunas* are democratic community structures of ethnic territorial occupation that were not legally recognized until the agrarian reform (Sanchez Parga, 2010). A characteristic of Indigenous families and communities or *comunas* is *minga*, norms of collaborative labor and participation that strengthen family and social ties (Erazo, 2010). Indigenous *minga* and their “historical capacities for cooperation...have played noteworthy roles in political mobilization and social movements” (Faas, 2015, p. 53). A desire for participatory relationships and collaborative work are at the core of the Indigenous culture, often manifested in their social movements which increased their voice and inclusion politically, socially, and economically. An important contribution of such movements was in the updated Ecuadorian Constitution in 2008 to include food sovereignty to support small-scale diverse production that is healthy, sustainable, and culturally appropriate for Indigenous groups in an open market as well as plurinationalism (Giunta, 2014; Parraguez-Vergara, et al., 2018).

Indigenous social movements draw on “identity claims to unify people, and such claims frequently circle back to community” (Colloredo-Mansfeld, 2007, p. 94). The Indigenous *minga* culture aligns with the structures and goals of cooperatives, which often emphasize participatory collaboration to promote the quality of life of the group (Vásquez-León, 2010). For example, Erazo’s (2010) research in the Ecuadorean Amazon describe how Indigenous leaders use collective engagement as an economic strategy in an open market. The author indicated that Indigenous leaders “repeatedly justified the importance of community-based development through [Indigenous] identity-based reasoning” (Erazo, 2010, p. 1018). Working collectively towards shared goals and having a strong Indigenous cooperative was perceived by the participants as empowering. According to Colloredo-Mansfeld (2007), Indigenous structures of collaboration “operate in parallel or even at odds with the national movement...[They] maintained the power of communities locally and escalated their authority nationally...[by] mobilizing people and resources” (p. 103).

The collaborative structures of cooperatives allow smallholders to anticipate, plan, and strengthen their position and adaptability in open and competitive market (Valdivia, et al., 2010). Collaboration and self-organization, while similar characteristics of cooperatives, precede the cooperative system and are deeply embedded within the Indigenous culture of Ecuador. Thus, the influence of Indigenous norms on Indigenous cooperatives deserves further analysis, particularly as relates to empowerment, which is a primary aim of this study. Next, the research methodology is explained including the participants, study area, the cooperative’ background, as well as the data collection and analysis.

Methodology

This qualitative case study focuses on a single cooperative to provide an in-depth exploration of its work and assistance to Indigenous people through their production of quinoa. The following section explains the methods for data collection and data analysis.

Data Collection

This research used four data collection methods: face-to-face interviews, focus groups, observations, and document content analysis. Data collected was guided by two domains, *production* and *resources*, from the Women's Empowerment in Agriculture Index (WEAI) as well as the concepts of access and empowerment. The two domains were selected because *access to resources* in agricultural *production* is often limited by the participating Indigenous people in their isolated rural locations due to discriminatory legacies of colonization. The interviews and focus groups were guided by a modified qualitative questionnaire by Akter et al. (2017) who utilized the two domains, production and resources, and the concept of access to analyze empowerment. Some of the questions that guided this research included "Which resources do you own? And which do you rent?" to determine the participants access to resources.

Three focus group sessions were conducted, each lasting about 120 minutes. The focus groups illuminated the underlying research issues through participants reflecting on their individual circumstances, attitudes, beliefs, and behaviors related to their agricultural production and interaction in the cooperative (Ritchie & Lewis, 2014). Each session included six to ten participants (totaling 26). One focus group consisted of only men, one with only women, and one with both men and women. The participants were recruited using purposeful sampling (Ritchie & Lewis, 2014) with a criteria focused on Indigenous men and women, from the selected community, who produce quinoa, and are members of the cooperative.

43 semi-structured face-to-face interviews were conducted with Indigenous producers and key informants in the cooperative, who consisted of officers in public and private organizations working in or with the cooperative. The interviews aimed to “understand the meanings and interpretations of the lives of individual persons...[which] come to life when there are people to explain, to comment, and to elaborate them” (Liamputtong, 2010, p. 162). Some of the questions asked during the focus groups and individual interviews included: Why did you join the cooperative? Can you describe what your experiences have been like since you joined the cooperative? And How has your relationship with the cooperative served your goals as a quinoa producer?

The producer participants were recruited from the focus group sessions and included 14 women and 11 men. The 18 key informants were recruited using snowball sampling (Ritchie & Lewis, 2014) which means they were selected based on recommendations from the cooperative and then from the interviewed key informants. Each interview lasted about 90 minutes and were conducted and recorded in Spanish, at the participants’ chosen time and location. The recordings were then transcribed and coded in Spanish and translated into English for further analysis. All participants were assigned a pseudonym to protect their identity, which included Kichwa names to represent the Indigenous culture.

Field observations focused on the participants’ agricultural activities such as in their harvest, postharvest, and during community and cooperative meetings. The observational data during the field visits provided further evidence on the participants’ experiences with the cooperative, such as how they receive assistance or resources during the meetings or trainings. Finally, private documents were collected from and about the cooperative, which included reports on each member from the selected community that described their farm and production

characteristics (e.g., harvest, rain, and planting dates). Public online documents, such as reports and news articles, were also included from newspapers and government pages from MAG and INIAP. The public documents focused on the cooperative's trajectory since the 2000s when it was founded and about the members' study area and population. All data was collected during fieldwork in the Chimborazo province in Ecuador from September 2018 to January 2019 during the quinoa harvest, postharvest, land preparation, and planting seasons. Overall, the data provided rich descriptions about the role of the cooperative in access to agricultural resources for Indigenous quinoa producers in rural Ecuador.

Data Analysis

The research analysis was inductive and focused on emerging patterns and themes resulting from multiple readings and interpretations of the raw data to answer the research questions (Akter, et al., 2017). The qualitative methodology was guided by a questionnaire developed by Akter et al., which uses concepts of the WEAI's such as empowerment and access by analyzing two domains, *production* and *resources*. The qualitative data was analyzed using NVivo software, which included coding phrases related to the research concepts and grouping them into themes to understand the cooperative's work with empowerment.

The data analysis included three stages and was guided by Ritchie and Lewis' (2014) recommendations for qualitative analysis. First, phrases were identified in the interview and observational data that relate to access to productive resources through the help of the cooperative when producing quinoa. For example, the code "access" was given when producers and key informants indicated that the cooperative provides cover crop seeds. Second, the codes were divided into themes of information and material resources to identify differences between them. The designations included seeds as material resources and workshops as information. Third, once codes and themes were created, a deeper analysis uncovered processes of access to

resources. Thus, since the cooperative gave seeds, a description on how the seeds were acquired, why such access was granted, and opportunities for empowerment were provided.

Finally, the researcher engaged in data triangulation by combining and comparing multiple data collection methods to increase data richness and to support the findings (Golafshani, 2003). Once a code or theme was identified during the interviews with producers, it was also identified and supported by the key informants, focus groups, observations, and documents. Content analysis of private and public reports helped to understand what organizations participated in the construction and funding of the processing plant, which in turn helped find new key informants. All data collection methods provided evidence to illustrate the cooperative's processes at alleviating marginalization of Indigenous people through quinoa production, which was empowering to its members.

Case Study Background

The background of the research is described in the following section which includes a brief explanation of the study area, the participants, and the cooperative's trajectory.

Participants and Study Area

Ecuador (Figure 3.1) is the third top largest exporter of quinoa globally, after Peru and Bolivia (Kerssen, 2015; Walsh-Dilley, 2013; Bedoya-perales, Pumi, Mujica, Talamini, & Domingos Padula, 2018). The men and women participants are rural Indigenous quinoa producers, members of an Indigenous cooperative, and who reside in a community in the Chimborazo province. The participants came from diverse socioeconomic characteristics including marital status (e.g., single, married, and widowed), education (no education, some elementary, and two with college degree), and asset ownership (pieces of land and of different sizes).

The study province of Chimborazo (Figure 3.2) has the highest quinoa production and highest Indigenous concentration in Ecuador, which makes it an ideal location for the case study (INEC, 2010; MAGAP, 2013). Rural locations in Chimborazo are characterized by high poverty rates, 42 percent, compared to 24 percent nationally (INEC, 2018). Agriculture is one important source of income among the participants and employs about 53 percent of rural families, consisting mostly of small-scale Indigenous farmers (INEC, 2019). However, agricultural production is difficult as most Indigenous farmers live in isolated high-altitude locations with poor land quality and scarce access to agricultural resources. Furthermore, due to farm locations in steep slopes and in high elevations (12,000+ feet), most crops face harsh weather conditions that inhibit production (Carlos, Canton Government Representative Personal Communication, 2019).



Figure 3.1. Map of South America, Ecuador in red.
Source: Modified from Ezilon



Figure 3.2. Map of Ecuador, Chimborazo in red.
Source: Ezilon

Quinoa is an ancient Indigenous crop that grows naturally in these harsh conditions. The crop is historically consumed and produced by smallholder Indigenous rural producers.

However, after colonization, Ecuador's agricultural practices changed with increased production of European crops such as wheat and the marginalization of Indigenous crops like quinoa (Cade, 1992). The crop's marginalization resulted in labeling it as an "Indian" crop and often equating it with poverty (Andrews, 2017). Paradoxically, due to quinoa's high nutrient content, its global demand has increased in recent last decades, especially by rich and health conscious consumers from the United States, Japan, and in Europe (FAO, 2015).

The quinoa crop made a particularly strong comeback when the United Nations declared 2013 as the International Year of Quinoa (MAGAP, 2013). In recent years, Andean nations have used quinoa production as a strategy for rural economic development. By 2016, however, the quinoa boom flattened (Figure 3.3), resulting in less exports and diminished opportunities for many small-scale producers. However, the Indigenous cooperative survived the 2016 downturn in part for its' collaborative nature and advantageous market certifications such as Fair Trade and Organic. Thus, quinoa production it is still important among the participating Indigenous producers as it is among the primary income generating crop that grows in their isolated and harsh environments.

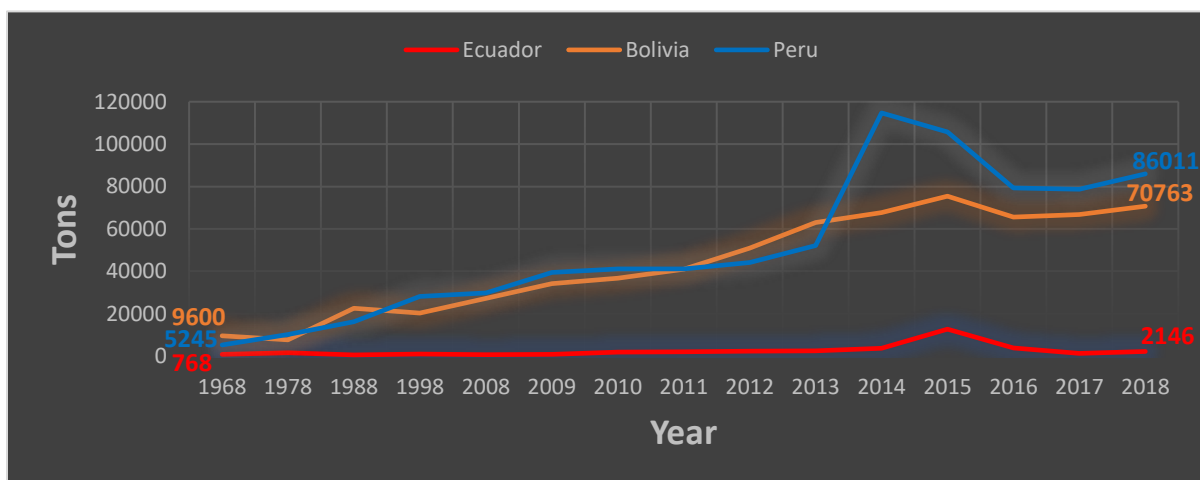


Figure 3.3. Quinoa production (tons/year) from 1968 to 2018 of Ecuador, Bolivia, and Peru.
Data Source: FAOSTAT

The Indigenous Cooperative

The cooperative originally formed as part of a nonprofit associated with the Catholic church in Chimborazo (Pedro, Quinoa Organization Representative Personal Communication, 2019). Its central goal is to provide Indigenous assistance by increasing access to agricultural information, technical assistance (e.g., crop management), and rotation-crop seeds (e.g., vetch). Membership to the cooperative provides an important opportunity for Indigenous members to access to valuable knowledge and resources while having a reliable market for their quinoa sales.

The trajectory of the cooperative includes being part of a nonprofit associated with a social movement focused on assisting vulnerable Indigenous rural groups (Maria, MAGAP Representative Personal Communication, 2019). According to newspaper articles, the nonprofit's early focus in the 1960s was on Indigenous literacy, but by the 1990s its emphasis shifted to Indigenous economic well-being through the production and sales of quinoa. However, when the Indigenous producers wanted inclusion in leadership and managerial roles within the nonprofit by the early 2000s, they were denied. Pedro indicated that the nonprofit representatives responded as “no, we manage it, we know how to do it’...so we as an [Indigenous] group only joined as simple suppliers...Legally, the benefits were only for the managers” (Pedro, Quinoa Organization Representative Personal Communication, 2019). Furthermore, Angel explained that the nonprofit leadership “did not believe that we as Indigenous people could form a group and manage it because we are Indigenous” (Angel, Quinoa Organization Representative Personal Communication, 2019).

In response to the poor treatment by the nonprofit, many Indigenous producers separated from it in the late 2000s as their own Indigenous cooperative. The separation allowed the Indigenous producers to self-empower by having greater control and participation in their quinoa production and sale activities. The separation meant starting from zero, but it also meant an

Indigenous front for sharing resources, participation, and decisions (Jorge, Quinoa Organization Representative Personal Communication, 2019). The members, as one producer said, “want to demonstrate nationally and internationally that the Indigenous community in Ecuador can form microbusinesses [as a strategy] to survive... through [quinoa,] a nutritional and healthy product” (Male Producers Focus Group, 2018).

The cooperative now operates independently and continues to grow through their own organizational and collaborative strategies, evident in their private reports showing an increase in land use for quinoa production by producers over time (Indigenous Quinoa Cooperative, 2017). Its structure includes Indigenous smallholder members, an elected committee, and hired employees (Angel, Quinoa Organization Representative Personal Communication, 2019). The committee is democratically elected by all members every three years and who demonstrate a crucial aspect of *minga* norms as they often work towards finding and collecting new resources such as information, further explained in the findings section.

While the cooperative provides a variety of benefits, tensions were observed among the members on how much assistance was provided to producers. Juan, a formal leader, stated that “the benefit is not arriving to all producers, the administration is not paying attention to all members; who is not getting assistance, or who needs extra help” (Pedro, Quinoa Organization Representative Personal Communication, 2019). Yet, because of limited field technicians, the cooperative only gives additional assistance by request (Manuel, Quinoa Organization Representative Personal Communication, 2019). The administrative tensions are a work in progress, and there is room for improvement in the existing structures and assistance mechanisms, such as better communication of what is expected from the cooperative and increased understandings of what the members need.

The cooperative focuses on local production and internationally sales of quinoa as it has high value globally (Juan, Quinoa Organization Representative Personal Communication, 2019). Quinoa production has been part of the participants' subsistence Indigenous production for many generations. As Kamay stated "my grandparents used to plant [quinoa] jointly with wheat. They used to sell wheat and not quinoa as it was only for our own consumption" (Kamay, Female Producer Personal Communication, 2019). Quinoa sales began for most members when they joined the nonprofit group, a practice they continued in their own cooperative. One male producer described that,

[Quinoa sales started when] someone in the community planted quinoa in a corner lot, so people from the [church nonprofit group] arrived and asked him if he wanted to plant more for sales... It was four of us that year and then other farmers joined in the following years. (Male and Female Producers Focus Group, 2018)

Once the group separated from the nonprofit, the members no longer had access to a processing plant to clean and package quinoa and so they contracted those services (Alma, Female Producer Personal Communication, 2019). The cooperative began to grow and "started to collect money, little by little, to buy land" including through member dues and quinoa sales (Pallana, Male Producer Personal Communication, 2019). Newspaper articles show that once the cooperative purchased the land, it found investors such as the local government to construct their own processing plant, which was not an easy process. Juan also stated

Even though we are Indigenous people using a poncho¹⁹ we have to fight to overcome [marginalization]. I thank the communities, the members, for trusting in us [board members]. We used to come out to find help from national and local authorities. We let

¹⁹ Poncho is a piece of Indigenous clothing often used by men (see chapter 1, figure 1.2).

them know about our problems [as Indigenous rural producers] and thanks to God, during that time the government helped us out. Now we have our own processing plant to export [quinoa]. (Juan, Quinoa Organization Representative Personal Communication, 2019)

Juan's statement illustrates their struggles and marginalization as Indigenous people and the importance of them working together as a cooperative. As Tarpuy stated, "the cooperative means strength as a group...[when requesting assistance from] the authorities...If one goes alone, nothing gets done" (Tarpuy, Male Producer Personal Communication, 2019). The cooperative's collaborative strategies serve a purpose and help them find and manage resources crucial for quinoa production and sales. Additionally, the Fair Trade and Organic certifications benefit its members by accessing niche international markets to deal directly with buyers (Miguel, Organic Certification Representative Personal Communication, 2019; Rosa, Fair Trade Organization Representative Personal Communication, 2019). Ultimately, the cooperative's Indigenous-only focus empowers the members to self-govern and participate, which was previously denied to them.

Findings

This section explores the findings on how the cooperative empowers its Indigenous members by overcoming Indigenous marginalization. First *minga* norms are explained as an Indigenous cultural approach to overcome rural isolation. Then, the findings are divided in two subsections based on the cooperative's assistance to members: access to information and access to material resources. The research analysis was guided by two WEAI domains, production and resources, and its concepts of empowerment and access to productive resources in agriculture.

Indigenous *Minga* Norms

The cooperative in this study focuses on Indigenous identity by producing quinoa, an ancient crop that grows naturally in the members' harsh Andean environments. In order to

understand the participants and how they engage with the cooperative, it's important to understand their *minga* norms. *Minga* is a cultural Indigenous approach to organization and collaboration consisting of working together to improve their lives as a community, which was first evident among the participants outside the cooperative in their family work and community meetings. *Mingas* are at the core of family dynamics, where family members ask and rely on other members to accomplish labor-intensive tasks, such as planting and harvesting. It is also present at the community level and evident during the field visits where the participants engage in meetings to plan, collaborate, and work together to clean the road and fix water pipes. These norms are related to family and communal efforts within Indigenous groups, which at the community level are often led by an elected committee. A representative from each family in the community is expected to volunteer time, labor, and at some point engage in a leadership position (Anon, Community Leader, Personal Communication, 2019). During the observed community meetings, many members participated and engaged in conversations to plan the work, but most speakers were men. Communal leadership includes men and women, yet gender hierarchies exist as men are often heads of the household and final decision makers.

Minga norms of collaboration, while similar to cooperative structures (International Co-operative Alliance, 2020), represent ethnic identity among families and in the community and precede the participants' membership in the cooperative. Like at the community level, all the cooperative members elect a committee, often every three years, through democratic election to select volunteers to be president, vice-president, treasurer, or secretary. Furthermore, a central purpose of *minga* norms is Indigenous self-empowerment. According to Jorge, working as a team was crucial for the Indigenous survival and improvement of rural opportunities. He stated that "it is fundamental to have collaborative efforts, working together...together is strength"

(Jorge, Quinoa Organization Representative Personal Communication, 2019). The culture of *minga* permeates the cooperative's efforts to overcome Indigenous rural isolation, represent Indigenous efforts, and embody a way of living and working together for self-empowerment. Through the understanding of *minga* norms, two key approaches are provided that the cooperative utilizes to empower its members: increasing access to information about the quinoa market and production as well as improving access to material agricultural resources.

Access to Information

In Ecuador, Indigenous people's rural isolation, low education levels, and language barriers prevent smallholder producers from accessing new information that is crucial for their production and market opportunities. Below the cooperative's use of *minga* norms as a strategy to find and distribute agricultural information are presented.

Overcoming Rural Isolation

Indigenous marginalization is evident by the participants' rural isolation, a consequence from colonial feudal land tenure systems or *haciendas*. Zampu explained that “during the colonial *haciendas* [system], landlords owned the land and we [Indigenous people] worked for them. They believed we had to stay in the countryside, working and serving them” (Zampu, Male Producer Personal Communication, 2019). Land was redistributed and purchased by Indigenous people during the agrarian reform in the 1960s, but even then, the land was often in remote locations and “not good for agriculture because it was swampy” (Zampu, Male Producer Personal Communication, 2019). Their isolated rural locations negatively impact the participant's access to agricultural information.

For example, while organizations such as MAG and ESPOCH²⁰ provided lectures, presentations, and workshops with agricultural experts about the quinoa market and production, they were offered in Riobamba, almost two hours away from the participants' rural communities. Location was a barrier to accessing information, due to time and monetary costs associated with going to the city (Pakarina, Female Producer Personal Communication, 2019). Thus, the Indigenous cooperative self-organized to cover the per diem costs of two representatives from the elected committee and who later shared such information during internal workshops and meetings with all members.

The cooperative ensures information is delivered by having “the [community] leaders and the team of technicians go to each community to present a small summary about the new information” (Ana, NGO Representative Personal Communication, 2019). During the visits, the field technicians also provided guidance with certification requirements and personalized assistance, often requested by producers in each community. José described:

the field technicians...visit different communities every day...to [deliver information on how to] create and apply organic fertilizers. [They also give guidance] once the plant is germinated on pests and plant health control and, during harvest, guide on the best time to harvest and [strategies for seed] storage. (José, Quinoa Organization Representative Personal Communication, 2019)

The committee holds a valuable position in the cooperative as they plan meetings to share market information. However, according to some participants, the board members face gender biases because men often held higher positions than women (Yaku, Female Producer Personal Communication, 2019; Alma, Female Producer Personal Communication, 2019). Gender biases

²⁰ Escuela Superior Politécnica de Chimborazo – Higher Polytechnic School of Chimborazo

are problematic, not only for unequal opportunities to women, but even more so because women represent the majority of producers in the cooperative due to male off farm employment (Cárdenas Oleas, 2020). Such gender biases can prevent equal input and application of goals by all members, and thus, is an area for improvement in the cooperative.

Overall, participatory collaboration is evident in the cooperative's strategies to organize, plan, and accomplish goals related to accessing otherwise unreachable information. Sending representatives with per diem assistance was particularly essential to afford travel. The acquisition and dissemination of new information was empowering to understand, prepare, and respond to agricultural opportunities and ever-changing market trends.

Overcoming Educational and Language Barriers

The *hacienda* system prevented Indigenous people from acquiring education and limited their proficiency in Spanish. As Samana described:

[*Hacienda* landlords] did not like to listen or have us talk in Spanish. They did not allow it so we could not organize against them. They did not allow us to go to school and only wanted us to work for them. They said, 'if Indigenous people learn [Spanish and go to school] they will fight back.' (Samana, Male Producer Personal Communication, 2019)

The lack of formal education and limited Spanish proficiency as Indigenous people is still problematic, especially when dealing in the market as smallholders. For example, when selling their crops, "if the intermediaries pay in change, since the elder do not know how to count..., [and do not speak Spanish well, they] simply say 'it must be the complete amount.' The truth is, the intermediaries do not give the complete amount" (Zampu, Male Producer Personal Communication, 2019).

Thus, to overcome such barriers, the cooperative focuses on having formally educated bilingual members to work directly with national and international buyers. Additionally, the

cooperative distributes market and production information in Kichwa, their primary language. Manuel described that “if a producer does not know how to read and write...each community has a leader representative. He [or she] conveys that [missing or new] information” to them (Manuel, Quinoa Organization Representative Personal Communication, 2019). When all members have access to the new and valuable agricultural techniques and market information in their primary language, they can improve production levels and quality (José, Quinoa Organization Representative Personal Communication, 2019).

The cooperative’s strategy to distribute agricultural information in their own Kichwa language regardless of their educational level strengthens Indigenous inclusion in the market. The cooperative’s members felt protected against intermediaries as they had better understandings about the market, which in turn improved their bargaining power. As one producer stated:

Here [in the cooperative] we don’t get issues with intermediaries; we can demand together as a group for better prices, unlike the [city] market where [intermediaries] pay you whatever they want [as an individual producer]. The organization does not allow that, which is good. (Female Producers Focus Group, 2018)

The cooperative also teaches members about field diaries to improve their agricultural strategies while taking into consideration language and education barriers. Field diaries track the members’ production activities, input use and costs, and the resources needed in their production (Indigenous Quinoa Cooperative, 2017). For example, a field diary may indicate “how much fertilizer and seed were used, when they planted, hilled, and weeded, how many quintals²¹ came out, [and] how many laborers were hired” (Angel, Quinoa Organization Representative Personal

²¹ Quintal = 100 pounds

Communication, 2019). As Asina stated, “we have all planned in our field diary, [particularly for documenting] when is good production and when frost comes” (Asina, Female Producer Personal Communication, 2019). Manuel indicated that when producers “do not know how to write, they have it [production activities, such as dates and amounts] in their head, [and as a field technician] I go and help them update their field diaries for them” (Manuel, Quinoa Organization Representative Personal Communication, 2019).

The field diary is a long-term empowerment strategy encouraged by the cooperative and part of their *minga* norm of collaboration and participation for the producers to plan, decide, and act on their production strategies. Also, the field diary increases understandings on the costs associated with production when selling their crops, which helps producers and the cooperative plan and make decisions when engaging in the market (José, Quinoa Organization Representative Personal Communication, 2019). Overall, distributing information in their native language and providing guidance for creating field diaries were empowering because producers are more informed about and can compete in the market.

Access to Material Resources

Isolation not only limits Indigenous smallholders access to information but also their access to material resources including land, machinery, fertilizer, seeds, and water (Luis, INIAP Representative Personal Communication, 2019). Additionally, because Indigenous rural land is often on slopes and high-unreachable locations, it lacks basic infrastructure such as irrigation systems and roads which inhibit the use of machinery and leads to more labor-intensive agriculture (Anon, Community Leader, Personal Communication, 2019). The cooperative recognizes this and provides its members with small hand-tools, including hoes and sickles (Angel, Quinoa Organization Representative Personal Communication, 2019). The cooperative also provides vetch seeds to use for crop rotation to help with production diversification and

improvement of soil health (Indigenous Economies, Theories of Subsistence, and Women, 2011).

The cooperative provides small hand-tools because “it is difficult [for producers] to bring machinery [to their land] since they [machinery owners] do not come when land is high on the hill...When machinery is not available...[production is accomplished] by hand” (Yaku, Female Producer Personal Communication, 2019). Labor requirements are more intensive for quinoa production than some other products because “wheat and barley [only require] harvesting, threshing, and then they are ready. [For quinoa, however,] we need to harvest, thresh, grind, and polish it. If we do not send it [to the processing plant] clean, the price is discounted” (Sara, Female Producer Personal Communication, 2019). Some of the tools provided by the cooperative include hoes, sickles, rope, storage bags, and fabric (Figure 3.4) to protect quinoa while cleaning it on the floor (Angel, Quinoa Organization Representative Personal Communication, 2019).



Figure 3.4. Quinoa cleaning on fabric. Source: Author

Access to small tools supports production, diminishes tool purchasing costs, and allows the hire of additional labor who can use those tools to increase production (Juan, Quinoa Organization Representative Personal Communication, 2019). A cooperative representative explained that,

the members are not alone, the cooperative attends to them in all the processes [of quinoa production]. Any necessity that they have they can ask for it and if they need an agricultural input or anything, we can manage it with the organization [to provide it].

(Jorge, Quinoa Organization Representative Personal Communication, 2019)

Soil nutrition is another important aspect of production and is crucial to improve the poor land conditions and increase agricultural productivity. A previous study on the producers' land and weather conditions was completed through the cooperative's partnership with an NGO focused on sustainable agriculture (Ramón, Sustainable Agriculture NGO Representative Personal Communication, 2019). The analysis illustrated a need to increase nitrogen in the soil given high depletion rates including from quinoa production. Thus, the cooperative acquires and distributes vetch seeds to use as nitrogen inducing cover crop and to diversify production through crop rotation (Luis, INIAP Representative Personal Communication, 2019). During public trainings on quinoa production by MAG during the field trip, vetch seeds were distributed to rural communities only to organized groups, which shows the importance of membership to the cooperative to acquire external resources (Indigenous Quinoa Cooperative, 2017).

While visiting during meetings in the processing plant, each member received vetch seeds, which according to Samana, were also distributed the prior year (Samana, Male Producer Personal Communication, 2019). Based on the cooperative's field diary documents and a key informant, vetch is often combined with oats to rotate planting with quinoa and used for animal

grazing (José, Quinoa Organization Representative Personal Communication, 2019; Indigenous Quinoa Cooperative, 2017). Charinayay described that she “plant[s] vetch with oats as animal pasture and so the animals [eat it and also] fertilize the same spot with their manure” (Charinayay, Female Producer Personal Communication, 2019). The producers’ access to vetch as cover crop, combined with manure fertilizer from their animals in their land, improves soil health and enhances agricultural production.

Access to resources such as quinoa seeds and water are not provided by the cooperative because the producers save their own seeds and rely on rain. During the field observations, the producers selected seeds from the heaviest and biggest quinoa stalks for planting the next year. Then the seeds were carefully extracted by hand because the thresher often halts germination (Juan, Quinoa Organization Representative Personal Communication, 2019). Saving their own quinoa seeds is a common procedure by Indigenous farmers, which means they do not depend on seed dealers, but not using the threshing machine is a strategy shared during the cooperative’s trainings (Anon, Community Leader, Personal Communication, 2019).

Overall, the cooperative’s assistance with small tools helps the participants diminish long-term tool purchasing costs and increase opportunities for production by employing workers who can use the additional tools. This is important because quinoa production is labor intensive and mostly accomplished by hand. Furthermore, the cooperative’s provision of vetch seeds is valuable because it is a long-term strategy for soil health in the Indigenous isolated rural locations. Ultimately, the material resources the cooperative provides to its members strengthens their quinoa production and with that their opportunities for income and improved quality of life.

Discussion

This study analyzes the work of a cooperative that is operated by and for Indigenous people to empower its members by diminishing their marginalization in Ecuador through access to

information and material resources for agriculture. The research was guided by two domains of the Women's Empowerment in Agriculture Index (WEAI), production and resources, as well as the concepts of access and empowerment. Access to resources in agricultural production is often limited to the Indigenous participants in the isolated rural locations influenced by discriminatory legacies of colonization.

The research contributes to a gap in the literature of cooperatives and Indigenous empowerment, which are often analyzed separately (Vásquez-Léon, Burke, & Finan, 2017; Lalander, 2010). Cooperatives allow members to pool resources, share processing costs, and increase bargaining power to compete in the market (Borda-Rodriguez, Johnson, Shaw, & Vicari, 2016). In Ecuador, the cooperative system was introduced as a government requirement on Indigenous communities for them to benefit from *hacienda* land redistribution (Fals Borda, 1971). The cooperative system is now embraced by the Indigenous participants as a strategy for rural survival in the market, but working through their own Indigenous *minga* norms, which is crucial for their self-empowerment.

While collaboration, participation, and self-organization are characteristics of cooperatives, they are deeply embedded within the Indigenous culture in the form of *minga* norms, which Indigenous families and communities have historically relied on to overcome marginalization. *Minga* norms are commonly used by Indigenous communities to “care for and maintain [or repair] common goods such as schools, [water pipes,] pathways, communal buildings, and tourist facilities” (Coq-Huelva, Torres-Navarret, & Bueno-Suárez, 2018, p. 171). *Minga* represent Indigenous family and communal structure, identity, and strengthens social ties particularly when lacking external and/or governmental assistance in their isolated rural locations (Erazo, 2010). These norms were notable when investigating the research question because the

Indigenous cooperative is embedded with their ethnic identities and culture of collaboration to find and distribute agricultural resources given their Indigenous marginalization and rural isolation. Increased access to agricultural resources, particularly new market and production information as well as material resources, improves the participants' market competition and quality of life which is empowering.

The cooperative increases agricultural information among its members by sending bilingual representatives from their elected committee to distant locations and who later share that information in their native language, Kichwa. The cooperative disseminates information in Kichwa to clearly present concepts because many cooperative members have limited Spanish proficiency and literacy abilities. For example, in Ecuador about 17 percent of Indigenous people are illiterate compared to five percent nationally (La Hora, 2018). Increasing their own access to previously denied and inaccessible agricultural information to act and make decisions about production in accordance with their own goals, aligns to Kabeer's concept of empowerment (Kabeer, 1999). This finding also contributes to studies on Indigenous empowerment that emphasize how strategies by and for Indigenous people to access to information to anticipate, plan, and strengthen opportunities in agriculture enhance their own empowerment (Tauli-Corpuz, Enkiwe-Abayao, & de Chavez, 2010; Erazo, 2010).

The cooperative also provides access to material resources including small agricultural tools, such as hoes and sickles, as well as vetch seeds. Access to small tools enhances production and reduces members' need to buy farm inputs for their hand labor-intensive quinoa production. Additionally, the members receive vetch seeds from the cooperative as a long-term strategy to help with the poor land conditions, a remnant of colonization and land redistribution processes from the agrarian reform in the 1960s. These vetch seeds serve as a cover crop and increase soil health,

which enhances participants quinoa production. This finding of increased access to resources contributes to the literature on how Indigenous marginalization and their rural isolation is detrimental to agricultural production and the long-term quality of life of Indigenous communities, and demonstrates how cooperatives can help alleviate such issues (Partridge, 2016; Gray, 2009; Bretón Solo de Zaldivar, 2013). Importantly, the cooperative's focus on improving their own unique struggles as Indigenous rural smallholders aligns with goals of Indigenous solidarity and collaborative strategies from *minga* norms (Lalander, 2010).

The Indigenous cooperative is a unique model that cooperatives in the region are following to help them compete in the market (Jorge, Quinoa Organization Representative Personal Communication, 2019). However, there is room for growth and improvement, such as increased representation of women in high-ranked leadership positions as well as better management strategies to increase assistance for highly vulnerable members. Additionally, the cooperative focuses on quinoa because it is the only income generating crop that survives in the participants environments. Yet, the lack of crop diversification poses risks to members. The cooperative is trying to find markets for other local crops that can provide additional forms of income and further increase nutrient content in their land. These are all opportunities for improvement and further research can examine such issues in greater depth and explore strategies for additional growth in Indigenous cooperatives.

Overall, this study makes unique contributions to the literature by describing how the Ecuadorean Indigenous culture of *minga* is important for distributing information and material resources to self-empower as an Indigenous cooperative. Research on Indigenous empowerment and *minga* have primarily explored Indigenous social movements (Erazo, 2010; Lalander, 2010; Coq-Huelva, Torres-Navarret, & Bueno-Suárez, 2018). However, this study demonstrates how

an Indigenous cooperative is supported by traditional Indigenous norms that emphasize on their own culture, identity, and unique struggles. *Minga* culture is empowering to Indigenous cooperative members as it promotes access to information and resources that diminish their marginalization and increase their agricultural productivity and quality of life. This demonstrates that Indigenous identity and a culture of solidarity promotes positive social and economic outcomes, which can occur not only in social movements, but also in cooperatives.

Conclusion

Because the Indigenous participants face rural isolation as Indigenous people, their membership to the cooperative was crucial at increasing access to resources in their quinoa production. The cooperative provided access to information, which contributed to the participants' empowerment by increasing their bargaining power when dealing with market intermediaries. The cooperative also increase access to small tools which helped diminished production costs and also access to vetch seeds helpful at improving soil quality in the long term. Most importantly access and distribution of resources was accomplished through their own *minga* norms of collaboration and participation, commonly found at the core of Indigenous families and communities since before colonization.

The findings contribute to the literature of agricultural cooperatives and Indigenous empowerment, which are often analyzed separately in Latin America and Ecuador. More specifically, this research demonstrates how the cooperative is embedded with Indigenous *minga* norms of collaboration and participation to support members' empowerment, which are norms often analyzed within studies on Indigenous social movements and not on cooperatives. Understanding the use of Indigenous norms within a cooperative is important as cooperatives are often associated with westernized structures and strategies, but this cooperative is influenced by their own Indigenous norms for self-empowerment. The cooperative focuses on helping

members overcome rural marginalization, a consequence from colonial legacies and practices, by increasing their access to information and material resources in quinoa production. Thus, while the cooperatives system were introduced by the government on Indigenous communities as an imposing modernization strategy, the participants used their own Indigenous family and communal structures in the cooperative to empower and improve the quality of life of its members.

While this research provided unique findings, its limitations could be addressed in future research. First, this study focused on one Indigenous cooperative working with quinoa producers in Chimborazo, Ecuador. Future research could include multiple locations including other cooperatives in Ecuador or other quinoa exporting countries, such as Peru and Bolivia. Researching additional sites and organizations would allow for scholars to cross-compare cooperatives' impacts and alleviation efforts to reduce marginalization among Indigenous producers. Second, the study occurred in the period of five months, but a longer study may provide additional information and insights about how cooperatives function over time, such as how it evolves and survives market changes to learn more about their empowerment strategies. Nevertheless, this study presents unique findings and illuminated how the Ecuadorean Indigenous culture of *minga* is embedded within the cooperative to promote Indigenous self-empowerment through enhancing access to valuable information and material resources, which may influence future research studies examining similar phenomena.

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CHAPTER 4. GENDER AND DECISION-MAKING: QUINOA PRODUCTION AMONG INDIGENOUS WOMEN IN RURAL ECUADOR

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Abstract

Women's empowerment can be analyzed in agriculture through their ability to make choices that align with their life goals. Household farm decision-making is often examined as an individual or a jointly made choice, both frequently described as empowering in quantitative studies as women participate in agricultural decisions. However, empowerment is contextual and often difficult to measure and, thus, a qualitative methodology can better illuminate how joint decision-making processes occur to investigate women's empowerment. This research asks: how is decision-making among Indigenous women influenced by their gender when producing quinoa in rural Ecuador? This study gathered data from in-depth interviews, focus groups, and field notes. The participants included Indigenous women and men producers as well as key informants working in or with the selected quinoa organization in the province of Chimborazo. I found a feminization of agriculture among the participants, in which Indigenous women have become in charge of quinoa production, a traditionally male-dominated crop, due to Indigenous men's absence in the farm. Furthermore, the participants described decision-making as jointly made, but men had greater authority, which was influenced by their religious beliefs, and men often made final decisions even when they had little or no participation in the farm work. I, thus, conclude that women's participation in quinoa production increased, but because the participants associated men as heads of the household, women's decision-making power was still limited even as they have become principal farmers. This qualitative study contributes to the literature of

decision-making and demonstrates the importance of contextual characteristics, such as the feminization of agriculture, that influence decision-making processes. Overall, Indigenous women farmers are limited by patriarchal norms in their decision-making opportunities and overall empowerment.

Introduction

Women's empowerment is often described in terms of their motivations, their capacities to define and pursue life-choices and goals, and their exercising agency (Kabeer, 1999). Empowerment is often analyzed through women's participation in household decision-making, often as an independent or autonomous choice (Deere & Twyman, 2012). The literature on decision-making illustrates that it is important to include relational aspects of interdependence, where men's and women's side-by-side work and joint household decisions are examined (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019; Alwang, Larochelle, & Barrera, 2017).

Studies on women's empowerment often portray household joint decision-making in agriculture as empowering because women participate in decision-making processes (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019). The Women's Empowerment in Agricultural Index (WEAI) and pro-WEAI survey indicate women are empowered when they make agricultural production decisions either alone or jointly with their husbands (Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015). Women, however, often face substantial inequalities of power and privilege resulting from local rules and norms (Kabeer, 2016). Thus, joint decision-making in qualitative work has revealed that "there is a wide range of types of 'joint' decisions, which may not be captured by the closed-ended survey questions" (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019, p. 21). Thus, it is important to investigate the contexts where joint decision-making takes place that affect women's empowerment in agriculture.

This qualitative study analyzed how decision-making occurs among Indigenous women given their gender when producing quinoa. This study used multiple data collection strategies in the form of in-depth interviews, focus groups, and field notes. The study was guided by two domains, *production* and *resources*, from the WEAI, and data were captured using a qualitative research design (Akter, et al., 2017). The WEAI is a survey tool often used by development researchers to analyze women's empowerment in agriculture (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019). The WEAI domains were selected because they focus on empowerment and decision-making in agriculture to examine gender inequality among women in developing countries (Johnson & Rosell, 2015). Production and resources were selected since they tend to be prominent agricultural issues among producers in rural Ecuador (Hentschel & Waters, 2002).

Many of the participants in this study described that they engage in joint decision-making activities which some scholars perceive as empowering because women participate in farming and decision-making processes (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019). However, the community has experienced a feminization of agriculture, which may influence women's opportunities for decision-making and overall empowerment. This feminization of agriculture occurred by having women in charge of quinoa production, previously a role for men and who now engage in off-farm jobs, such as taxi drivers and in construction. However, local patriarchal norms that are influenced by their religious beliefs such as placing men as heads of the household and with greater authority which prevent women from opportunities for decision-making even when women are principal producers. While the participants described engaging in joint farm decision-making, in practice men often had the final say about farm activities even when they were largely absent from the farm. Men were the dominant voice about farm

decisions, which complicates the notion that joint decision-making might be empowering for women.

The context of this feminization of agriculture has implications for how decision-making power may be allocated between men and women, particularly because women now possess greater knowledge about current crops and growing conditions. Women's empowerment means enabling them to take an equitable place with men at making decisions (Quaye, Dowuona, Okai, & Dziedzoave, 2016). Yet, patriarchal gender norms, such as the participants' religious beliefs, denied women's ability to make strategic life choices in agriculture even as the primary producers, which limits their overall empowerment.

Women's Decision-Making and Feminization of Agriculture

Women's empowerment in agriculture is defined here as the "expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (Kabeer, 1999, p. 437). Empowerment is frequently associated with access to valuable resources that positively impact women's self-worth and respect within their communities in agriculture (Kabeer, 2016). However, access is not the only determinant leading to deeper understandings of women's empowerment. It is also important to understand how and by whom farming decisions are made as well as beliefs regarding who should make such decisions (Gram, et al., 2017). In this article, decision-making is defined as people's ability to pursue their life goals in agriculture by determining priorities in their household, given their unique contextual settings (Sraboni, Quisumbing, & Ahmed, 2013).

Women's decision-making opportunities are limited by inequalities of power such as hierarchical and patriarchal local rules and norms that diminish their chances to pursue life goals (Deere & Twyman, 2012; Kabeer, 2016). For example, rural women in Latin America often tend to subsistence production, including selling small animals, as well as cooking, cleaning, and

caring for the family (Waters, Ehlers, Ortega, & Kuhlmann, 2018). If and when women sell larger or high-value products, the proceeds tend to be awarded to men because they tend to regulate prices and have primary control of money (Kuokkanen, 2011). Thus, research has found that men often serve as heads of household and are the owner of assets, which diminishes opportunities for women's empowerment in agriculture (Socolow, 2015).

Studies on decision-making in Latin America (Twyman, Muriel, & García, 2015) and specifically in Ecuador, often find women's household input to farm decisions as made jointly with men (Alwang, Larochelle, & Barrera, 2017; Twyman, Useche, & Deere, 2015; Deere & Twyman, 2012). Quantitative studies including those that use WEAI and Pro-WEAI designate women engaging in interdependent or joint decision-making as empowering because women have input on household decisions (Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015; Alkire, et al., 2013). However, while WEAI is useful at tracking and recognizing the importance of women's work and input in agriculture, qualitative work reveals that empowerment is contextual, and, thus, the unique nuances of joint decision-making might not be captured by survey data (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019).

For example, O'Hara and Clement (2018), who used a mixed methods approach to study women's empowerment in Nepal, indicated the value of not only qualitative analysis but contextual settings to truly understand women's empowerment. Their participants engaged in joint decision-making and possessed high scores in the WEAI, but women did not perceive themselves as empowered when asked during the interviews. Men's absence in the farm was relatively common and contributed to "complex household structures and relationships" that made their analysis "insufficient for measuring or understanding gender empowerment" (O'Hara & Clement, 2018, p. 121).

The use of a quantitative analysis, while standardized and translatable, can be limited in describing empowerment given local contexts and norms. Standard indicators of power and social change vary across cultures; what it is empowering for some might not be for others. A notable contextual issue for agricultural producers in Latin America is the feminization of agriculture, which refers to increasing women's labor load and/or participation in agriculture, often due to men's absence in the farm (Deere, 2005). A feminization of agriculture usually means women assuming previously male-dominated production and may have implications for their opportunities for empowerment and raises questions about how and who should make decisions about farm activities.

Debates on feminization of agriculture include positive descriptions for rural development because women participate in income generating production, beyond subsistence production, which can increase their authority for decision-making in household activities. However, other studies argue that women's workload expansion diminishes their opportunities for empowerment due to increased work burdens (Slavchevska, 2016). For example, Radcliffe (2013) studied land control and male out-migration in rural Ecuador and found that Indigenous women face increased labor burdens in the husbands' absence, and gender biases often leave them with incomplete decision-making power.

Jia-cheng et al. (2019) argued that in a feminization of agriculture there is a distinction between women participating in production and their participation in decision-making. The authors described that in rural China, agricultural decision-making is traditionally male, and while women participate in production, men continue to make management decisions remotely when working in the city. The authors advocated for women's participation in decision-making because they possess valuable agricultural production information as principal producers.

In Ecuador, small-scale Indigenous producers face a feminization of agriculture, where men engage in off-farm work in cities, such as working as taxi drivers or in construction, to increase income opportunities which leaves women in charge of previously male agricultural production. However, there are not existing studies in Latin America that specifically investigate agricultural decision-making in the context of a feminization of agriculture and when producing quinoa, a crop with high global demand. Thus, this study addresses a gap by investigating Ecuadorean Indigenous women's decision-making opportunities in the context of such a feminization of agriculture, where women are in charge of quinoa production as it was a previously male-dominated crop, to understand their overall empowerment.

Methodology

This research uses a case study approach to analyze household decision-making, given local gender power relationships among Indigenous women quinoa producers in rural Ecuador. The research asks: how is decision-making among Indigenous women influenced by their gender when producing quinoa in rural Ecuador? This is a bounded qualitative study that provides detailed and descriptive information to describe people's lives and experiences (Akter, et al., 2017). The primary data included individual face-to-face interviews, focus groups, and field notes. This section describes the study area and population as well as methods used in data collection and analysis used to answer the research question.

Study Area and Population

This case study occurred in Ecuador (Figure 4.1), specifically in the province of Chimborazo (Figure 4.2), which has both the largest concentration of Indigenous people in the Ecuadorean Andes and the largest quinoa production in the country (INEC, 2010; Pro Ecuador, 2015). The participants are quinoa producers from a rural community and are members of an Indigenous quinoa organization. The participants' quinoa organization was selected because of

its high involvement with Indigenous men and women in the province of Chimborazo, particularly as relates to producing and selling quinoa. The organization is managed by and for Indigenous quinoa producers, and, while it does not appear to influence nor play a direct role in the producers' individual household decision-making, it provides access to technical assistance and market information to support the members' overall quinoa production and sales in their rural isolation.



Figure 4.2. Map of Ecuador. Source: Ezilon

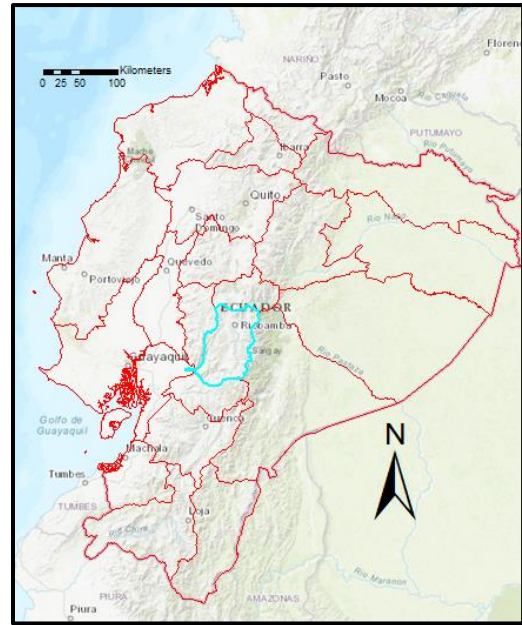


Figure 4.1. Chimborazo, the study area (blue). Source: Author

Data Collection

This study was guided by two (*production* and *resources*) of the five domains (*income*, *leadership*, and *time*) of empowerment from the Women's Empowerment in Agriculture Index (WEAI). The WEAI domains were selected because of the focus on empowerment concepts (e.g., decision-making) in agriculture to address gender inequality among women in developing countries (Johnson & Rosell, 2015). The WEAI, created by USAID in 2010 in conjunction with

IFPRI and OPHI²², is a popular survey tool used by researchers and organizations working on international agricultural development (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019).

However, because empowerment is often intangible, unquantifiable, and contextual, a qualitative approach allows for greater depth and nuance to illuminate the lived experiences of individuals often difficult to achieve with quantitative instruments (Akter, et al., 2017).

Production activities for quinoa production include land preparation (fallowing and tilling), sowing, weed removal, harvesting, and postharvest activities (threshing and polishing). The productive resources encompass land, seeds, fertilizers, machinery, and water. Decision-making about *production* activities and *resource* use are highly influenced by people's gender and their local characteristics, which align with the goals of this study (Alwang, Larochelle, & Barrera, 2017).

Three primary data types were collected and analyzed: focus groups, interviews, and field notes. The data collected was guided by a questionnaire from Akter, et al., (2017), which utilized the two selected domains, production and resources, to qualitatively analyze women's decision-making and empowerment. For example, the participants were asked about how and why they participated in decision-making processes during quinoa production as well as potential issues they encountered that influence their ability to make decisions. The data was collected over an approximately five-month period during the harvesting and planting seasons (September to January) between the years 2018 and 2019. The producer participants were recruited by using purposive sampling (Ritchie & Lewis, 2014) and had the criteria of being small-scale Indigenous men and women quinoa producers, from the participating community, and who were members of the quinoa organization.

²² United States Agency for International Development (USAID), International Food Policy Research Institute (IFPRI), and Oxford Poverty and Human Development Initiative (OPHI)

The focus groups included three sessions, one with both men and women, one with only men, and one with only women. The participants from the focus group sessions were recruited for the individual interviews. The interviews comprised of men and women Indigenous producers and key informants who worked in or with the quinoa organization. The key informants included government officials from MAG and INIAP, representatives from the Organic and Fair-Trade Certifications, and leaders and field technicians working in the organization. The key informants were recruited through snowball sampling (Ritchie & Lewis, 2014) and included people recommended by the quinoa organization as well as by the key informant themselves. All participants (Table 4.1) were assigned pseudonyms and the producer participants' pseudonyms were in Kichwa representing their culture and language (e.g., Allpa means soil/earth).

Table 4.1. Count of male and female participants in focus groups and interviews.

Data Type	Participants Number	Men	Women	Married	Widowed/ Divorced	Single
<i>Interview Producers: Group and Individual</i>	26	11	15	20	4	2
<i>Interview Key Informants</i>	18	12	6			

Data Analysis

This research used an inductive approach that focused on patterns emerging from the collected data after multiple readings and interpretations (Akter, et al., 2017). The concept of *decision-making* guided the research analysis, such as how the participants experience and understand household farm decision-making and who makes such decisions (Sraboni, Quisumbing, & Ahmed, 2013).

The data was analyzed using NVivo software. The data was coded by examining statements about the participants' experiences in farming and by considering key concepts (such as empowerment and decision-making) and the research question. The analysis included three

phases listed in Table 4.2, which were examined both within and across genders to determine perspectives and differences among women and men. For example, women’s perspectives on *production* activities (e.g., who produces quinoa) and their decision-making practices in farming were compared to those of the men. Overall, gender was examined to determine how and who made decisions in the farm among the participants.

Table 4.2. Data analysis approach.

Data Analysis	Approach	Example
<i>Phase 1</i>	Coded phrases and statements related to gender and decision-making	Instances of when decisions were made were coded as <i>decisions</i>
<i>Phase 2</i>	The codes were divided into subcategories of decisions made jointly or alone	Who made the decisions
<i>Phase 3</i>	Both subgroups were analyzed to reveal how contextual gender power relations, such as a feminization of agriculture, influence decisions	How women went about making decisions as principal producers in the husbands’ presence or absence

The data analysis used triangulation which is “the use of multiple methods to enhance the understanding of a phenomenon; it can lead to more valid interpretations” (Birt, Scott, Cavers, Campbell, & Walter, 2016, p. 1803). Triangulation compared the different data sources and participants perspectives from the individual interviews, focus groups, observations, and field notes to promote the understanding of participants’ decision-making processes (Ritchie & Lewis, 2014). For example, while participants in the focus group with men and women indicated that they make decisions jointly, individual interviews revealed that men often have greater decision-making power, which illuminated the complexities of their perspectives on how decisions are made.

Results

Women’s empowerment includes their ability to decide and pursue life choices given their unique settings to improve their quality of life. The findings illustrate that the participants have experienced a feminization of agriculture. Because men are considered the breadwinners,

they work outside the farm, which leaves women in charge of quinoa production, a previously a male-dominated crop. However, while men and women described taking part in joint decision-making, in practice men were the often the final decision makers due to their authority as heads of the household, which limited women's overall empowerment. Next, the context of gender and a feminization of agriculture in the study area is explained, followed by descriptions of decision-making patterns by Indigenous women and men quinoa production participants.

Feminization of Agriculture in Quinoa Production

In order to understand how gender affects Indigenous women's decision making, it's critical to understand a phenomenon that affects it: the feminization of agriculture. A feminization of agriculture occurred in the participants' community where Indigenous women increased participation in quinoa production and men work outside the farm in search of additional income opportunities. This phenomenon is important for understanding decision-making because men's absence in the farm has resulted in an increased labor load for women and led women to become more knowledgeable about production activities in ways that may affect decision-making processes.

The participants' feminization of agriculture is partly explained by their rural isolation as Indigenous people and their opportunities for income generating crop production in Ecuador. During the 1960s, land redistribution through the agrarian reform meant the abolition of *haciendas*²³ and the conclusion of indentured labor of *huasipungueros*²⁴ in rural Ecuador. The dissolution of haciendas gave Indigenous farmers an opportunity to acquire land but, as one participant stated, the land available for them to purchase "was not good for planting as it was

²³ Haciendas represented sharp hierarchies of gender, class, and ethnicity: the landowner exercised total domination and Indigenous women were the last link in the exploitation chain (Palacios, 2005, as cited in Radcliffe, 2014, p. 17).

²⁴ Indigenous laborers living and working in landlord haciendas with their families (Bretón Solo de Zaldivar, 2008).

swampy” or located in steep slopes, which inhibited agricultural production (Zampu, Male Producer Personal Communication, 2019). The participants use the flat swampy land for animal grazing as it provides access to water and forage for animals. Additionally, much of the land on steep slopes does not have roads and, thus, agricultural production is difficult for the participants because machinery cannot be transported to these locations. Finally, land parcels were described as small in size, called *minifundios*,²⁵ especially after generational family inheritances that resulted in the already small area of land being divided into smaller parcels, further limiting people’s agricultural productivity (Maria, MAGAP Representative Personal Communication, 2019).

Despite the poor land conditions among the participants, they engage in quinoa production for income through their membership in the cooperative as it is among the only crop that survives in the poor land conditions. Quinoa is an ancestral crop mostly produced and consumed by Indigenous Andean people. After colonization and due to racist legacies, quinoa was often described as an “Indian food” and is frequently rejected by people in Ecuador. However, because of its high nutritional content, it now has a high selling price internationally due to increased world demand from rich countries (Skarbo, 2015). Quinoa’s high global demand represents an income opportunity for participants because they can earn much more from selling quinoa than they can for other local crops. As Inti stated,

we don’t have other products to sell, but we have quinoa once a year...It generates much more [money] than [other crops that we produce, such as] barley [and] oats. Those ones do not have any value. (Inti, Male Producer Personal Communication, 2019)

²⁵ “Minifundios refer mainly to subsistence-oriented small-holders often by Indigenous and peasant households” (Bose, 2017, p. 3).

The participants' poor-quality land also faces harsh weather conditions, which make quinoa production more challenging. For example, intense rain and violent winds in the steep slopes increase risk associated with nutrient runoff and, thus, opportunities for agricultural productivity (Tarpuy, Male Producer Personal Communication, 2019). The participants continue to produce quinoa since it survives better than other crops and since it generates an income, even if it is only once a year. Yet, because participants can only plant and harvest once per year and other sources of income are limited in the producers' rural isolation, men are forced to find off-farm employment to generate additional income, even though they have deep personal connections to agriculture and their community, which has resulted in a feminization of agriculture.

Men are typically considered “the head of the house, which often means having a second job. Men usually make more money” than women (Rosa, Fair Trade Organization Representative Personal Communication, 2019). Thus, men are often the ones working outside the farm because they get paid better as taxi drivers or in construction, positions dominated by men in the surrounding area, than in agricultural production, which can be tended to by women. All of the married, divorced, and widow participants had experience with men working in the city. Two of the 26 producer participants were single and, thus had no experience with men in city work. Thus, off farm work was a highly prominent feature of this community. As a male producer described this phenomenon:

We, men, work in construction... which is difficult work for women and so they [women] stay here in the farm and work with the animals and quinoa, it is less risky [work]. Also, because of the children are in school, they [women] take care of the lunch and all [housework]. (Zampu, Male Producer Personal Communication, 2019)

In the community, women are associated with motherhood and housework, but due to men's absence in the farm, women's agricultural workload has increased (Sisa, Female Producer Personal Communication, 2019). Women regularly participate in agricultural activities such as animal rearing and subsistence crop production but are now also in charge of quinoa production. Women's greater involvement with quinoa production is evident through their increased membership and involvement with the quinoa organization. The producers and key informants described that quinoa production was primarily a male membership when the Indigenous organization was founded in the early 2000s, and female membership increased over time often via connections with male family members.

For example, a female producer stated "my husband was [first] included [as a member], but [got out and so] I immediately called my cousin's husband [an active member] and begged him to let me join, I asked him to write my name down, then I was included right away" (Charinayay, Female Producer Personal Communication, 2019). The community leader, who is a producer herself, joined the organization because of her father and described that "a man came and invited my father to the organization...My father then [after some years] wrote my name [to be a member]. I never expected to be [associated to it], but since then I stayed" (Anon, Community Leader, Personal Communication, 2019). The two examples indicate a feminization of agriculture because men were the ones first recruited for quinoa production and cooperative membership, but women's membership has increased over time. They now represent about 54 percent of total members (José, Quinoa Organization Representative Personal Communication, 2019), and while men account for 46 percent of members, during the period of this research, women often had more active roles and commonly represented their husbands in quinoa production, the community, and cooperative meetings. As a female producer indicated,

The organization has more women than men... We [women] work and care for agriculture. Even though there are men who are members, the wives are the ones who do the work. Men go to the city [to the off-farm jobs] and unfortunately the ones who stay in the house are women. (Female Producers Focus Group, 2018)

Overall, one of the primary sources of income for the participants are small-scale family farming, mostly quinoa, which the participants also consume, along with barley, wheat, and oats. Family farming is predominantly a task for women, and city labor, such as working in construction or as taxi drivers, positions primarily held by men. Women are, thus, principal producers which translates to a feminization of agriculture, evident by their heavy presence and increased membership in the quinoa cooperative. Understanding women's increased participation in production is important when analyzing decision-making because women are now often more knowledge about production activities. Thus, Indigenous women's labor expectations as women and as principal farmers play important roles for decision-making and empowerment.

Decision-Making Processes in Quinoa Production

The participants described that their agricultural decisions were primarily made jointly between husband and wife, which applied to farm activities and resource use, including in land preparation, sowing, harvesting, and postharvest activities. As Pakarina stated "we both decide. He [the husband] comes here [to the farm] and is alert about things...[and] since we are a couple, we both decide" (Pakarina, Female Producer Personal Communication, 2019). A male producer shared that he and his wife "worry [about production] and decide when it is time for harvesting, planting, weeding. We both discuss it and decide" (Pallana, Male Producer Personal Communication, 2019).

However, gender limited women's opportunities for decision-making and empowerment as because men's status as heads of the household conferred them greater authority. For example,

while decisions were described as jointly made by most of the participants in the focus group with men and women, but during the individual interviews when men and women further described how decisions were made, it was evident that in practice men had greater authority because of their gender. Pakarina described that her husband had an off-farm job and that she was in charge of all production activities, particularly of the income generating quinoa crop. She indicated that she was the one who knew about the crop resource levels and crop conditions, such as when it is time to plant seeds, use the tractor, or weed quinoa. Yet, when asked if she made those decisions as principal producer especially in her husband's absence, she clarified that decisions were made together. She said that "decisions are made at home, as a couple, and that... he always comes [back to the farm]. We are always here together and make decisions together. We are inseparable" (Pakarina, Female Producer Personal Communication, 2019).

Killa stated that her husband "cannot help with the [farming] work, but in the discussions, we both contribute to it, good or bad, we both decide about the production activities" (Killa, Female Producer Personal Communication, 2019). Pakarina and Killa's descriptions illustrate men and women's as participants on joint decision-making about farm activities and resource use in those activities because they engage in conversations about how and what needs to be done in the farm, which can be considered empowering as women have input on farm activities. However, further descriptions revealed that gender plays an important role because men often had greater authority about farming decisions, even when women possess greater knowledge about the crop and the resources needed, which complicates the idea of joint decision as empowering. For example, Sara described,

Decisions are made through conversations with my husband about what we will do during the day, such as where he will go work [in the city] and he would usually say 'you

work on that.’ We always need to discuss [with men about the activities and resources in the farm]. For example [he] would ask ‘what are you going to work on up there?’ [then I would say] ‘planting’ [so he would say] ‘you go work on that but until this [particular] time.’ (Sara, Female Producer Personal Communication, 2019)

Sara had greater knowledge about current crop conditions and the resources needed because she worked the quinoa fields without her husband, yet her husband approved the activity and decided on the amount of time to work on the task, authority he possessed because of his gender. Sara’s descriptions included her as engaging in joint decision-making, but further explanations revealed that the husband was the primary authority. In an interview with Sisa, another female producer, revealed a similar finding where Sisa described decisions being made together, but in practice final decisions were made by her husband:

Interviewer: How do you decide [about production]?

Sisa: [I decide it] with my husband... He helps with decisions. [For example] for planting, [he says] ‘go plant this [type and amount of crop] here or there’...he decides

Interviewer: So, he decides?

Sisa: Of course, we both discuss [it]... When I am working anywhere, I let him know about it...He says, ‘wait or you go.’ For example, sometimes he calls and says, ‘wait for me; I am coming to eat breakfast.’ When he calls, I need to wait [for him]. (Sisa, Female Producer Personal Communication, 2019)

Gender influence men’s greater authority and also diminished women’s decision-making opportunities even as principal farmers. The participants described engaging in joint decision-making, but men’s voice was the dominant one and often the final decision-making authority. Men and women’s power dynamics during the field research meetings provided further evidence

on men's increased authority. For example, while women comprised the majority of the audience during meetings in the community and cooperative, men were often the ones who intervene and share concerns and experiences about quinoa production. Women often remained silent during those meetings even when most are the principal farmers. Women's participation in agricultural production increased, but not necessarily their opportunities for increased authority and decision-making in the farm even they possess greater knowledge about the crop conditions and the required resources. As an NGO key informant described:

When we ask who the head household is, even women say it is the men. There is an ideology that men, because he is a man, has to be the head of the family, even if he is not in the house. The families indicate that in farming activities, such as planting, they both decide [men and women], but women stay in charge and men leave [to their off-farm work]. [However,] decisions are still made by men in agriculture. (Ana, NGO

Representative Personal Communication, 2019)

Gender differences that place men as heads of the household and with greater authority were influenced by the participants religious beliefs, which in turn diminished women's authority and opportunities for decision-making. For example, when asking the participants in the female focus group about who was the head of the household and why, they described their husbands as heads and attributed such greater authority to their religious beliefs. A female participant explained that "men are head household because the Bible says women cannot [be the head] since they came out of the men's rib. They are husband and wife, but the heads of the house are men" (Female Producers Focus Group, 2018).

Another woman stated that "God has given us the gift of a partner and as God said in the Bible, 'men will be the head of the house, just like Jesus is in the church.' We have to listen to

men” (Female Producers Focus Group, 2018). Religion was important to the participants and was repeatedly observed when they describe their opportunities for good production, access to rain, seeds, and machinery, and even sale opportunities. Mostly importantly, as the quotes above illustrate, religious beliefs contribute to men’s greater authority which impacted women’s decision-making opportunities even when they are principal producers. As a key informant, who is also male producer, described that “because of culture and respect to God’s word, head of households are men... women always ask the head of the household [about decisions], even if he is in the city” and who later comply with such decisions (Pedro, Quinoa Organization Representative Personal Communication, 2019).

While decision-making included input from both husband and wife, gender played a crucial role in overall household farm decision-making processes. Men’s and women’s authority and expectations had substantial differences often from religious beliefs, often reflected on women relaying on the husbands return from city work to make decisions. Indigenous women oversaw and contributed to discussions about quinoa production tasks and resource use. Yet, in rural Ecuador they are bounded by gender hierarchies and power relations which limited women’s opportunities for final decision-making even as principal producers.

Discussion and Conclusion

Two key findings and contributions emerged that aligned with the research question: how is decision-making among Indigenous women influenced by their gender when producing quinoa in rural Ecuador? First, this study found a feminization of agriculture in the study area, in which Indigenous women have become the principal producers due to men’s absence in the farm, which builds upon the work of previous scholars (Malapit, Kovarik, Sproule, Meinzen-Dick, & Quisumbing, 2015; Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019; 2017).

Second, this study contributes to the literature on decision-making among Indigenous agricultural producers in Ecuador, which often portray decisions being made jointly by husband and wife (Alwang, Larochelle, & Barrera, 2017; Deere & Twyman, 2012; Twyman, Useche, & Deere, 2015). More specifically, this study addresses a gap in the literature by focusing on Indigenous women's opportunities for decision-making in the context of a feminization of agriculture when producing quinoa in Ecuador.

In this particular context, while women have become the primary producers, their decision-making capabilities are still limited by their gender because men had greater authority at making farm decisions and how resources were used, often from religious beliefs that place men as heads of the household, even when women had greater knowledge. Men's greater authority was also evident during the producers' meetings, where women, while being the majority of the audience and often the main producers, frequently remain silent during discussions. Overall, while women increased their participation in quinoa production, their gender limited their opportunities to improve their production decision-making and empowerment.

It is important to include local contexts, such as gender and a feminization of agriculture, when analyzing women's decision-making and their opportunities for empowerment. While male and female participants described their agricultural decisions as being jointly made, gender impacted who made final decisions. Religion influenced the participants' views on gender such as male figures having greater authority in the Bible, which limited women's opportunities for decision-making in agricultural production. Women engaged in conversations about crop production with their husbands because they were the ones in charge of quinoa and often were more knowledgeable about production conditions. However, women still rely on men's approval

for daily activities, time spent, and production strategies in the field, which limits their overall empowerment.

The empowerment literature often contends that because women have input on farm production and resource use, such joint decision-making processes can be considered empowering (Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019). Empowerment is the expansion of people's opportunities to make strategic life choices (Kabeer, 1999), and joint decision-making can allow women to help them pursue their goals (Cornwall & Rivas, 2015). Yet, women's opportunity for decision-making was limited due to their gender, which raises questions if such practices are actually empowering.

Women have the right to choose and make decisions that align with their rights, values, and goals, especially when that opportunity is denied to them. In this context, women's ability to pursue goals as main producers often requires approval from their husbands, which contributes to the empowerment literature and illustrates importance of local contexts, such as a feminization of agriculture, to understanding agricultural decision-making. Discourses of decision-making need to recognize that having input in a decision is not the same as being able to make decisions. Such considerations need to be made when examining women's empowerment as relates to decision-making and how its influenced by gender.

Finally, while this research made unique contributions to the literature, it also has its limitations. First, due to its exploratory nature, the limited number of participants, and the focus on one community, this research cannot be generalized to all Indigenous female populations in Latin America or Ecuador. However, this research provides empirical evidence that may influence future policy and programs focused on supporting agricultural production among rural Indigenous women. For example, quinoa production is an important source of income in the

Indigenous isolated rural locations, but policies makers and program implementers need to focus on women as they are now often the principal producers, due to a feminization of agriculture. By focusing specifically on women, such as by providing workshops on production strategies and/or directly providing material resources to women, such policies and programs would enhance women's knowledge and resource access that would likely increase their authority for production decisions.

Second, the length of the research study was approximately five months, which allowed the collection of data related to decisions about production activities and resource use in quinoa. However, more time to gather additional data might help further understand decision-making processes in this community and among Indigenous women. For example, data on how the participants decided to use individual resources might reveal additional struggles and/or opportunities for empowerment. Nonetheless, these research findings may inform future work on how Indigenous women's empowerment is further affected by local norms and gender, particularly as relates to decision-making processes. Overall, understanding issues that impact decision-making processes and how decision-making power is distributed between women and men are important issues, and research in this area may help improve the quality of life and empowerment opportunities of Indigenous women.

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CHAPTER 5. GENERAL CONCLUSION

This dissertation concentrates on Indigenous women's empowerment when producing quinoa in rural Ecuador. This research provides a detailed account of how Indigenous women face dual marginalization as Indigenous people from colonial and postcolonial racist practices and also as women from unequal gender power relations, which limit their access to resources and decision-making in agriculture, respectively. Through the use of a qualitative approach the analysis demonstrates the importance of recognizing this population's dual vulnerabilities in ways that may guide practitioners, theory, and future policies and programs that advocate for Indigenous women's well-being and empowerment.

Chapter two contributed to the understanding of Indigenous women's empowerment by focusing on their Indigeneity and access to multiple agricultural resources when producing quinoa in rural Ecuador, given historical colonial and postcolonial legacies. While previous studies on similar populations have generally focused on examining one productive resource at a time (Bose, 2017; Hidalgo, Boelens, & Vos, 2017), this chapter examined multiple productive resources and found that the participants possess poor quality land in isolated areas, a result of constructed and reconstructed colonial discriminations including uneven land distributions during the agrarian reform in the 1960s.

The Indigenous people's poor-quality land is often located on steep slopes without roads that diminish opportunities to transport machinery and organic fertilizers. Limited access to machinery is problematic because agricultural production, including quinoa, requires more laborious and time-consuming hand labor. Additionally, largely due to nutrient depletion, the producers have faced reduced quinoa production over time. Nutrient depletion is partly diminished through crop rotation, but the producers are still limited in their ability to transport

fertilizer to their land in steep and high-altitude slopes without roads. Furthermore, their isolated locations are marked by scarce water and harsh weather conditions that reduce agricultural productivity and increase their poverty status. Quinoa is still a top crop for their production as it is the primary income opportunity in the participants' isolated and poor-quality land.

Chapter two contributes to the literature on Indigenous women's empowerment by describing their marginalization as Indigenous people living in rural isolation with limited access to resources, a consequence from colonial and postcolonial practices (Hidalgo, Boelens, & Vos, 2017; Bretón Solo de Zaldivar, 2013; Hoogesteger, 2012). This phenomenon was influenced by problematic land redistributions to Indigenous groups during the agrarian reform in the 1960s (Kay, 2015; Wasserstrom & Southgate, 2013; Kuokkanen, 2011). Additionally, most studies concentrated on the social and economic opportunities of smallholder quinoa producers focus on other top exporting countries such as Peru and Bolivia (Bedoya-perales, Pumi, Mujica, Talamini, & Domingos Padula, 2018; Kerssen, 2015; Walsh-Dilley, 2013), but this research focuses on Ecuador and addresses a gap in the literature by focusing on rural Ecuadorean Indigenous quinoa producers' access to multiple productive resources.

Analyzing multiple resources provides a unique contribution because land, water, seeds, fertilizer, and machinery are critical when producing quinoa. However, producers' access to these resources is limited due to colonial and postcolonial legacies. Overall, while the government of Ecuador increased investment on quinoa production for rural development (FAO, 2015), Indigenous quinoa producers, including women, are still marginalized and underserved due to colonial legacies. Thus, it is important to provide Indigenous groups and women with assistance from governments and programs to enhance resource access, particularly given that quinoa production is a primary source of income in their harsh agricultural conditions.

Chapter three illuminates Indigenous women's empowerment by focusing on their opportunities for empowerment through their membership in a cooperative aiming at reducing rural Indigenous vulnerabilities. Studies on Indigenous struggles in Ecuador often analyze their social movements and their collaborative nature to improve their empowerment, which have often advanced their cultural, social, and economic inclusion (Faas, 2015; Becker, 2011; Lalander, 2010). This study addresses a gap in the literature by focusing on a rural Ecuadorean Indigenous quinoa cooperative's effort to promote Indigenous empowerment. The findings show that the cooperative was embedded with Indigenous *minga* norms of collaboration and participation to support quinoa production. *Mingas* are connected to family, community, and Indigeneity to strengthen social ties and, thus, present in the cooperative when acquiring and distributing agricultural information and material resources such as small tools and vetch seeds.

Enhanced access to agricultural information improved the cooperative's members bargaining power to compete in the global market, and the provision of small tools reflected the cooperative's focus on Indigenous production challenges as most producers' land lack roads for machinery and, thus, engage in arduous labor by hand. Additionally, the cooperative provided vetch seeds to members to increase crop diversification and nitrogen in the soil, which is often depleted during quinoa production. Membership in the cooperative helped diminish Indigenous vulnerabilities by increasing the members' access to agricultural information and small tools in rural isolation to improve production, market competition and income opportunities, which was empowering to Indigenous women as members. However, their opportunities for Indigenous empowerment do not address gender limitations such as patriarchal structures that increase men's authority in decision-making because they often are heads of the household.

Chapter four analyzed gender issues and found that the participants experienced a feminization of agriculture in which Indigenous women have become the principal farmers in agricultural production, including quinoa, which raises issues about farm decision-making processes. This feminization of agriculture was caused by scarce income opportunities in their isolated rural locations with harsh weather conditions. Quinoa production provides income, but it is among the only crop that generates income and the turnaround is just once a year, which forced Indigenous men to seek work outside the farm as they were considered the heads of the household and breadwinners. The participants described they engage in joint decision-making, which is often considered empowering to women in the literature as they have a saying about farm activities (Twyman, Useche, & Deere, 2015; Deere & Alvarado, 2016; Alwang, Larochelle, & Barrera, 2017; Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019).

In practice, however, men's decision-making authority was greater than women's and, men often made the final decisions, even when women possess greater knowledge about farm activities, which calls to question if such decision-making practices are truly empowering. This research contributes to a gap in the literature on decision-making and feminization of agriculture by focusing on them simultaneously in the context of rural Indigenous quinoa production in Ecuador. Overall, women's increased participation in farm activities did not necessarily equate to increased opportunities for agricultural decision-making as men had greater decision-making authority, which negatively influenced Indigenous women's opportunities for overall empowerment.

Indigenous women are crucial contributors in agriculture and are now often the primary producers of quinoa, but their empowerment is negatively affected by their marginalization as both Indigenous people and as women. Indigeneity places them at a disadvantage when it comes

to accessing to agricultural resources because they live in isolated rural areas with harsh weather conditions, a consequence from (re)constructed colonial and postcolonial legacies. Their poor conditions diminish their opportunities for agricultural production and, thus, they mostly focus on quinoa due to its survival in the harsh weather conditions.

The Indigenous women participants are members of a quinoa cooperative, which supports quinoa production through Indigenous strategies, called *minga* norms, to address the Indigenous and rural struggles of producers. Their membership has increased their opportunities for income, production, and bargaining power in a competitive quinoa market. However, their cooperative membership, while empowering when competing in the market, does not diminishes their vulnerability as women. Gender is another stratifier for marginalization among Indigenous women because they are restricted when it comes to farm decision-making, even when they are the principal producers of quinoa due to men's absence from the farm. While women and men described engaging in joint decision-making, which allowed women to participate in farm decisions, men had greater authority in final decision-making. Indigenous women's empowerment is, thus, not only negatively influenced by their Indigenous marginalization, but by also their gender. Thus, practitioners as well as future policies and programs need to address these two important issues for this vulnerable population.

Policy and Program Implications

The research findings have policy and program implications when promoting agricultural growth and development among Indigenous producers in rural Ecuador. After the International Year of Quinoa in 2013 (FAO, 2015), governments in Latin America, particularly Ecuador, increased investment on quinoa production as a developmental program in rural areas, where the majority of small-scale producers are Indigenous groups who have produced quinoa since before colonization. However, such interventions need to consider unique Indigenous vulnerabilities,

such as limited access to agricultural information and resources, and their agricultural needs. Programs for quinoa production made material resources such as seeds, fertilizers, and trainings available, which were important in achieving policy outcomes, but the participants often save their own seeds, frequently lack roads and infrastructure for transporting the resources, and live too far away from the trainings (Chapter 2).

Developmental interventions and governmental policies can and should emphasize the participants' conditions and ability to effectively access and utilize resources. For example, bringing fertilizer to their land is challenging as is, but due to the steep slopes the producers are unable to transport the fertilizers to their quinoa plots. Furthermore, while the government made quinoa seeds available to producers, the seeds were not organic, which meant participants could not plant the seeds because of their adherence to organic quinoa production and certification, a strategy used for market appeal and higher income opportunities.

The government, thus, should focus on what resources are needed locally, such as reliable roads that facilitate transportation or providing trainings in a more centralized rural area. The government's lack of considerations about Indigenous struggles made the participants' membership in an Indigenous cooperative valuable for accessing material resources and crucial for accessing agricultural information in their rural isolation which in turn increased their bargaining power to compete in the quinoa market. Thus, without considerations like rural isolation, land topography, and organic production, the participants and other Indigenous producers are unlikely to fully benefit from such governmental quinoa policies and programs.

Additionally, another stratifier for marginalization among the Indigenous groups is gender, but existing quinoa production interventions often do not emphasize women even when they are crucial contributors and often the primary quinoa producers (FAO, 2015; Pro Ecuador,

2015; MAGAP, 2014). Many development projects and cooperative initiatives have good intentions to empower small-scale producers, but often without considering women's participation alongside their Indigeneity such populations fall within the cracks of Indigenous and gender struggles and policies for empowerment. Women's input in quinoa production is often overlooked by patriarchal structures that place men in charge even when women are principal farmers. Thus, interventions need to emphasize, acknowledge, and encourage women's role and input about quinoa production when facilitating resources and trainings.

Indigenous women face patriarchal structures that often limit their opportunities for empowerment, such as making decisions in the farm even as principal producers. It is crucial that cooperatives, policy makers, and practitioners address and bring awareness about structural issues that marginalize Indigenous women, limit their access to resources, and negatively impact their decision-making capabilities. By specifically targeting Indigenous women, development policies and initiatives can tailor programming to their unique backgrounds and struggles to more deeply benefit and empower them as they are among the most vulnerable groups in Ecuador.

Conceptual Implications

This dissertation has conceptual implications for the literature of Indigenous women's empowerment in agriculture. Empowerment research often emphasizes people's opportunities and motivations when defining and pursuing life-choices and goals (Kabeer, 1999). In agriculture, empowerment is often analyzed through access to productive resources which improves people's self-worth and respect within their communities (Kabeer, 2016). However, access is not the only determinant leading to deeper understandings of Indigenous women's empowerment and, thus, it is also important to understand who makes agricultural decisions and how they are made (Gram, et al., 2017). This research demonstrates how Indigenous women

have limited access to productive resources due to their Indigenous rural marginalization and, while membership to a cooperative helped mitigating some of their Indigenous struggles, they still face struggles as women when it comes to farm decision-making even when in charge of all production. Thus, this research demonstrates how both access to resources and decision-making opportunities affect Indigenous women's empowerment.

This dissertation uses two domains, production and resources, from the Women's Empowerment in Agriculture Index (WEAI) because they focus on both access and decision-making in agriculture, concepts often analyzed separately in the empowerment literature (Twyman, Useche, & Deere, 2015; Deere & Alvarado, 2016; Partridge, 2016; Alwang, Larochelle, & Barrera, 2017; Bose, 2017). Second, in this research the WEAI components are analyzed qualitatively because empowerment is often considered unquantifiable and context specific (Akter, et al., 2017; Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019), and thus, this study demonstrates how WEAI domains can be investigated qualitatively to illustrate nuances of these Indigenous women's lived experiences and opportunities for empowerment.

Third, the WEAI only focuses on gender vulnerabilities and does not explicitly consider other vulnerabilities, such as Indigenous marginalization (Mosedale, 2014; Radcliffe S. A., 2014; Lyon, Mutersbaugh, & Worthen, 2017). Thus, this research utilizes WEAI's domains of empowerment to not only understand gender vulnerabilities, but also Indigenous marginalization, which collectively demonstrate important issues that influence Indigenous women's empowerment.

Overall, the research findings, through a qualitative approach focused on gender and Indigeneity, provided a more nuanced picture of the empowerment of rural Ecuadorean Indigenous women quinoa producers than either Indigeneity or gender would illustrate alone.

Utilizing the WEAI provided an important conceptual understanding on empowerment and power relationships, but this research goes beyond gender and includes Indigeneity an important issue for Indigenous women's opportunities in agriculture.

Limitations and Future Research

This study investigated multiple factors influencing Indigenous women's empowerment within a specific timeframe and with limited resources, and additional time and resources may have further illuminated the complexities of Indigenous women's empowerment. Nonetheless, this research is a valuable step towards increasing awareness about Indigenous women's limited opportunities in accessing resources and farm decision-making in rural Ecuador. Additionally, this research cannot be generalized as it focuses on a specific place and a study population with unique socioeconomic characteristics, but it still provides a detailed examination of Indigenous women involved with quinoa production and contributes to the literature of empowerment.

Finally, I acknowledge my insider/outsider status, which both provide opportunities and limitations when collecting and analyzing data. I am a woman, of Indigenous heritage, and from the study area province of Chimborazo, but who is not considered Indigenous and lives outside of Ecuador. Thus, I engaged in shared experiences with the participants to maximize their trust and, thus, ensure a good data collection and analysis. For instance, my gender, nationality, and Indigenous name, Sumac, were important at introducing myself to the Indigenous cooperative and their members even when my educational level and residency could have been intimidating. Additionally, a pre-data collection visit was conducted to learn about local culture, beliefs, and way of life. The trip increased participants' trust when invited to their homes, farms, and meetings, all crucial for data collection and interpretation.

Future research about Indigenous women's empowerment could examine more than one location and population at a time. Multiple locations can reveal how other factors, such as social

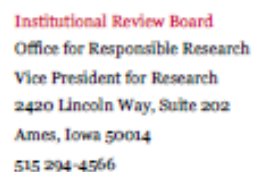
class, education, and marital status, further inhibit or enhance access to resources and decision-making in the farm. Additionally, longer term ethnographic studies that study multiple quinoa production seasons including the growing and selling seasons can further illustrate the complexities of Indigenous women's empowerment. Overall, despite efforts by the government of Ecuador to promote rural development, such as increased investment on quinoa production and the implementation of agricultural cooperatives in the 1960s, Indigenous groups continue to be among the poorest in the country, and Indigenous women face vulnerabilities in agriculture as both Indigenous people and women. Further research in varying contexts is needed to understand and provide evidence of their multiple struggles and opportunities for empowerment as both Indigenous people and as women.

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Date: 10/17/2018

To: Sumac Cardenas-Oleas Ann Oberhauser

From: Office for Responsible Research

Title: The Impact of Ethnicity and Gender on Indigenous Women's Empowerment in Ecuador's Quinos Production

IRB ID: 18-345

Submission Type: Modification Review Type: Expedited

Approval Date: 10/17/2018 Date for Continuing Review: 09/20/2020

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- Retain signed informed consent documents for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing any changes to the study.
- Inform the IRB if the Principal Investigator and/or Supervising Investigator end their role or involvement with the project with sufficient time to allow an alternate PI/Supervising Investigator to assume oversight responsibility. Projects must have an eligible PI to remain open.
- Immediately inform the IRB of (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all human subjects research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Human subjects research activity can resume once IRB approval is re-established.
- Submit an application for Continuing Review at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

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Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.