

The Impact of Women's Health Issues on Agricultural Production in Fondwa

Junior Beauvais

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Donna M. Westfall-Rudd, Committee Chair

Tiffany Drape

Karrin Sax

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Abstract

Agriculture is the backbone of the Haitian economy and provides employment 80% employment to the Haitian population (Lundahl, 1992). Also 85% of people in rural areas generate money from agricultural activities (IFAD, 2008). In the rural areas, men and women participate in agricultural production. However, the women play a vital role in the whole process starting from land preparation to crop sale (Gaspard, 2013). The Haitian women, despite of their function in crop productions (Dor, 2016), face different health issues, which have influence over Haitian agricultural system. Therefore, the research purposed was to investigate the impact of women heath issues on agricultural production Fondwa. A qualitative case study was used to investigate ten women farmers in the community of Fondwa, which is a small farming area in southwest part of Haiti. An interview questionnaire was used for data collection. Findings of the study showed that the women's contribution to farming is vital for promoting agricultural production, and they face different health issues that are linked to the environment and water pollution. Lastly, the women health problems influence agricultural production in the Fondwa area by preventing them from doing their daily agricultural activities, which have a direct impact over family and country's income.

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General Audience Abstract

Fondwa is a small mountainous community village in the Southwest department of Haiti with a population of approximately 10,000 people. Corn, beans, and vegetables are the dominant crops in the area of Fondwa. In Fondwa, women play an important role in crop production and agricultural sale. However, these women, despite of their role in farming, face many health issues due to the lack of health infrastructure. The purpose of this study was to investigate the impact of women's health issues on agricultural production in Fondwa. For this study, a sample of ten women from nine areas were selected for this study and these participants live in Fondwa. A qualitative method was used to conduct the research and interview questionnaire was used to gather information from the participants. The interview process was done via Skype meetings with the women. Results of the study showed that the 1) Fondwa women farmers play an important role in crop production in the community of Fondwa because they plant, harvest, and sale crops, which helps take care of their family. 2) The women have difficulty to receive healthcare service due to infrastructure problems in the community. 3) The women's health issues are related to water and environmental issues. 4) The agricultural production in Fondwa will slow down without the women's presence. The participants showed passion and dedication for agriculture despite of their health problems.

Dedication

I dedicate this thesis to my mother and father who cannot be here and my wife Manoucheka Fontus who is here with me. I want to thank them for their patience, love, support, and courage. I also want to thank them for the life lessons they have taught me.

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Chapter 1: Introduction

Background and Setting

In Haiti, more women than men participate in farming, which provides crop production to provide family income and to feed people in urban areas. The international development community has stated that farming is a powerful machine for poverty alleviation in countries where agriculture is the principal job of the poor (Food and Agricultural Organization of the United Nations [FAO], 2011). Providing more than 80% of the nation's employment, Haiti's agriculture remains the principal tool for the promotion of the country's economy and is the main source of income for rural areas (Lundahl, 1992). More specifically, in Haiti's rural areas, like Fondwa, agriculture provides jobs to more than 85% of the population, (International Fund for Agricultural Development [IFAD], 2008).

Haiti is a popular country for producing a large variety of agricultural products such as mangoes, sisal, bananas, vetiver oil, Arabica coffee, and cacao (Smucker, Fleurantin, McGahuey, & Swartley, 2005). Haitian agricultural products also add to the economy by exporting certain agricultural products; by example, vetiver is used for cosmetic products such as oil and perfumes, as well as for medicinal usage (Smucker et al., 2005). In addition, the Haitian farming system has the capability to produce organic products that have the potential to strengthen the exports to America and European countries (International Trade Administration [ITA], U.S. Department of Commerce, 2017).

In 2016, the country earned \$32,070,000 US dollars (USD) in export; of which cacao accounted for \$7.3 million, and coffee and tea export were \$730 specify 'millions'? (IAT, 2017). Haiti also has the perfect land and ecosystems for producing organic fruits, cacao, sorghum, and beans, which can facilitate agricultural product transformation and trade (Rodríguez, Castañeda

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& Lundy, 2010). The people in the capital of Port-au-Prince rely on the farmers living in rural areas for nutrition staples, crops like beans, corn, sweet potatoes, plantain, breadfruit, cassava, yam, and fruits such as avocado, oranges, and mangos (Clammer, 2013).

In fact, Haitian women play an important role in agricultural production and trade in Haiti (Gaspard, 2013). The women help produce and harvest crops and load the crops on big trucks to transport them to Port-au-Prince to be marketed (Maguire, 2016). The women have been participating in agricultural activities for many years in rural areas in Haiti. The women's presence in agriculture promotes the growth of Haiti's economy (Dor, 2016).

The Haitian, regardless of their participation in agriculture and trade, face health problems, which represents a constraint to their full participation in agriculture (Dor, 2016). Women in the rural areas in Haiti live in scattered areas which, sometimes, make it difficult for them to move from one place to another or visit hospitals for checkups (Nic Carthaigh, De Gryse, Esmati, Nizar, Van Overloop, Fricke, & Philips, 2014). The distance problem causes a lack of proper medical treatment (McLaughlin & Rogers, 2013) and as a result many of the women in rural areas become diagnosed with long-lasting diseases which may lead to death (Castro & Farmer, 2003). For instance, breast cancer is the second most popular types of cancer in Haiti (Bernard, Pascal, Raymond, & DeGennaro, 2017). Many articles have been published about agriculture, women's health, and role of the women in agriculture. However, the impact and/or relationship of women's health on agriculture is being ignored. Therefore, this study emphasizes the gap in scientific research by focusing on the effects of women's health on agricultural production.

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Demographic Information

Haiti's population is estimated to reach 15.7 million by 2050 (Pierce, 2013). With an area of 27,750 square kilometers and a density of 396 per square km, the country's current growth rate is 1.25 percent (World Population Review, 2017). It is placed 85th in the world in terms of population. Half of Haiti's population is under the age of 20. The Haitian ancestors were formed from a majority of mixed black African slaves and Mulattoes (World Population Review, 2017). There is also a large number of European and Levantine/Semitic who first entered Haiti during the mid- to late-19th century when the country's economy was ruled by Italian and German immigrants (World Population Review, 2017). There is a large population of Haitian diaspora living in different foreign countries such as the United States (880,000), Cuba (300,000), Dominican Republic (800,000), France (80,000), the Bahamas (80,000), France (80,000), and Canada (100,000) (World Population Review, 2017).

As of December 2016, there were 5,424,623 males and 5,511,148 females and 275,085 live births in the country (Countrymeter, 2017). Currently, there are 3.9 children per woman in the country (Pierce, 2013). Women in Haiti have a life expectancy of 62.8 years compared to women in the Dominican Republic who have an average of 75.5 years. Haiti has an infant mortality rate of 55 deaths per 1,000 live births, and it has one of the highest maternal mortality rates in the world, 630 per 100,000 live birth (Jacobs, Judd, & Bhutta, 2016). Women account for nearly 40% of rural heads of households (Oxfam, 2010). There are 50% of unemployed women in the rural areas (United States Agency for International Development [USAID], 2016). The women literacy rate is very low in Haiti. The percentage of literate men is 61% and for women 57% (Goldman, 2015). In addition, the poverty level in rural areas is extremely high with a percentage of 75.2%, vs. the city at 40.8% (Viard, 2013). Despite the literacy and poverty

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problems for women, especially women who live in the rural communities, they play a crucial role in the Haitian society and economy.

In addition, according to Vadrine (2004) from Rhode Island University, Haiti will always remain in an unstable condition and not make progress without agricultural improvement and education. For the author agriculture is complementary to literacy (Vadrine, 2004). Without food, educated people cannot perform well at work (Vadrine, 2004).

The Poverty Problem in Haiti

Haiti is recognized as the poorest country in the western hemisphere (Oxfam, 2010). According to IFAD (2007-2008) Haiti is ranked 146th among 177 countries in the world. The rapid growth of the Haitian population combined with the economic collapse and socio-political tension, these factors cause a great majority of the population to live in extreme poverty (LaHatte, 2017). According to the IFAD (2008) the poverty rate in the country is 77 %; 80 % of the rural population is poor, and 77% lives in deep poverty. Fifty percent of the Haitian population lives with less than \$1 as daily expenses, and 80% with less than \$2 (United States Agency for International Development [USAID], 2014).

Food insecurity and famine are long-lasting problems in Haiti (Hutson, Trzcinski, & Kolbe, 2014). In particular, people living outside of urban areas are more susceptible to natural disasters due to poor and unstable environmental conditions (Chapagain & Raizada, 2017). Those conditions may include soil nutrient deficiencies, lack of infrastructure, and inaccessibility to markets or because of their inability to expand their income sources (Damien & Echevin, 2011). The abuse of natural resources and environmental problems remain an important problem that increase poverty throughout the region. Environmental degradation is a major actor that contributes to increase poverty in Haiti (Smith, 2010). Haiti is one of the most environmentally

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degraded countries in the western hemisphere. Land degradation and deforestation are two major environmental disturbances in Haiti (Williams, 2011).

Soil degradation and deforestation in Haiti occur mostly due to the overutilization of agricultural lands (McClintock, n.d.) and overexploitation of forested areas (Stevenson, 1989). Since the period of French revolution, farmers in the country adopt the practice of mono cropping of high value products such as cotton, indigo, tobacco, sugarcane, and coffee, which pull a lot of nutrients from the soil (McClintock, n.d). According to Norris, (2008) soil losses occur in mountainous areas where the land is very steep with a slope greater than fifty percent (Gibbs& Salmon, 2015). Therefore, the amount of arable land has been reduced by more than one fifth due to the lack of skills of Haitian farmers (Gibbset al., 2015). Deforestation also decreases evaporation effect, which carries negative impacts on rainfall and stream flow (Reis, Klein-Júnior, de Souza, Stanislawczuk, & Loguercio, 2010). At the same time, the exploitation of wood for charcoal is a serious problem that leads to land degradation in Haiti (McClintock, n.d.; Alexis, Hernandez, & Pastor, n.d.). Seventy percent of the population uses charcoal and wood as main sources of fuel for cooking (Women's Commission Refugee & World Food Program [WFP], 2010). In the past, all of the country was originally well forested, but now there is less than 3% forest cover left (Dalila Conde & Christensen, 2008). The deforestation in the country causes flood problems (Kaimowitz, 2005). Spring and stream waters become polluted with sediment, which have a negative effect on the estuary and coastal environments and people's health (Colindres, Jain, Bowen, Mintz, & Domond, 2007).

Ninety percent of children in Haiti have long lasting infectious diseases and intestinal parasites that they catch from consuming polluted water (Dalila, Conde & Christensen, 2008). Lack of clean water is a major issue (Gelting, Bliss, Patrick, Lockhart, & Handzel, 2013) that

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causes infant mortality in Haiti. The country has the highest infant mortality rates in the Western Hemisphere (Ali, Lopez, You, Kim, Sah, Maskery, & Clemens, 2012). According to the United Nations, 16% of Haiti's children under the age of five have died from waterborne diseases prior to the earthquake in 2010 (Colindres, Jain, Bowen, Mintz, & Domond, 2007). This number is now greater because of the impact of the earthquake and related cholera outbreak. Since October 2010, more than 388,950 cholera cases have been observed – the first reported case of outbreaks in decades. Jacmel, one of the most affected regions in Haiti, accounts for 22% of the people who have died from cholera with over 5,000 deaths (International Action, 2011).

Therefore, the poverty problem affects not only Haitian's lives but the country's economy and the environment. Research argues that there is a close linkage between poverty and the unfair allocation of economic wealth and political power. Lack of transparency in governments is one of the major and extensive problems in many of the countries including Haiti (Klitgaard, 2010).

Purpose and Research Questions

The purpose of this study is to examine the impact of women's health issues on agriculture production in Fondwa. This project is important because of women's role as farmers in crop production in Fondwa, the health concerns in the community, and the function of agriculture in the community. Therefore, six major questions are at the base of this study:

1. Who are the women farmers in Fondwa?
2. What are the health issues?
3. How are the women farmers learning about potential issues?
4. How does participation in educational programs help women farmers address their health problems?

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5. How do the current health issues affect the daily agricultural work of women farmers in Fondwa?
6. How do women farmers' health issues economically impact their families?

Reflexivity

I grew up in Fondwa, a small mountainous community village located in the southwestern department of Haiti. The Fondwa population is almost 11, 000 people, from which more than 80% of that population practice farming to take care of their family. Certain areas in the community lack infrastructure, which impair transportation from one place to another. People who live long distances from towns have difficulty going from one place to another. Those who are sick must ride on mules or must be carried by strong men to go to the hospital. It sometimes takes two to three hours for people to walk to reach the public road. This distance between the farmers' houses causes sick people to sometimes die before arriving at the hospital. Many women have died from child labor due to limited access to transportation and skilled healthcare promoters. In Fondwa, midwives known as traditional birth attendants are low in number. Often there is only one midwife for an entire community and the midwife walks long distances to deliver services. The Fondwa women are valuable marketers who help produce and market the agricultural products in the community. Despite their health issues, they are important actors in this sector. As a native of Fondwa, I am concerned for the Fondwa residents and the farming practice because I understand the effort that women invest into farming, their family and at the same time their health concerns. Based on the important function of Fondwa women in agriculture, the researcher's goal is to investigate the impact of the Fondwa women's health on agriculture in the community.

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Significance and Importance of the Study

Fondwa is a mountainous community village where agriculture is the primary activities for the villagers to make money. Farmers grow a large variety of crops in the area such as black beans, corn, sorghum, pigeon peas, sweet potatoes, cassava, plantain, and cabbage. In the rural areas men and women participate in farming (Gaspard, 2013). People who live in cities depend on the farmers for fresh and healthy food.

In Fondwa, the women participate in farming during planting, harvesting, and marketing seasons. Women in Fondwa are one of the big suppliers of banana, which means fig in Creole, in Port-au-Prince. Moreover, they travel from one market to another with mules, donkeys, and horses to buy agricultural products. Those products will be marketed in the city in order to make more profit on the crop sale. However, many of these women farmers/traders live far from the public roads and have to walk for several hours to reach the market for trade or a clinic for primary healthcare (Dankelman & Davidson, 2013). Some areas where these women reside are out of reach of local authorities such as Casecs, Asecs and Majors, whom are representatives of the Haitian government in rural areas, and Health Care Promoters (Vansteenkiste, 2017); yet these women have health issues such as hypertension, diabetes, and arthritis problems (Weber, Schiffrin, White, Mann, Lindholm, Kenerson, & Cohen, 2014). Therefore, there is a great need to document the understanding that Fondwa women have about their health conditions and daily farming activities.

Results of the study may help us to understand the impact of women's healthcare issues on the agricultural production in Haiti. More specifically, the research may provide to readers and other researchers a better knowledge of the relationship between women's health and crop production in Fondwa. Furthermore, the study is seeking to help uncover health issues that limit

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the Haitian women, particularly those in Fondwa, from performing in the agricultural system. There have been several studies conducted in the community on health, education, and agriculture separately, but the subject of health in relationship to farmers (specifically women farmers) and agriculture seems to be of great ignorance (Jacobs et al., 2016). It is anticipated that this topic of women's health and agriculture can help reveal serious issues that can influence crop production and the economy of Fondwa inhabitants.

The Haitian government, due to financial barriers and geographic position of the communities, does not take into consideration the severity of health issues in the rural areas or monitor crop production in Haiti (DeGennaro, 2011). It becomes a difficult process to keep record of the number of sick farmers (women) and to quantify the number of crops produced in rural areas on an annual basis. In conducting this study, my hope is that it will help people of Fondwa see and understand the linkage of women farmers' health and agriculture. The study will also help local authorities (Casecs, Asecs) to improve health and agriculture decision-making for farmers in the Fondwa Region, which will help strengthen women's participation in farming and increase agricultural production in the locality of Fondwa.

Definition of Terms

Arthritis: painful swellings of body joints

Asec: Elected representative of smaller group of people in the rural areas.

Breast cancer: Disease in which cells in the breast overgrown (Center for Diseases Control [CDC], n.d.)

Casec: Elected representative of a large people rural areas.

Diabetes: Dysfunction of body in the production of hormone insulin that results in a dysfunction of metabolism carbohydrates and an increase of glucose level in blood and urine.

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Fig: Creole name for banana in English.

Health infrastructure: Provides communities, states, and the Nation the capacity to prevent disease, promote health, and prepare for and respond to both acute (emergency) threats and chronic (ongoing) challenges to health.

Health workers: Providers of basic health services in rural communities (Olaniran, Smith, Unkels, Bar-Zeev, & Broek, 2017).

Hypertension: The state of person with high blood pressure problem.

Late-stage cancer: A term utilized to categorize cancer that reaches maturity in its growth and has spread to the lymph nodes or other location in the body (National Cancer Institute [NCI], n.d.).

Madan Sara: Women farmers who trade agricultural products from one place to another in Haiti.

Restavek: Combined French and Creole word meaning “Stay With” children of poor in rural areas who stay with privileged families in urban settings (Abrams, 2010).

Basic Assumption

After consulting the literature, it is assumed that women's health in rural areas are affected by different issues. The presence of women in agriculture is very important because they participate at different levels of production and their absences can affect the country's economy and their families' livelihood.

Chapter 2: Literature Review

Women occupy an important role in related and non-related agricultural activities to ensure food security and financial progress within the developing countries (Oxfam, 2010). Several other studies argue that women in the third world countries represent a center pillar for agricultural production. According to research, 60% to 80% of women in the third world countries participate in farming (Uisso & Masao, 2016).

Women's Participation in Politics and Agriculture in the Caribbean

Research shows that a great majority of Caribbean women are deeply involved in politics (Edmondson, 2003) and several other countries in the Caribbean including Haiti are ranked based on the number of females' participation in politics. According to Htun (2005) Cuba is one of the top five countries that has about 38% of women in the lower house of legislature. Furthermore, in Guyana, 30% of the lower house are represented by females. Trinidad and Tobago (27th), Dominican Republic (52nd), St Vincent and the Grenadines (75th), Dominica (90th), Bahamas (92nd), Haiti and St Lucia (96th), Antigua & Barbuda (99th), Barbados (102nd), Suriname (104th), St Kitts & Nevis (120th), and Belize (134). In addition, the Caribbean has also made tremendous progress in electing women as heads of state. Trinidad and Tobago, in 2010, elected their female prime minister (Lansford, 2017). The Dominican Republic, 1980- 1985, had Mary Eugenia Charles as their first prime minister, whom was the second black female elected as prime minister in the world (Skard, 2016).

The Caribbean women have also a remarkable history since the time of revolution (Dubois, 2012). Research on women and gender in the Caribbean has rapidly spread as important works have occurred on women slavery, in the early twentieth century and in modern politics and economy. The Caribbean women, historically speaking, play an exceptional role in both the

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economy and family activities (Massiah, 1983). Women in the Caribbean strengthen the economy in both rural and urban sectors. Women in rural areas strengthen the economy by participating in related and non-related agricultural activities to ensure food security and financial progress (Oxfam, 2010). Haitian women, in particular, are great supporters of farming and the local market because they supply agricultural products to the local markets (Oxfam, 2010).

Several other published journals demonstrate the degree of participation in agriculture for Caribbean women (Dixon, 1982). For instance, in Cuba there has been interesting research conducted on the role of women in the Cuban cooperative agriculture in connection to recent changes in political economy. Other countries in the Caribbean such as Barbados, Grenada, and Trinidad describe the involvement of women in agriculture. Momsens particularly (1993), in his comparative analysis of women in farming, demonstrated big shifts that happened in the eastern Caribbean agriculture (Arizona State University, n.d.). According to the FAO (2003), females constitute a substantial part of the total agricultural workforce, as single food producers or agricultural labors, and that around two-thirds of the female workforce in developing economies participate in agricultural work. Caribbean women are highly active in the production and marketing of local food for family consumption and contribute to regional export trade of food, buying directly from the field and shipping agricultural products to adjacent islands (García, 2006).

Haitian women plant and maintain gardens, take care of family, provide food, and procure other household needs through their earnings from crop sales (Oxfam, 2010). They are also the dominant actors in domestic food markets, at both the wholesale (Madamn Sara) and retail (marchande) levels (Oxfam, 2010). In Haiti, 40% of women are active in agricultural

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production (Oxfam, 2010). However, the Haitian women, despite of their role in agriculture, face many challenges such as discrimination, education, healthcare, political, and violence problems (Urrutia, Merisier, Small, Urrutia, Tinfo, & Walmer, 2012). In Haiti, young girls are more likely to drop out school than young boys. The young girls work as house cleaners when their parents cannot pay their school tuition fees (WomenOne, 2015). Haitian girls are also more likely to start school later than boys (WomenOne, 2015). The average Haitian girl only attends school until they are seven-years-old (WomenOne, 2015). Studies show that girls who do not have the opportunity to go to school tend to have more children, live a life of poverty, and face domestic violence (Hobcraft, 1993).

Participation of Madan Sara in Agriculture in Haiti

Madam Saras refer to women who go to different regions of the country to buy agricultural products to sell in local markets. Those women usually travel by trucks (Hossein, 2015) carrying different types of goods: vegetables, beans, corn, fruits, eggs, livestock (chickens, goats, pigs, turkeys) and other imported products from other countries like the Dominican Republic (Hornbeck, 2011). Jacmel and Kenscoff are two areas in Haiti that have a great percentage of Madam Saras. The Madam Saras routinely work long hours during the day, starting very early in the morning in order to prepare their children for school (if they go to school) then, travel to different locations to buy agricultural products to sell at the market. They usually come home late in the evening depending on the market sale or spend several days away from their homes and families. They also are resilient women, capable of raising their children and giving them proper family education. Many of them are widowed – their husband has either died or left the family for other motives such as work, separation, and family economic issues- and are the only workers in the family. Some of the Madan Saras who still have their husbands

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living with them support their husbands financially (Hossein, 2015). For those who are economically stable, they hire someone to take care of their children. However, as the children get older they take care of themselves (Hossein, 2015).

The Madan Saras pay tax for the space where they sell their products. The tax goes directly to local authorities (Casecs, Asecs) who are in charge of cleaning the market and keeping the merchants' goods in storage (warehouse). Some of the Madan Saras take loans from private banks, microcredit with high interest rates to run their businesses. Others work very hard by doing farming to save enough money to start their Madan Saras businesses, which sometimes takes a long period before they can accumulate enough money to start their businesses. In few cases, however, the Madan Saras who are financially stable establish informal associations to help other women who want to start a Madan Sara business (Duramy, 2014). They lend money to other women at very low or with no interest rate with no regulations and no guaranty (Mauconduit, Emile, & Paul, 2013). Haitian Madam Saras are considered middlemen although they do not make as much money as typical middlemen (Ezeilo, Soberón, Klum, & Asker, 2003). Their role in the economy distinguishes them as important actors in the public and private sectors (Craig, 2001).

Haitian Women treated as Restavek

Nearly 70% of Haitian women have experienced domestic violence in their lives (WomenOne, 2015). In addition, young children in Haiti, especially young girls, are usually the victims of an exploitative practice known as "restavèk" meaning "stay with". The restavèk practice has a complicated origin in the country's society. It was initially established as a means for advancement for children born to underprivileged families (Cooper, Diego-Rosell, & Gogue, 2012). Traditionally, the system was established to offer opportunities to the most vulnerable

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people in society (Thorsen, 2012). Even now for the majority of Haitians, the restavèk practice is viewed as a tolerable activity. Approximately 300,000 Haitian children are restavèks and living as involuntary servants in the home of another family. Child-wellbeing activists universally describe the restavèk system as one of modern slavery (Haydocy, Yotebieng, & Norris, 2015). Research reveals the dark truth that restavèk children work long days with no salary. Moreover, few of them have little opportunity for education and leisure, and most of them are at risk for mental dysfunction because of inadequate time dedicated for amusement and lack of encouragement and love (Cooper et al., 2012).

Despite these problems, the restavèk practice continues to grow in rural areas among those who are living in critical conditions, especially for those who cannot afford to take care of their children. The parents in rural regions give their children for restavèk exploits in the hope that their children, in living with a rich family in the cities, may be able to get a good education and to have access to a greater life (Cooper et al., 2012). In contrary, children in restavèk suffer disproportionately from long-lasting diseases due to high workload, insufficient diets, and inadequate clothing (Restavek Freedom, 2017), and they grow up without the opportunity to go to school, which in turn increases the poverty and illiteracy problems in the country (Restavek Freedom, 2017).

Educational System in Haiti

The Haitian educational sector faces diverse challenges. One of the biggest challenges is lack of financial support (Hebblethwaite, 2015). The Ministère de l'Éducation Nationale et de Formation Professionnelle (MENFP) is a very bureaucratic system and leaders practice favoritism toward schools in urban settings. While 70% of the population live in rural areas, the MENFP dedicates only 20% for education in rural regions.

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Furthermore, some schools' curricula are old while certain schools are using new curricula distributed by the Haitian Ministry of Education. As consequences, the rural areas have low number of schools and unqualified teachers (Luzincourt & Gulbrandson, 2010). According to an education survey conducted by the World Bank (2002–2003), the number of Haitian public schools was only 8% and 92% were private and tuition-based. The economic situation of the country renders many families unable to send their children to school, which forces the parents to withdraw their children from school, especially girls. Certain families with many children have to decide which of them are going to school. This situation pushes the student to alternate the school year and contribute to high repetition rates. In addition, they pay high costs for uniforms, textbooks, and tuition fees. As a result, the parents become discouraged and the children disinterested in pursuing a career in education.

The number of student enrolled school from the age of six to twelve was 55% and only one-third of them made it to fifth grade (Luzincourt and Gulbrandson, 2010). Moreover, the Haitian school system dropout rate is high and the number of enrolled students is low because of the economic problems of the country (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2000), lack of materials, lack of competent teachers, poor management and organization, as well as language barriers. Collectively, this makes it difficult for youth, especially women, in rural areas to attend school. (USAID, 2016).

Language barriers remain a major constraint in the Haiti's education system. Since Haiti has two official languages (French and Creole) most of Haitians speak Creole and only the most privileged Haitians speak French. The textbooks are written in French and most of the public and private institutions require French as the spoken language. Since many Haitians speak only Creole, this limits their educational opportunities and ability to exercise their power within the

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society. This is viewed as a sign of discrimination in the society (Luzincourt & Gulbrandson, 2010). The complication of the educational system in Haiti has also created a disproportion between boys and girls (Luzincourt & Gulbrandson, 2010). Haitian girls are more likely to start school later than boys and on average only attend school until they are seven years old (WomenOne, 2015).

Impact of Illiteracy in Haitian Women's Lives

Researchers argue that the life of an illiterate person is more complicated than that of a literate person, and the illiterate people face more issues in their lives such as epidemics, hunger, disorder and humiliation (Thengal, 2013). For example, in the United States it has been estimated that roughly one in five adult workers is illiterate and has no more than fourth grade level of education, and among this group there are thousands of workplace injuries each year that occurred, primarily, due to their inability to read safety manuals in their work settings (Tovar, 2013). Illiteracy also has a direct impact on people's attitudes and health. According to Marcus (2006) patients with reading difficulties are more likely to avoid visiting doctors' offices and clinics due to their inability to understand paperwork. In Haiti there are limited educational opportunities for women, which explains why poorer women are limited to find and perform jobs within a household (Haines, 1997). Illiteracy remains also a major handicap to the Haitian youth. According to a study conducted by the United Nations International Children's Fund (UNICEF) (2013), the literacy rate for female youths aged 15 to 24 years from 2008 to 2012 was 70.5%. Illiteracy has been demonstrated worldwide to be a factor having impact in many ways on people's lives.

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Impact of Illiteracy on Women's Health

Haitian girls who do not have the opportunity go to school tend to have more children, live a life of poverty, face violence, and be physically and psychologically ill. Women who live in rural communities tend to stay home when they are sick (Allen, Leyva, Hilaire, Reich, & Martinez, 2016). As a consequence, the women suffer from different kinds of long lasting diseases, especially breast cancer, which remains a chronic disease. (Damuse, 2011). In fact, breast cancer is the most frequently diagnosed neoplastic disease in women around menopause which often leads to a significant reduction of these women's ability to function normally in everyday life (Kamińska, Ciszewski, Łopacka-Szatan, Miotła, & Starosławska, 2015). The breast cancer problem is common in Haiti but remains a silent disease due to the structure of Haitian healthcare system (Sharma, Costas, Damuse, Pierre, Pyda, Ong, Shulman, & Meara, 2013).

Breast cancer affects more women in Haiti than any other cancer. Roughly 831 out of every 100,000 women are diagnosed each year (Damuse, 2011). Although there is possibility for early stage breast cancer to be treated, most women in Haiti only come to a clinic when something is noticeably wrong often when the disease is in late stage. Lack of health knowledge and good education are some of the reasons why women are diagnosed with late stage cancer in Haiti (Kamińska et al., 2015). The actual breast cancer rate in Haiti is likely to become much higher every day (Damuse, 2011).

In addition, Haitian women are victim of several other health related challenges such as childbirth mortality, malaria, typhoid, and cholera (Dowell, Tappero, & Frieden, 2011). Most importantly, the childbirth mortality rate is very in high in Haiti, especially in the rural areas (Dowell et al., 2011). Haiti is highly placed in the western hemisphere in terms of maternal mortality. In Haiti, one out of every eighty women is dying either in pregnancy or childbirth, and

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child mortality is 59 out of 1,000 (United Nations Populations Fund, 2015). Furthermore, 73.8% of Haitian women get their prenatal care from traditional birth attendants, and 75% deliver their babies at home due to financial and geographical obstacles (Williams, 2015). Sixty-six percent of those women are either farmers or housewives and only 68% of them receive a primary school education (Williams, 2015).

Struggles of Haiti's Healthcare System

The Haitian healthcare system is suffering (Ekine, 2013). Many of the Haitian hospitals lack proper healthcare equipment and infrastructure to provide health services (USAID, 2017). Most clinics in the country were destroyed during the 2010 earthquake (USAID, 2017). The population relies mostly on the support of external health partners such as non-profit health organizations, Doctors without Borders, and the Cuban Partners to receive healthcare (Ekine, 2013). The public hospitals cannot provide adequate healthcare service because of financial constraints (Elkine, 2013). The Haitian State University Hospital (HUEH) known as the first public hospital in the country, is in a terrible situation because the Haitian authorities allocate very little funding for the hospital to function while the government authorities focus more on politics instead of planning for a better healthcare system (Ekine, 2013). The healthcare budget represents only 10% of the national budget, and there are only a few doctors for every 10,000 people (USAID, 2015).

In the rural communities, the healthcare system is worse. Medical facilities are understaffed and lack medical supplies to serve the people. Most of the people in rural areas cannot afford to go to a hospital, and they prefer to stay at home (Goins, Williams, Carter, Spencer, & Solovieva, 2005). As consequence, many people have lost their lives when they are sick. For instance, the cholera outbreak killed many people due to water contamination

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(Lantagne, Balakrish Nair, Lanata, & Cravioto, 2014). The country lacks sanitation systems, public latrines, and clean running water (Ekine, 2013). According to Simmons (2016) over 40% of the Haitian population do not have access to basic healthcare and food services, and only 45% of children from age 12 to 23 months have received immunizations.

State of Healthcare Training in Haiti

In Haiti community health workers (CHW) are responsible to deliver healthcare training to the people in rural areas (Knettel, 2017). However, the country, due to its high poverty level, faces a shortage of health CHW (Knettel, 2017). The few CHWs that are available have financial, material, and logistical difficulties that limit them from providing services in the rural communities (Knettel, 2017). Moreover, the majority of healthcare training programs in the country are not sustainable because most training programs are led by non-natives of Haiti, who are unfamiliar with the Haitian culture, and are in the country on a very short-term basis (Knettel, 2017). In addition, the rural areas do not have skilled health professionals, and there are only 26% traditional skilled birth attendants in the country to assist women delivering their babies (USAID, 2008). The Haitian birth attendants receive 12 months of education from Haitian instructors and are supervised by international nurse midwives (Virginia Commonwealth University, 2014). The traditional birth attendants known as midwives are crucial to rural communities (Zickler, 2014) since there are a very limited number of midwives in Haiti (Toner, 2012). According to the World Health Organization, there are 201 nurses and 2.5 doctors for every 10,000 people (Duramy, 2014). In several rural areas in Haiti, people receive healthcare information from local CHWs who work for local and international health organizations (Fonkoze, 2017). The CHW's assist the rural residents with identifying signs of diseases and refer them to the nearest city hospital. Most of the residents rely on their support to receive

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healthcare information such as information for pregnant women and mothers who breastfeed their babies (Community Health Initiative Haiti, 2017). The CHWs also provides extension education for school children about sanitation practices to stay healthy (Community Health Initiative Haiti, 2017).

Role of Haitian Women in Community Development and Empowerment

Haitian women play a crucial role in community empowerment (USAID, 2015). The Haitian women work in close collaboration to defend other women victims from various situation such as battery, rape, and other form of violence (Ravitz, 2010). According to Bell (n.d.) women are very instrumental in working on development, education, decentralization, and health because they will pay more attention to the needs of the Haitian society (Bell, n.d.). Furthermore, Vilardo (2013) declares that women in political jobs have the capacity to change the whole society with the support of their work:

Women in political power and in decision-making positions have the highest capacities to influence the political, legislative and economic agenda... to advance their rights. [But] it is necessary to have an implementation law that indicates in detail how to go forward for the concrete realization of Constitutional Article 17-1, or to include this disposition in the new electoral law.

There are many women associations in Haiti that work with different social situations (N'Zengou-Tayo, 1998). Some groups focus on policy to help respect women's rights (Ravitz, 2010). Myriam Merlet, Magalie Marcelin, and Anne Marie Coriolan were three pioneers of the country's most popular organization that was dedicated to fighting for women and girls' right to be respected (Ravitz, 2010). Some women organizations are known to be first responders in

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natural disasters (Ferris, 2008). They use their expertise to help save lives in the case of an emergency. For instance, OFTAG is a women association with 3,200 members that provided support to families who were affected by the earthquake and hurricane Mathew in Haiti.

Since Haiti is a developing country (Oxfam International, 2010), people's social and economic status differ from each other, especially among Haitian youths (Diaz, Trapp, & Feldman, 2008). There are women associations that focus on elevating young Haitian women (Bureau du Secretaire d'Etat a l'Integration des Personnes Handicapees, 2016). The Haiti Adolescent Girls Initiative (AGI) is an association run by Haitian women that assist female youth ages 17-21-years-old (World Bank, 2014). The AGI association helps assist youth females with job connection in post-secondary school to improve their lives (World Bank, 2014). The Haitian women are also called "Poto Mitan" which means "Center pillar" due to their function in the Haitian family and the economy (Michel & Bellegarde-Smith, 2006). The women are responsible for market transactions, management of the family budget, cooking, and care of the children (Lacet, 2016). Other research describes women as the base of family life and responsible for taking care of children rejected by their fathers (Lacet, 2010), assisting their parents, and tolerating the violence that breaks their families (Duramy, 2014).

Relationship between Women's Health and Agriculture

Agriculture is the strength of the country's economy (World Bank, 2013). Allowing domestic agriculture the opportunity to thrive would solve many problems in the country. Specifically, 60 - 80% of the Haitian population would have jobs, the rural to urban migration would decrease, and food import would diminish (Bell, 2013). In a country where 2.4 out of 9 million are food-insecure, solving the food issue is crucial (Bell, 2013) for combatting the

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malnutrition and related chronic nutrition health problems that are ravaging 9% of children less than five years old (Bell, 2013).

Research shows the importance of women in the country's agricultural production (Bell, 2013). Haitian women have been highlighted as a key factor in food sovereignty in Haiti (Bell, 2013). Many Haitian women organizations have debated the issue of food security and food sovereignty (Bell, 2013). Those organizations support the battle against hunger and neoliberal farming rules and construct the force and right of the women farmers (Bell, 2013).

However, a great majority of women in rural areas, despite their important role in the function of agriculture, are challenged by various health issues (Mellegard, 2015) which has negative impacts on the agricultural system (Hawkes & Ruel, 2006). According to several studies, health and agriculture are interrelated to each other (Hawkes et al., 2006). Good health contributes to high level of agricultural production (Hawkes et al., 2006). While the women in rural areas represent the strength of agriculture, their health is affected by many challenges (Rural Health Information Hub, 2002-2017). The women's health issues in turn may affect the crop production in the area (World Farmer's Organization, 2013) because most of them participate in planting, weeding, and harvesting of the crops (Oxfam, 2010). In addition, the women are responsible for trading the agricultural products from farms to the market (Hosseini, 2015). The women not only sell the agricultural products, but they also contribute to the country's economy by other means (Saint Lot, 2010), and their participation in the country's economy is accounted for more than 70% (Schuller, 2012). In 2015 Haiti ranked 145th as the largest export economy worldwide with \$1.5B of exported products and \$3B imported products (Massachusetts Institute of Technology [MIT], n.d.). Despite the negativity shown in export and import products, the women play a role of facilitator in both import and export of agricultural

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products (Council on Hemisphere Affairs [COHA], 2010). Haiti's neighboring country (Dominican Republic) exports many agricultural commodities such as eggs, chicken, salami, and hotdogs to Haiti (Roebing, 2009) and those trades are assured by women who travel to the border of Haiti and the Dominican Republic to transport the products to local communities (Roebing, 2009). Therefore, there the Haitian women's health has a strong connection to the country's agricultural system.

Chapter 3: Methodology

The purpose of this study was to examine the impact of women's health issues on agriculture production in Fondwa. The location and audience for collecting information are a group of women farmers in the community of Fondwa. The survey participants will be interviewed via Skype. Ten women will be participating in the interview. Two women will be interviewed every day. One interview in the morning and one in the afternoon. With two interviews a day, both the interviewer and participants will have more time for the interview because some of the participants live far from the meeting site. The interview is in English and Haitian Creole to facilitate communication between the researcher and the participants. I will not be able to travel to Haiti due to new travel regulations adopted by the United States Immigration Services. There will be a person in place to guide the interview participants. Some sections of the interview transcribed will be translated to English during the data analysis process to help non-Creole speakers understand the study. Six research questions are at the base of this study. There are also eight interview questions that can help answer the research questions. (See appendix A).

Rationale for a qualitative case study design

This is a descriptive single case study (Ying, 2003) of ten women farmers who participate in agricultural production in Fondwa. These women farmers practice farming during the cropping seasons in the year. This case study uses real life experiences of the women farmers in Fondwa to understand the phenomenon (Yin, 2003) between health issues and agricultural production. The qualitative approach was selected for this research for many reasons. Generally, a qualitative study method is very helpful in understanding the meaning that research participants give to their lived experience (Bogdan & Biklen, 2003; Denzel & Lincoln, 2000), which will

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allow researchers to explore feelings that are hard to obtain through usual research methods (Strauss & Corbin, 1998). Furthermore, qualitative study allows researchers to get an in-depth investigation (Stake, 1995) by using the question that begin with “how and what”. This allows the researcher to get as many details as possible from the phenomenon in question (Patton, 2002; Seidman, 1998). This study will explore how women farmers’ health issues influence farming activity in Fondwa. Their input is necessary for the comprehension of the phenomenon. Each participant will be examined individually. The case study will give access to the investigator to analyze the contextual conditions (Yin, 2003). This case study will use different strings of information to analyze the data (Yin, 2003) in order to find a meaning to the phenomenon.

The Research Design

For the purpose of this thesis research, the researcher relied on the “case study concept” designed by methodologists Merriam (1988), Stake (1995), and Yin (2009). Stake defined case study methodology as an inquiry technique in which the investigator investigates in detail a program, activity or people. Knowing that time and activity might be a limitation to cases, researchers may use a variety of procedures to collect data in a specific time frame in referring to the “rubber band” analogy of Maxwell (2005).

The case chosen for this research is a group of ten women farmers in the community of Fondwa. These women are members of the Association of Peasants of Fondwa (APF) and each of these women are from different areas in Fondwa. These women are full-time farmers and crop marketers who face health issues in the community. The age of the participants must be between 35 to 50-year-old. In-depth interviews will be conducted with each participant separately (Yin, 2003). The length of time for each interview is approximately 50 minutes. The participants will receive a consent form that provides instruction about the interview process. The consent form

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will be written in English and Creole. After reading and agreeing on the consent form, they will sign the consent form to participate in the interview.

Research site

Fondwa is an area where agriculture is the dominant activity to generate money. Fondwa is divided into 9 areas: Piton, Viciere, Falaise, Tombe gateau, Obbe, Roche-a-Pierre, Belloc, Toucofi. Liberte, Capin. In each of those areas, the women are deeply involved in crop production and marketing. The areas where they live are not accessible to vehicles, and the farmers must walk long distances to sell the crops they produce.

Participants

Purposeful sampling (Patton, 2002) will be utilized to choose the participants for the interview. The participants will be picked based on the “purposeful selection”, which Maxwell (2005) defines as “a selection of strategy in which particular settings, person or activities are selected deliberately in order to provide information that can't be gotten as well from other choices” (p. 88). The selection criteria is based on the woman's capacity to provide information to understand the phenomenon. In particular, the participating women selected for this interview will be farmers and merchants at the same time. They will provide detailed information to understand the phenomenon (Esterberg, 2002; Merriam, 2002). Eight women will be selected in eight different locations and two women in the area with the largest amount of people for the interview.

Data Collection

In this study, data will be collected through interviewing the women farmers in Fondwa. I'm planning to interview each woman twice. The first interview is about data collection, and the

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second interview with the women will help make clarification on certain information from the first data gathering. The interview, as the main source of data collection, first explores the participants' perceptions about a phenomenon and makes sense of their lived experience (Kvale, 1996, p. 105), second, has bolder details to facilitate a better analysis (Merriam, 2002), and third, facilitate triangulation of data collected to augment the reliability of the research findings (Emerson, Fretz, & Shaw, 1995; Merriam, 2002; Stake, 1995). Before the interview process, the researcher will have a meeting with the interview participants. The purpose of this meeting is to give the participants more details about the interview. The researcher will build relationships with the participants and give them more time to decide whether to participate in the interviews. Once the participants agreed to be a part of the study, the data collection will begin. The in-person interviews will be audio recorded and conducted individually to allow more time to the participants as well as the participants' convenience. The researcher will also take handwritten notes for each interview to keep track of important points or thoughts, which the researcher may need later in the analysis process. The data will be gathered in two time frames. After the first interview round, the researcher will conduct a preliminary data analysis. Then, a second interview will be conducted with the participants to clarify themes.

Preliminary work

To support the development of the research protocols, the researcher creates a priority set of recommendations. The purpose of the recommendations is to consider something that needs to be explored within the scope of a research (Yin, 2003).

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Data Analysis

The focus of this descriptive study (Yin, 2003) is to acquire a full understanding of the importance of Haitian women farmers in agriculture and the impact of their health issues on crop production in Fondwa. To analyze the data, the researcher will utilize the six steps of Creswell's (2009) data analysis; 1) The researcher will review all radio recordings from the interviews and transcribe them into a word document 2) The researcher will read all the transcripts to become more familiar with the information 3) The researcher will start with the coding process of the transcripts and arrange the codes segment sentences into categories. Then, the researcher will name the categories based on the information provided by the participants. 4) The researcher will utilize the codes to describe the participants to categorize them for data analysis. Then, the researcher will examine the common themes and group all the different themes into a general description for the case study 5). Then, the researcher will go further to demonstrate how the description of these themes will fit into the qualitative narrative. Lastly, the researcher will interpret the meaning of the data and do a write-up of the findings.

Chapter 4: Findings

The purpose of this study was to investigate the impact of women health issue on agricultural production in Fondwa. The location for conducting this research was Fondwa and the audience for investigating this phenomenon was a group of ten women farmers from the community the area of Fondwa. The six research questions were: 1) who are the women farmers in Fondwa? 2) What are the health issues? 3) How are the women farmers learning about potential issues? 4) How does participation in educational programs help women farmers address their health problems? 5) How do the current health issues affect the daily agricultural work of women farmers in Fondwa? 6) How do women farmers 'health issues economically impact their families?

The data gathering for this research involved a set of in-depth interview questions with ten women farmers in the community of Fondwa who farm and do agricultural trades. The interviews with the participants was conducted via Skype calls. Invitations letters and consent forms were sent to them via prior to the interview process. The interviews were recorded and transcribed for analysis. Thirteen major themes were found in the data analysis for this research. Research Question: Who are the women farmers in Fondwa?

Theme: Fondwa women are hardworking farmers.

Fondwa is a rural community village where agriculture holds the predominant economic activity. The Fondwa women participate in agriculture at different levels. Lola, a resident of Fondwa, stated that:

Le nou sou sezon travay la nou travay chak jou paske pritan an pa dire paske se yon mwa li dire pou prepare te yo pou plante. Sa pemet selon vale ou gen wap fe a, ou oblige

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travay chak jou pou kapab gentan prepare tout sa ou gen pou pepare pandan mwa a pou w ka gentan abouti yo.

(When we are in planting season, we work every day because the spring season lasts only one month and you must be prepared for planting crops. That allows you, based on the amount of land you want to prepare, to work every day to have enough time to get yourself ready for the month and to accomplish everything.)

Lola expressed the time and passion devoted to crop production in Fondwa. However, lack of time represents big challenge for Lola as the land preparation undergoes different processes like tilling, and cleaning. She also expressed her concerns about the time needed to prepare the lands for planting seasons. In Fondwa, the agricultural production is done manually because the farm lands are located in high remote locations and due the small size of the land areas each family owns. According to Norris (2008), Haitian farmers practice small scale farming which mostly characterized by an agriculture of subsistence. Moreover, due to economic situation of the country, the farmers practice traditional farming rather than using modern technology in agriculture (Norris, 2008). Regardless of these problems, the women farmers work very hard to meet the deadline of the planting seasons as agriculture is the main activity that generates money for the women farmers in Fondwa.

In Fondwa, the women are also in charge of organizing the planting process, they plant different kinds of crops such as corn, beans, plantain and other crops. During drought seasons, they carry water on their heads to water the gardens and the springs are located miles away from the gardens. Denise, one of the participants mentioned that:

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Ebyen travay ki gen rapo ak agrikilti m konn fe, mwen konn plante pwa, mayi, bannann, Malanga, yanm, epi eksetera. Plis fwi natirel yo. M konn itilize dlo pou m wouze se pa tout le ki gen lapli, m konn itilize dlo pou mm wouze jaden an.

(So the work that is related to agriculture that I do, I plant beans, corn, plantain, yam, and so on. In addition, I plant natural fruits. I use water to irrigate the gardens because we don't have rain all the time.)

These women farmers face many agricultural challenges in the area like drought, erosion, and pest problems. Despite of environmental issues, the Fondwa women farmers, as explained by Denise, remain resilient and are always ready to perform their agricultural tasks. When the crops are ready for harvest, the women are responsible to collect, dry, and store the products.

According to Seli, “Le mwen fin rekolte jaden yo mwen sere enpe epi mal van res la nan mache”. (“When I finish harvesting the crops, I store and I go to the market to sell the rest”). In post-harvest, the women manage the seeds where they save a portion for the next season and sell the rest to earn money. Haitian women are great contributors to the farming system and the local community because they supply agricultural products to the local markets (Oxfam, 2010). The Fondwa women farmers sell their crops in three different local markets, which are *Tombe-gateau*, *Bouchi*, and *Decouze*. These market sites are far away from the women's houses and they must leave their houses early in the morning with mules loaded with crops from their gardens to arrive at the market on time. Arriving at the market, they sell their products and buy other necessary agricultural products for their gardens. As mentioned in the literature, women are the center pillar of crop production in developing countries (Uisso & Masao, 2016).

In Haiti, women support agricultural production and they help increase food production within the country. In addition, the women help in the marketing of agricultural products in

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different markets within the country (Hossein, 2015). In Fondwa, the women perform agricultural businesses and are called Madan Sara: “Mwen fe komes Madan Sara pou mwen pran swen pitit mwen. Le se pa zawot nan jaden mwen pote. Se nan machete mwen achete pwodwi”. (“I do Madan Sara trade to take care of my children. When I don’t bring products from my garden, I buy products from the markets”). *Madan Sara* is the most popular business for women farmers in Fondwa. This type of business helps the women market the crops produced from their own garden, and they buy other diverse agricultural products from other markets. As mentioned by Hossein (2015), the *Madan Sara* women travel on trucks in different corners in the country to buy agricultural goods.

Travay ki gen rapo ak lagrikilti, gen de fwa lapli pa tonbe, le nou jwenn ti rekot nou vann nou pran ti kob la fe ti komes madan sara. Le w fe ti komes la ou pa jwenn randman sou li gen de fwa w achte ti komes la ou pedi sou li gen de fwa tou ou jwenn yon ti bagay pou w ka sove lavi timoun yo.

(The work that is related to agriculture that I used to do, sometimes it does not rain, when we find agricultural products, we sell them and do Madan Sara business with it. When you trade your product, sometimes you make a profit and sometimes you do not and sometimes you make a little profit to save the lives of the children.)

Mimose, one of the participants, highlighted the challenges that she has been facing as a crop producer. However, despite of the production complications, she does not surrender because she is a responsible mother. Mimose travels long distance to market the crops that she produces to generate money for her family. Mimose explained, “Pafwa mwen leve bone, mwen mache anpil ak chay sou tet mwen, epi mwen monte machine domi deyo, pou mwen kapab jwenn lajan pou mwen edikasyon timoun mwen”. (“Sometimes, I get up early, walk a long distance carrying

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heavy loads, travel on top of trucks and sleep outside to find money to educate my children”.)

Mimose described the sacrifice that she makes as merchant to educate her children. She carries heavy loads for long hours and stays away from her family for several days. She is also demonstrating the strengths of Haitian mothers.

Theme: Chief of the family

Women in Fondwa work hard to support their family. They are responsible for providing food in the house, as well as educating and dressing their children. They do all kind of related agricultural activities to earn money and support their family. Dina, a farmer who lives in Fondwa, declared that:

Mwen sipote fanmi m paske ou konnen se mwen menm ki manman. Pwoveb Kreyol la di yon manman nan yon fanmi se li menm ki poto mitan lavi a, ebyen mwen sipote yo, mwen travay, mwen bayo mange, peye lekol pou yo, m abiye yo eksetera.

(I support my family because you know I am a mother. There is a Creole saying that says women are the center pillar of life, so I support them, I work, I feed them, pay their school tuition, dress them and so one.)

In this excerpt, Dina, as a mother, explained about her responsibility in the family. She knows her importance in the family as being a mother and what that means for the children and her husband. She will do any work to support her children. In the Haitian culture, women play a vital function in the family (Bell, 2013).

The Fondwa mothers, not only do they provide food in their family, but also provide parental education to their children and ensure that everything in the house works very well. They are a mentor and participate in decision-making process in their family. Lola states, “Se mwen ki leve pitit mwen, bayo bon jan ledikasyon, montre yo sa ki bon, epi koman pou yo viv

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ak te yo ak moun ki nan antouraj bo kote yo. ("I raise my children, give them good education, show them what is good, and how to live their lives".) Lola, another participant, gave her opinion on the importance of mothers' education in the lives of the children. The Haitian mothers are described as a mentor in their family. Lola believes that mother's education greatly contributes to the children's well-being and allows them to live in harmony with neighbors. As described by Hossein (2015), the Haitian mothers are strong women who have the capability to raise their children and give them correct family education. The mothers in Fondwa believe that parental education is an important piece which completes education that their children receive in schools

Research Question: What are the health issues?

Theme: Types of health problems and their sources

In Fondwa, the women farmers have different health complications that come from different sources. The women who participated in this interview raised several kind of health problems. Seven participants testified to have the same health problems and among those people Anita declared that:

Pafwa mwen konn malad, pafwa se fyev mwen konn genyen, pafwa se tet fe mal mwen konn genyen. Pafwa tou mwen konn genyen yon depresyon tou. Pafwa tansyon m konn monte two wo pafwa li konn desann two ba. Le maladi sa yo pranm yo aji sou mwen anpil mwen oblige kouche.

(Sometimes I am sick, I use to have fever, sometimes headache and fatigue, sometimes my blood pressure goes too high and or too low. When I have these health issues, they have a big reaction on my body, and I have to lie down.)

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Anita explained the many health problems that she faces in her life as a farmer, and the impacts of those health issues on her body. The health issues listed above are very common in rural areas and they are resulting from different sources such as the environment, water, and food that people in the community consume.

Theme: Health issues related to environmental pollution

The Fondwa farmers complained about trash problem as one of the major causes of health problems in the community. One of the participants said:

Bon akoz jan ou sevi ak tet ou anvironman epi fatra gen anpil bagay tou ki ka fe w malad. Plis deche bagay gazyez bagay plastic ou pran yo ou simen yo epi gen yon moun ki paret ki diw ooh non ramase yo; sa w fe ou pran yo ou brile yo vreman li pa bon pou sevo w li enfekte sevo w li pa bon pou ou sevo ou. Siw jwen yon moun ki bon konesans ki diw li pa bon non, wap fouye yon twou wap met deche sa yo apre sa le twou sa fin plen ou kapab bouchel.

(So the way you treat yourself, the environment, and the trash there are many things that can make you sick. In addition, all the Styrofoam plates that are spread everywhere; and sometimes people show up and says ooh noo... pick them up and burn them, and it is not good for your health, it affects your health, it is not good for your health. If you find somebody who is knowledgeable and can tell you that is not good, you will dig a hole and you will put all the Styrofoam plastics and bury them.)

The Fondwa women believed that the health issues are directly related to environmental pollution resulting from the garbage disposal. According to the women, trash remains a major concern for people in Fondwa as well as other rural communities. The participants mentioned

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lack of training as one of the reasons that aggravates the pollution problem in the community of Fondwa.

Lack of health education remains an obstacle that prevents people in the rural communities from getting health benefits. As a result, training remains the top priority for the farmers. Most of the health trainings conducted in rural areas are led by international health organizations (Knettel, 2017). Janet said: “Byen ke nou pat gen chans ale lekòl pou nou konnen koman pou nou jere fatra sa yo, men si nou ta jwenn yon ti fomasyon li tap vreman ede sou kijan pou nou arrive jere fatra say o”. (“Although we did not have the chance to go to school to know how to manage the trash, but if we could find a little training, it would be very helpful to us for the management of the trash”.)

The women highlight the illiteracy problem as a major obstacle that prevent them from solving some basic problem within the community of Fondwa. The women education problem in the rural areas is directly related to resource problems and the country's educational system. According to Luzincourt & Gulbrandson (2010), the Haitian ministry of education gives very little attention to the people in rural communities even though 70% of the Haitian population are located in the rural areas. Research shows that lack of proper education of health knowledge were some of the reasons why women are diagnosed with late stage cancer in the country (Kamińska et al., 2015). Many people in the Haiti and in rural areas are often diagnosed with long lasting diseases (Damuse, 2011).

Theme: Health issues related to weather conditions and air pollution.

The weather problem and air pollution are great contributors to people in the rural areas. One the participants stated that:

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Bon m remake sa ki fe nou malad, gen pafwa se le gen imidite, van, pousye, cyclone paske nou mache anpil. Le nou domi deyo konsa, seren konn bat nou, ou konnen se nan lari nou domi pou ret vann zarot nou, sa konn pemet nou malad konsa le nou pase nwit lan.

(What I notice that makes me sick sometimes is humidity, wind, dust, and hurricane because we walk a lot. When we sleep outside, we use to get wet in the dew, you know we sleep in the street to sell our products, which makes us sick when we spend the night outside.)

Bad weather is great contributor to the women's health issues in the area. The women farmers perform a lot of outdoors activities, which expose them to humidity. They work in the gardens and travel long distance to go to the markets under difficult weather conditions. The agricultural and trade activities are intense in the rural communities and the women must spend several days outside of their dwellings to sell the agricultural products. According to Hossein (2015), the Haitian women traders work long hours every day and stay away from their families. Another participant stated that, "Ooh yon lot bagay ki vreman enpotan, lafimen dife se youn nan bagay ki fe anpil moun malad tou". ("Ooh another thing that is really important, smoke from blowing fire causes a lot of people to get sick".)

The women reported that smoke cause health problem in the area. People in the rural areas use wood as main cooking fuel sources (McClintock, 2003). The woods used for cooking generates a lot of smoke, which people inhale while blowing fire with their mouths. Unlike developed countries, the farmers in rural communities do not have resources needed to live. According to the Department of Health (2016), inhaling fire smoke causes severe lung damage and raises other

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issues such as eyes and throat infection and triggers severe headache. The women previously mentioned that headaches are one of the main issues that people in rural communities face.

Theme: Health issues related to water contamination

In Fondwa the peasants complained about the issues that they have with the water quality in Fondwa. Anita stated that: “ Epi pou konprann gen dlo ou kapab bwe, epi dlo a pa trete, li gen mikrob, ou kapab bwe l. marengwen bagay say o pemet gen malady ki kapab antre sou ou.” (Drinking untreated water that has microbes can make you sick. Mosquitoes can allow diseases to enter as well.) Water quality is a concern in rural communities. According to the participants, they believe that untreated water is a great vector for spreading diseases in the rural communities of Fondwa. This is due to a number of factors including high soil erosion, spring and stream waters are polluted with debris, which create a negative effects on the estuary and coastal environments and people's health (Colindres, Jain, Bowen, Mintz, & Domond, 2007).

Timoun nou yo pafwa soufri maladi vemin, kote ke vant yo anfle. Le nou ale kay dokte nou fe yo egzamen yo di nou se ve yo trape nan dlo ki pa trete ki fe yo sa. Se men tout pou lot moun ki nan lot zone avwazinant yo, gen kek ka kolera ki anregistre e sa gen rapo direkteman ak dlo.

(Our children sometimes suffer from worms where they have swollen belly. When we go to the hospital, we do exam, and they told that they children catch the parasite from untreated water. It is the same for people in neighboring areas, there were some cases of cholera and this come from directly to water problems.)

Clean water is highlighted as a big challenge for the Fondwa residents as they do not have proper water supplies for treatment which facilitates more health problems in the communities.

According to Dalila, Conde & Christensen (2008), contaminated water affects the health of

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ninety percent of children in the country. Furthermore, the most recent cholera outbreak contaminated the health of more than 388,950 Haitians and killed about 5,000 people. The Cholera epidemic comes from directly from contaminated water.

The water raises also other issues in the community according to the participants. One of the participants who suffered from malaria believed that it came from mosquito bites and she also believed that the mosquitoes are attracted by dirty water:

Le mwen te malad la mwen te gen anpil marengwen kite mode m, e le mwen te ale kay dokte li te di mwen m fe malaria epi li te di mwen se marengwen kit e ban mwen li.

Mwen pat itilize moustike mpanse se yon gwo pwoblem nou genyen nan kominote nou.

(When I was sick, I was bitten by mosquitoes. When I visited doctor, I was told that I suffered from malaria and the mosquitoes were the main vector of the malaria. I did not use mosquito net and I think this is a big problem we have in our community.)

Based on the explanation provided, clean water remains an important need for people in the community. Water is very in vital people's lives and at the same times I can serve as a vector for diverse diseases.

Theme: Poor infrastructure causes people to be sicker

According to people in Fondwa, infrastructure problems prevent them from moving from one place to another when they are sick Anita said that, "Mwen pansè si nou te gen bon wout, sant ak ekipman sante, moun pa tap rete malad nan kominote a. yo tap gentan kouri lopital al lopital le yo santi yon bagay nan ko yo". (I think if we had good roads, health centers and supplies, people would not live with diseases in the community. They could run into the hospital if they feel something.) Anita explained that the infrastructure is a major concern for the Fondwa farmers and it influences the residents healthcare decisions. Certain farmers do not have access

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to public transportation. They must walk long distance to reach the hospitals. According to Anita, people in the area tend to stay at home when they are sick because of the distance of their houses to the hospitals. People live in scattered places within the community and going to hospital appears to be difficult for them. Poor infrastructure within the rural communities is the cause of major health issues in the rural communities.

Research Question: How are the women farmers learning about potential issues?

Theme: Support of tradition medicine (Tree doctors) and hospital

Due to many factors such as transportation, lack of medical infrastructure, and distance of the hospitals, the Fondwa farmers seek information locally. The participant Lauri, stated that:

Men nan zone kote m rete a le m pral lopital li pa fasil pou mwen se sou kad pou yo pote m pa gen machine lari pa antre. Si w jwenn kad la se fose pa menm gen rout menm pou moun pote moun; 4 moun ou 6 moun ki pote moun sou kad.

(So in the area where I live, when I go to the hospital, it is not easy for me. Four or six people have to carry me on a stretcher. There is no road for vehicles and there is not even good a road for people to walk when carrying somebody on the stretcher if you find a stretcher.)

Lauri expressed her frustration about going to the hospital when she is sick. She worries about transportation problem. The roads are not paved and it takes efforts to go from one place to another in the community. In the rural communities, the peasants use stretchers to transport people to hospital. Health supplies in the rural in are difficult to have access explained Lauri. Previous research conducted in Haiti reports that many women farmers/traders live far from the public roads and have to walk several hours to reach the market for trade or a clinic for primary healthcare (Dankelman, & Davidson, 2013). Anet stated that:

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Ou gen yon klou kap fe ou mal, yon tet fe mal grip, mwen konn pran fey m bouyi m bwe pou w ka gen yon ti sante; oubyen mwen konn al nan manyen sim ta santi yon ti bagay ap fem mal pa anndan e mwen pata konn sa li ye. Gen de fwa se pa sou dokte Selman pou w rete gade paske ou gen de fwa ou konnen ou pa gen kob pou w al kay dokte epi distans yo lwen tou. Si se pa yon maladi ki two grav ou al kay yon medecin fey li gade ou epi li kase fey ba ou bouyi remed.

(You may have a pimple in your face, headache or cold, I use to take tree leaves, I boil them for healing; or I can go to a tree doctor to have a massage if I feel a little pain inside of my body and do not know what it is. Sometimes, you do not have to put your hope only on doctors because you may not have money or the distance is too far to go to the hospital. If it is not a complicated health problem you apply traditional medicine.)

Based on the participants' information, the women farmers in Fondwa apply traditional medicine or visit a tree doctor for simple health issues. Traditional medicine plays a big role in the Haitian society, especially in the rural communities. Traditional birth attendants are an example where traditional practices are continuing to be used. According Williams (2015), 73.8% of women use traditional medicine and are assisted by a birth attendant during their pregnancy period. The participants also pointed out the farmers seek local health support because of their financial problems. Haiti, financially, is the most unstable country in the western hemisphere (Oxfam, 2010) and it is difficult for people, especially those in the rural communities, to pay for healthcare in hospitals.

The women in Fondwa seek health from the hospital based on the severity of their health condition. Senez who lives in the area mentioned that:

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M fe radiografi, sonografi, egzamen m fe tout bagay sa yo apre sa yo we kisa m genyen yo ban mwen medikaman pa rapo ak maladi a pou l ka chase maladi a sou mwen. Le mwen te fe tifo malaria m t fe 4 mwa lopital etene lopital epi m te fe 4 mwa ap swiv. Egal la a 8 mwa m fe ap swiv dokte paske se yon malady ki grav li te ye mwen pat kapab rete lakay mwen te oblige ale kay dokte.

(I do radiography, sonography, and other exams. Then they see what I have, and they give me medication based on the type of health issues that I have and cure for the disease. When I had typhoid-malaria, I spent four months in the hospital and four in follow-up, which means I spent eight months in total in the hospital because it was serious diseases. I could not stay at home, and I had to go hospital.)

Women in Fondwa go to the hospital for more complexed health problems that go beyond their basic health knowledge or experience. Based on literature, people in the rural communities are usually diagnosed with late stage diseases (Damuse, 2011) because they visit doctor only if they feel their lives threatened. Several women in Haiti have been diagnosed with late stage of cancer problems (Damuse, 2011).

Research Question: How does participation in educational programs help women farmers address their health problems?

Theme: Educational programs provide the women with health information.

According to the participants, educational programs play a significant role on their healthcare decisions. The educational programs provide information to women about some common diseases and their symptoms. This information helps the women in the community to

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evaluate their symptoms and decide whether they have severe or simple health problems. Jana testified that:

Pafwa gen kek moun ki konn pase nan zone nan e sitou pafwa nou konn patisipe nan kek fomasyon jwanite. Li konn esplike nou ki siy ou kapab we sou kow ki kapab fe w konnen ki malady kap vini. Kounya a la a janw santi sentom nan paret sou ou ou we si se kolera, si se vant fe mal, si se fyev jon oubyen malaria ou tifoyid, eksetera.

(So, the steps I use to know what kinds of health diseases that I suffer from, sometimes health promoters come in the area and sometimes we used to participate in Johanniter training. They explained to us what signs you can see on your body that allow you to know what kind of disease that is coming. Know the way you feel the symptoms, you know if it is cholera, abdominal pain, fever, typho-malaria, and so on.)

Educating the women on health issues can save their lives and empower them with the tools they need to fight diseases in the region by sharing their knowledge with other people in the community.

Mwenpanse program edikasyon vreman bon nan kominote a paske li ede nou gen konesans sou pwoblem sante. Nou swiv yon fomasyon sou kansete nan kominote a ke yon gwoup ki rele enfimye ak enfimye fe nan kominote a. E mwenpanse sa se yon trebel inisiativ paske nou te gen moun ki mouri nan kominote a deja paske yo pat gen enfomasyon sou sa ki rele kansete a. men kounya a gras ak fomasyon nou pran, nou kapab santi le gen yon bagay ki pa nomal nan kou nou. Sa nou manke kounya a, se kote pou nou ale si tout fwa nou ta gen yon pwoblem nan ko nou.

(I think education is very good in the community because it helps us to have knowledge on health problems. We had a training on breast cancer in the community that a group

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called Nurse for Nurse organizes. And I think this is a very good initiative because we had people die from breast cancer because we did not have information on cancer. But right now, thanks to the trainings we have attended, we can feel when something is not right in our body. What we need right now, is where to go if we would have a problem in our body.)

The participants understand and value the importance of educational programs in the community. More lives would be saved in the community if they previously had educational programs in the community. In addition, the women showed a great need to map out the hospitals that are located outside of Fondwa that can help them during emergency. Educational programs will also support women in the community with referrals because many women in the rural areas do not know the location of the hospitals

Theme: Educational programs train more community health workers (CHWs) to assist women in the area.

In Haiti, the Community Health Workers (*CHWs*) are great needs in the rural areas. The women in Fondwa expressed needs for the *CHWs*. In the community, the women receive health training from international organizations.

Chak ane gen kek oganizasyon estranje ki vin nan zone nan yo fe fomasyon pou jeune yo ak kek granmoun. Fomasyon sa yo itil anpil paske le yo fome jenn yo, yap kapab ede moun ki nan kominote a pou si yo ta gen yon kesyon sou yon bagay yo pa konprann. E nou kwe nan fomasyon anpil paske lap kapab change anpil bagay nan komite a.

(Every year there some international organizations that come in the area to do training with youths and some older people. Those trainings are very useful because when the youths are trained, they can help people in the community in case they have something

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they do not understand. And we believe in education a lot because it can help us change many things in the community.)

The women strongly believe in education as an important tool for transforming the community. They also showed a strong belief in the youth as a force that has the potential to transfer knowledge to other people in the community. Eveline said: “Nou kwe ke si jenn yo fome lap yon espwa pou kominote a”. (We believe that if the youths are trained, it will be a hope for the community.) People in the community believe that training the youth will help develop a sustained community, and the lives of the population will be improved.

The women in Fondwa believed that the training programs will be have a bigger impact on the community if they are handled by the people in the community. In most areas in Haiti, the training programs are delivered by foreign organizations that come into the community on very particular period (Knettel, 2017).

Tout fomasyon ki fet nan kominote a se preske moun deyo ki fe yo. Nou vle di moun ki soti nan lot peyi. Epi let yo vini yo pa rete pou anpil tan pandan ke nou bwenn anpil fomasyon. M panse si se moun nan kominote a ki fe fomasyon yo, nap gen plis tan pou nou aprann epi nap konnen plis bagay tou.

(All the trainings we have received in the community are done by outsiders. By outsiders we mean people who come from other countries. When they come, they do not stay for too long while we need a lot of trainings. I think if the training are done by the people in the community, we will have more times to learn and know more things as well).

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Research Question: How do the current health issues affect the daily agricultural work of women farmers in Fondwa?

Theme: Health issues prevent the women farmers from going to the gardens

Women in Fondwa are important actors in agricultural production. They participate in crop production at different stages starting from preparing lands, planting seeds, harvesting crops, and selling agricultural products. However, the women in the area face health issues that have impact on their agricultural production. One of the women stated that:

Pafwa ou ka gen yon ti travay ou bezwen fe men akoz ou malad ou oblige kouche epi travay la rete san fet.. le konsa tout bagay ap fe back paske sa pou w ta fe ki pou w baw kob la ou pa ka fe li

(Sometimes you may have a little work that you want to do, but the fact that you are sick you must stay and cannot do the work. When that happens, you are losing benefits because what you use to do to give you money you cannot do it.)

The participant reported that her sickness will have a big impact on her work and income. She also demonstrated agriculture as the main source of work that allows people make money in the rural areas. Her absence in agriculture will result in the decline of her personal financial activities.

The women in the community work every day to keep agricultural production going. They do not stay at home because they understand the role that they play in the food production chain. Their absence in farming delays the production process when the women have different health issues that can prevent them from working. In an interview conducted with Denise, one of the participants, she stated that, "Le m malad m pa ka al travay nan jaden doule a ki konn anpeche m al travay. Le malad m konn santi doule li empeche m travay. Li fe kom kraze dezole

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m pa ka fe anyen”. (When I am sick, I cannot go to the garden the pain used to stop me from working. It makes my body sore, tired and I cannot do anything.) The participant expressed how she feels when being sick and the difficulties she has when working in the fields. She reported that arthritis represents a concern for her and many other people in the rural community. The arthritis problem limits the participant's mobility, a situation which makes it difficult for her to bend down to work. These kinds of health problems create a discomfort in the participant's body and decrease her ability to move. Anita stated that: “Mwen konn gen viray, le konsa m pa ka bese tet mwen pou mwen travay e ou kapab fe plizye jou ak pwoblem sa yo. Epi tanzantan ou santi yon lot malady”. (I use to have dizziness problem, and when I have it I cannot bend down head to work and you can spend several days with this problem. And from time to time you feel another health problem.) The participant explained about her health issues and how that prevent her from working.

Minor health issues can prevent people in the area of Fondwa from working and these health problems are very common in the area. According to a participant, there is not really a specific cause that creates these kind health problems and people can have it at any times, she explains, “Depi m malad travay la malad tou paske sak fe sa pou m ta fe a mwen pap kapab fe l”. (When I am sick the work is sick as well because I cannot do the work, I was supposed to do.) According to the participant, agricultural production in Fondwa will slow down if women farmers are sick because they are in charge of everything from crop production, to land preparation, to the sale of crops. Agriculture is the strength of the country's economy and without it people would be unable to make money (Lundahl, 1992). It provides employment to more than 85% of the population (IFAD, 2008). If the women cannot participate in agriculture

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due to health issues, the country's economy will decrease as there will be less employments (Lundahl, 1992).

Research Question: How do women farmers' health issues economically impact their families?

Theme: Women farmers will not be able to feed their families

The women farmers know how to convert crops into cash to take care of their family. They sell products like bananas, beans, and fruits, and they travel to different markets to buy additional agricultural products and sell them at a more expensive price. These women farmers use the profits generated from the crop sale to feed and educate their children. One of the participants said:

Mwen sipote fanmi m paske ou konnen se mwen menm ki manman. Pwoveb Kreyol la di yon manman nan yon fanmi se li menm ki poto mitan lavi a, ebyen mwen sipote yo, mwen travay, mwen bayo mange, peye lekol pou yo, m abiye yo eksetera.

(I support my family because you know I am the mother. There is a Creole saying that says a mother is the center pillar of life. So, we support our children, we work, I feed them, pay their school tuition, dress them and so on.)

The participant demonstrated her duties as a mother because in rural areas the mothers are responsible to manage family activities. In a situation, she will always take care of her children and sacrifice herself for their future, "Mwen vanm bagay nan mache gen pafwa m konn antre 1000 dola. Gen pafwa m konn antre 2000 dola, m konn antre 1500 dola tou pafwa. E konsa tou m konn fe yon 500 dola selon sam pote". (I sell crops at the market. Sometimes, I used to make \$ 100. Sometimes, I made \$ 140, sometimes \$60, and sometimes \$ 40 depends on what I bring to the market.) The participant explained the importance of going a market day for her, and how

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much money she would lose if she did not go to market during a day. The money earned from crop sale will be allocated to different purpose such as hospital, marriage, funerals, and to support other family members. Denise, one of the participants, mentioned that.

Eben pou economic nou si nou pa tal al nan jaden nou pa ta al nan mache , ebyen sa nou genyen lakay la se li kap pase. Paske w konn sak gen lakay depi w retire l pa gen garanti. Se back li fe sa n te genyen an lap diminye. Jenn yo ap tounen deye paske se mwen ki pou ranmase danre epi vann, epi sere lajan pou lot ane.

(So, I think if we do not go to the garden and the market, what we have in the house will be finished because, you know, if we remove what is in the house, there is no guarantee that we will find other things. What we have will diminish and we will move backward. The youths will regress because I am responsible to harvest crop, sell them, and store money for next year.)

The participant demonstrated that her absence at the market will have a tremendous impact on several aspects of the family. First, the food reserve in the house will be diminished and the money saved for emergency needs will be used and the kids' education will be delayed.

Theme: Limitation in family's social life

Parents in rural areas are deeply involved in social activities. They support family members in all social events such as church, marriage, funerals, and travel. One of the participants mentioned that.

Ou oblige travay pou w kapab pou w kapab mange, biye tet ou paske le w wap soti nan zone nan ou oblige fre. Anplis fok ou gen kob sere yon kote paske w gen pitit, sitou le yap marye se ti kob ki te sanble pou w depanse. Imagine w, kounya ou pa tap kapab al nan mache ou vann ou pap ge kob epi w pap kapab abiye timoun ou.

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(You have to work to eat and dress yourself because when you are going out, you have to be sharp. Moreover, you must have money in savings because, especially when they are getting married, you will spend all the money you have in savings. Now imagine you cannot go to market, you will not make any money and will not be able to take care of the kids.)

The participant showed the importance of work in social activities. According to the participant, people cannot enjoy social activities without money. Self-esteem is also being revealed because the participant mentions that she must be sharp when going out. The participant finds satisfaction in a decent lifestyle. She also cares about her family lifestyle. But the participant expressed concern about not being able to fulfill her children's needs because she knows if she is sick and cannot go to market, she will not be able to make money to cover her children's needs.

Study Summary

Agriculture plays a vital role in the country's economy. It is considered as the main job for people in the rural areas. It helps people in rural areas support their family and is used to support the saving accounts for the farmers. Despite of the challenges that the Haitian agricultural system faces such as erosion, deforestation, and resources problem, it remains the unique job that people in the rural communities can rely on to take care of their family. Women in rural areas play a major role in agricultural production. They participate in different stages of crop production like land preparation, planting of seeds, crop harvest and sale. However, the women farmers in Fondwa deal with different health problems because they do not have enough health infrastructure in the community. In addition, public transportation is not accessible in the community.

Chapter 5: Discussion and Recommendations

Based on the result of the study, the Fondwa women farmers work constantly in the community to produce food. Unlike developed countries, Haiti's agricultural system is based on traditional practice where the farmers use their hands to produce crops. Furthermore, the women farmers are struggling to grow food because agricultural inputs such as fertilizer, pesticides are difficult to acquire due to the poverty problem of the country. In addition, the Haitian agricultural system is predominantly an agriculture of subsistence due to the small size of the productive land. Despite of these challenges, the Fondwa women farmers remain strong actors for farming efforts by participating in different phases of planting process. These women play multiple functions in their family. They provide mentorship to their family by educating their children, and they participate in family decision. As mentioned in the literature women are the center pillar in their family where they manage and control every aspect of their family (Michel & Bellegarde-Smith, 2006).

The women reported their health challenges in the community. They suffered from different types of diseases ranging from minor health issues such headache, cold, and stomach to severe health problems like fever, cholera, and cancer. According to the participants, their health problems are linked to the environment where they live. Among the environmental problems, weather conditions, air and water pollution are some of the cause of health issues in the Fondwa area. According to the women, water and air pollution are highlighted as major concerns for people the community as many of the health issues they have are related to water and air pollution. The lack of training and healthcare supplies are some of the limitations of the people in the community. Healthcare service is difficult to access due to the conditions of the roads, healthcare facilities, and lack of healthcare promoters. The women pointed out the difficulties

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they have to arrive at the hospital on time. The infrastructure problem influences their care decision where the women apply traditional medicine for healing for simple health problems. They only go to the hospital when their health condition is going very bad, a habit which is later has big consequence on their lives. According to Damuse (2011) many women in the rural communities have died from late diseases.

Due to the lack of health promoters in the community, the farmers rely on the support of international organizations for training and healthcare information. Healthcare information is in great need in the community because the farmers need these information to take accurate health decision as the health information can guide to the people in their health issues and provide referrals. Finally, the healthcare information can also help the community members with their health issues in a preventive way than curative process, which will benefit the farmers economically.

The women health issues have significant impact on crop production in the area of Fondwa. Based on the study findings, women farmers in Fondwa engage in all aspects of crop production in the community from planting seeds to selling crops. They contribute a great amount of effort to grow crops. However, those women have significant health problems that impact the agricultural activities. Women farmers, when they are sick, remain in their houses for several days depending on the severity of the health problems, they cannot work nor go to market to sell the products. According to the participants, the health issues of the women delay the production process which results in low amount crop produced and lower the family income as agriculture is the main activity that brings in money the farmers. Money generated from crop sale is used to support family members, pay tuition, and social activities. Lastly, the absence of the women in agriculture due to their health issues result in more poverty and hunger problems in

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the country because the Haitian women are at the center of crop production and main traders of agricultural products.

Limitation

The data collected for this study comes from specifically within the community of Fondwa. Due to the size of the Fondwa population and the community's lifestyle, the result of this study may not be applicable to other rural communities in Haiti. Getting the IRB approval was another limitation, the investigator had had a very limited timeframe to gather data and conduct the analysis. Moreover, the interview planning process took a little time because the participants have several activities to perform during the day. So the participants had to schedule a particular time late in the afternoon after they are done with their work that could work for them. Technology was another limitation. The researcher had to cancel two interviews because the internet connection was not perfect and the participants had difficulty to hear the interviewer. The connection problem delayed the interview process since the participants had to come back in the next for the interview whereas there was very limited amount of time for the interview process. Lastly, the researcher could not recruit more participant because of time and the distance of their houses from the meeting site.

Discussion

The purpose of the study was to examine the impact of women health issues on Agricultural production in Fondwa. The Fondwa is a community where agriculture is the dominant economic activity. Men and women participate in crop production in the area, but women put greater contribution because they participate in the crop production at different stages. However, the population have a lack of healthcare infrastructure and roads. This situation renders it difficult for people in the community to seek proper healthcare treatment. In this study,

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the researcher sought out to investigate how women's health can influence crop production in the community. The Fondwa community has nine subareas and a random sample of ten women were chosen for this study. One woman was pick in each of these subareas and two largest subareas. To recruit the participants, the sent invitation letters and consent forms to them explaining the motif for this study. The Viciere Baptist church was selected as meeting site because it was the most convenient place for the participants. Each participant had separate interview that lasted around 50 minutes. The interview was done in creole. The researcher used Atlas.ti version 5.5 to analyze data collected for this research. The interviews were transcribed in Creole and coded in English. The participants were requested to come to the church. The participant met at the church for the first meeting, which was done via skype. There was a person on the site to help with technology. In the first meeting, we reviewed the consent form together with them and answered questions that they did not understand. Then, in the next week the participants showed up for the interview. They signed the form and began with the interview process.

Question 1: Who are the women farmers in Fondwa?

The participants were delighted to talk about themselves. They described where they come from and what they do. Pseudo name was to describe each participant. For this question we observed participants were engaged to talk about what they do in agriculture, their community, and family. They started by describing their quality as women how support their husbands, children, and neighbors. They also talk about their struggles in the community and their experience in problem solving. They also explain about their ability to perform agricultural duties. The researcher were able to highlight some key information even before they jump to a conclusion. The most important point in the conversation was that the women showed their strengths and leadership skills. They organized themselves in the community, and they support

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each other the way they could. The researcher could observed that the participants provided a lot of details for this specific question. All the participants' answers were very similar even though each participant was interviewed separately.

Question 2: What are the health issues?

For this question, the participants provided very detailed explanations. Each participant described their own health problems. They talk about different symptoms that they feel when they are sick, and they also mentioned the source of their health problems. Certain health issues have common source and some diseases have different sources. The participants stressed a lot on the environmental pollution and natural disaster as the main sources of disease within the community. Water pollution is a big concern among them. Spring and stream waters become polluted with sediment, which have a negative effect on the estuary and coastal environments and people's health (Colindres, Jain, Bowen, Mintz, & Domond, 2007). According to research done in Haiti 90% of children in Haiti severe infectious diseases and intestinal parasites that they get from water contamination (Dalila, Conde & Christensen, 2008). Lack of clean water is a major issue (Gelting, Bliss, Patrick, Lockhart, & Handzel, 2013) that causes infant mortality in Haiti. Some of the participants also mentioned that walking long distance can make them sick as well because there is no health infrastructure in facility in the area. Humidity also represent a problem for the participants; they also explain that people always get sick after a hurricane.

Question 3: How are the women farmers learning about potential issues?

All the participants almost had the same opinion for this question. The participants said that they learn about their health issues from tree doctors (traditional medicine) and hospital. The women explained to researcher the value of traditional medicine in the community. They refer to traditional medicine as part of the Haitian culture. The women visit tree doctors for simple health

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issues and some others go to the doctor when they feel something abnormal in their body.

However, some of the participants did mention that they prefer going to the tree doctors to check about their health issues because it is cheaper. However, if their health problem is severe, that is when hospital is involved.

Question 4: How does participation in educational programs help women farmers address their health problems?

For this question, the researcher tried to see if there was any health educational program offered in the community, and if any, how does that help the women. According to the participants, there were many health educational programs offered in the community. Every year international health organizations come into the community, they give medication also provide training to people in the community. The participants explained how valuable these training programs were to people in the community. The community were trained to identify common diseases and their symptoms and what they can do in case they feel something. The participants expressed their needs for local health promoters in the community because the educational training programs were always done by outsiders. The women want that youths in the community be trained to support the community.

Question 5: How do the current health issues affect the daily agricultural work of women farmers in Fondwa?

For this question, the researcher sought out to investigate how the health issues can influence the agricultural activities of the women. Bell (2013) shows the importance of Haitian women in the country's agricultural production; they have been highlighted as key actor in food sovereignty in Haiti (Bell, 2013). The women presented many problems that have affected their ability to perform their agricultural activities. Among those issues were fever, abdominal pain,

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high blood pressure, and headache. The participants said that they used to be sick for several days. They stay in bed and cannot do their activities. When there are sick, their gardens remain uncultivated, and their husbands do not much without them. Some of participants mentioned that they have always been trying to work even if they sick because agriculture is valuable to them. The researcher was able to identify the participants' appreciation and passion of the women for agriculture in the community. The participants also demonstrated that if they are absent work just for one day, not only they will not feel good being stayed at home, also every agricultural activities will slow down.

Question 6: How do women farmers 'health issues economically impact their families?

Since the women farmers play an important role in crops production, the researcher wanted to investigate the impact of women's absence in agriculture. The women were requested to provide some information about how their health issues could affect the family income. First, the women started talking about the work they do in farming such as land preparation, seed planting, crop harvest, and product sale. The women farmers are responsible to manage crop sale at the markets. The participants talked about how much money they make on a market day from crop sale. With the money they make, they feed their family, pay school, and support other family members. The women talked also about agricultural trade they do from the rural areas to the city where they buy crop in local markets at an affordable price to sell it in the city in an expensive price. Part of money generated from the agricultural sales will go into a saving account to take care of family. According to the participants, not being able to go to the farming site or market due to their health concerns will have a big impact on the family's economy because they are the main people who bring money into the house.

Recommendation for Future Research

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Based on the study results, the Fondwa community members emphasize educational program as an important need for people in the area. From the interview with the participants, the farmers explained that lack of health knowledge is a big challenges that prevents them from avoiding certain health issues. The community needs the support of health promoters for continuous training for a more viable community because most of the educational health programs in the community are done by international organizations in a very short amount of time. The water issue is also overwhelming to the farmers as they do not have a clear method on how to avoid the water problem. Providing water training and supplies would be probably a good area to start to prevent future health problems within the community. Lastly, stablishing a health program in the community where the farmers could come for checkup would save their lives from dangerous illness in the community. Providing a referral program would also be helpful in helping the farmers seeking treatment for complicated health problems. Empowering the women farmers with health knowledge will prevent them from catching lethal disease. If the farmers are healthy, crop production will be strengthened and the people and country's economy increased.

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Appendix A. Timeline for Data Collection

Date	Data Collection Activity
April 13, 2018	Sending meeting request to ten women farmers in Fondwa
April 14, 2018	Arrangement for the meetings (internet connection, computer, IT person, and fee for facility and IT person).
April 15, 2018	Meeting with women to discuss about the interview and sign consent forms.
April 16, 2018	Interview with two participants (50 minutes/interview)
April 17, 2018	Interview with two participants (50 minutes/interview)
April 18, 2018	Interview with two participants (50 minutes/interview)
April 19, 2018	Interview with two participants (50 minutes/interview)
April 20, 2018	Interview with two participants (50 minutes/interview)
April 21, 2018	Start with the transcripts process
April 26, 2018	Start with the coding process
April 30, 2018	Start putting the codes into category.

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May 3, 2018	Analysis of the data
May 7, 2018	Write up of Findings

Appendix B: *A priori* Table

Proposition	Supporting Literature	Research Question
Women farmers perform different tasks in the Haitian society.	The Haitian women are called “Poto Mitan” which means “Center pillar” due to their function in the Haitian family and the economy (Michel & Bellegarde-Smith, 2006).	1. Who are the women farmers in Fondwa?
Women health issues have negative impacts on the agricultural system in Haiti	Haitian women have been highlighted as key actor in food sovereignty in Haiti. However, a great majority of women in rural areas, despite of their role in important agriin agriculture, are challenged by various health	2. What are the health issues?

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	issues (Hawkes & Ruel, 2006; Bell, 2013; Mellegard, 2015)	
It is more difficult for women in remote locations to seek health care service due to infrastructure and poverty problems	In the rural communities, the healthcare system is worse. Medical facilities are understaffed, and there is a lack of medical supplies to serve people in the rural communities. Most of the people in rural cannot afford to go to hospital, and they prefer to stay at home (Goins, Williams, Carter, Spencer, & Solovieva, 2005).	3. How are the women farmers learn about healthcare issues?
Health care educational programs are very crucial for people in rural areas.	Most of the residents rely on their support of community health workers to receive healthcare information such as information for pregnant women and mothers who	4. How does participation in educational programs help women farmers address their health problems?

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	<p>breastfeed their babies</p> <p>(Community Health Initiative Haiti, 2017).</p>	
<p>Some women farmers in rural areas have health issues that prevent them from doing their agricultural activities.</p>	<p>Women who live in rural communities tend stay home when they are sick. As consequence, the women suffer from different kinds of long lasting diseases, especially breast cancer, which remains a chronic disease. (Damuse, 2011; Allen, Leyva, Hilaire, Reich, & Martinez, 2016). Whereas those women play a vital function in agricultural production in the country (Bell, 2013).</p>	<p>5. How do the current health issues affect the daily agricultural work of women farmers in Fondwa?</p>
<p>Absence of women in farming can hurt the country’s economy</p>	<p>Haitian women play an important role in agricultural production and trade in Haiti, they help produce and harvest</p>	<p>6. How do women farmers ‘health issues economically impact their families?</p>

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	<p>crops and load the crops on big trucks to transport them in Port-au- prince (the city) to be marketed. Whereas, some Women in the rural areas in Haiti live in scattered areas which sometimes, makes it difficult for them to move from one place to another or visit hospitals for checkups (Nic Carthaigh, De Gryse, Esmati, Nizar, Van Overloop, Fricke, ... & Philips, 2014; Gaspard, 2013).</p>	

Appendix C: Consent Form

**VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Informed Consent for Participants
in Research Projects Involving Human Subjects**

TITLE: The impact of women health issues on agricultural production in Fondwa

PROTOCOL NO.: VT 18-141
WIRB® Protocol #20180653

SPONSOR: Virginia Tech

INVESTIGATOR: Donna Westfall-Rudd, PhD
268 Litton Reaves
Blacksburg, Virginia 24061
United States

**STUDY-RELATED
PHONE NUMBER(S):** Donna Westfall-Rudd, PhD
540-553-5027
mooredm@vt.edu

IMPACT OF WOMEN'S HEALTH ISSUES

Junior Beauvais
540-616-6373
juniorb7@vt.edu

I. Purpose of this Research Project

The purpose of this study is to examine the impact of women's health issues on agriculture production in Fondwa. I'm conducting this study for a master's thesis project. I chose this subject because I want to investigate how women in Fondwa participate in farming, learn about their health issues, and see how their health issues influence their farming activities. Ten women from nine different subareas in Fondwa will be chosen to participate in this study. I will use the result of the study for publication and future research of agriculture and health care in the area.

II. Procedures

For this study you will participate in an interview to help answer the following research topic: "The impact of women's health issues on agricultural production in Fondwa". To help address this topic, you will:

- 1) Share your experiences about agricultural practices in Fondwa from land preparation, seed planting, crop harvest and sale.
- 2) Share your experiences about your health condition, healthcare challenges in Fondwa, and talk about how your health issues influence your participation in agriculture.

You will participate in two sets of interviews. Information collected in the first interview will be used to gather information about your experiences. You will be interviewed a second time to provide your feedback about the information collected in the first interview and the preliminary analysis of the data collected. The interview will take place in Fondwa at the Community church because you will need internet connection for this interview. Each interview is about 30 to 40 minutes.

To proceed with the interview, you will read the consent form to see if you are interested in participating in the interview. If you agree to participate, you will sign the consent and keep a copy of the consent form.

III. Risks

There are no foreseeable risks associated with this research but there may be the risk of a breach in confidentiality.

IV. Benefits

This is not a treatment study and there is no direct benefit to participate. No promise or guarantee of benefits has been made to encourage you to participate. There will be no reward for participating in the research. The results of the study will be shared with the

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participants and the rest of the community. The result of the study might be used in the future to help conduct a bigger agricultural survey on healthcare and agriculture in the area. If the results of this research are published, your identity will remain confidential.

V. Alternatives

Your alternative is not to participate in this study.

VI. Extent of Anonymity and Confidentiality

Your personal identity such as name, age, and address will not be mentioned in this research. You will assign yourself a pseudo name for this interview, and each participant will be interviewed individually. All the Audio-recording will be deleted after all interviews have been transcribed. The only person who will have access to the information you will provide is my research advisor. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study's data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

VII. Compensation

There will be no compensation for participating in this study and there is no cost to you.

VIII. Freedom to Withdraw

Participation is voluntary. It is important for you to know that you are free to withdraw from this study at any time without penalty. You are free not to answer any questions that you choose or respond to what is being asked of you without penalty.

Please note that there may be circumstances under which the investigator may determine that a subject should not continue as a subject.

IX. Questions or Concerns

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the Virginia Tech Institutional Review Board at irb@vt.edu or (540) 231-3732.

This research is being overseen by an Institutional Review Board ("IRB"). An IRB is a group of people who perform independent review of research studies. You may talk to them at (800) 562-4789, help@wirb.com if:

You have questions, concerns, or complaints that are not being answered by the research team.

You are not getting answers from the research team.

You cannot reach the research team.

You want to talk to someone else about the research.

You have questions about your rights as a research subject.

X. Subject's Consent

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

Consent Instructions:

Subjects able to provide consent for themselves must sign on the line below.

_____ Date _____
Subject signature

Subject printed name

_____ Date _____
Signature of person obtaining consent

Printed name of person obtaining consent

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Appendix C: IRB Approval Letter

VT VIRGINIA TECH.

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-3732 Fax 540/231-0959
email irb@vt.edu
website <http://www.irb.vt.edu>

MEMORANDUM

DATE: April 12, 2018

TO: Donna Marie Westfall-Rudd, Junior Beauvais

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)

PROTOCOL TITLE: The impact of women health issues on agricultural production in Fondwa

IRB NUMBER: 18-141

The Virginia Tech Institution Review Board (IRB), acknowledges the Amendment request for the above-mentioned research protocol.

This acknowledgement recognizes the item(s) identified in the Special Instructions section.

NOTE: Please ensure that required Amendments are submitted to WIRB for review and approval. WIRB guidance is provided on page 49 of the Guide for Researchers. The section is titled Changes to Research / Additional Document Submissions. The document is located at: <http://wirb.com/Documents/Guide%20for%20Researchers.pdf#page=2>