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Abstract

Haiti is a country which suffers from food insecurity, therefore, agricultural production and productivity are important to ensure availability of food for the Haitian population. Dissemination of best agricultural practices amongst farmers is crucial, and extension agents bring the scientific discoveries into the rural communities. In Haiti, extension activities are primarily conducted by graduates from agricultural TVETs. However, little is known about the current situation of Haitian TVET within the agricultural system. This study is a basic qualitative research which used constructivism, and backwards design as theoretical framework to explore the purpose of TVET within the Haitian agricultural system. Individual interviews to schools' directors and teachers, and focus groups conducted with students revealed that respondents thought that TVET helped in students' social mobility by (a) providing training to disadvantaged youth, (b) helping them get financial independence sooner, (c) provide a path towards higher education, or (d) entrepreneurship; it also allows them to build necessary (e) networking and (f) a reputation for their future. On the other hand, agricultural TVET in Haiti had an important role in improving local communities by (a) ensuring rural development and (b) reducing rural outmigration and poverty. Finally, TVET was also crucial within the agricultural extension system because graduates were responsible for (a) providing technical assistance to farmers, (b) improving production practices, (c) helping protect the environment, and (d) training farmers.

Keywords

Haiti; technical school; training

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Abstract

Haiti is a country which suffers from food insecurity, therefore, agricultural production and productivity are important to ensure availability of food for the Haitian population. Dissemination of best agricultural practices amongst farmers is crucial, and extension agents bring the scientific discoveries into the rural communities. In Haiti, extension activities are primarily conducted by graduates from agricultural TVETs. However, little is known about the current situation of Haitian TVET within the agricultural system. This study is a basic qualitative research which used constructivism, and backwards design as theoretical framework to explore the purpose of TVET within the Haitian agricultural system. Individual interviews to schools' directors and teachers, and focus groups conducted with students revealed that respondents thought that TVET helped in students' social mobility by (a) providing training to disadvantaged youth, (b) helping them get financial independence sooner, (c) provide a path towards higher education, or (d) entrepreneurship; it also allows them to build necessary (e) networking and (f) a reputation for their future. On the other hand, agricultural TVET in Haiti had an important role in improving local communities by (a) ensuring rural development and (b) reducing rural outmigration and poverty. Finally, TVET was also crucial within the agricultural extension system because graduates were responsible for (a) providing technical assistance to farmers, (b) improving production practices, (c) helping protect the environment, and (d) training farmers.

Keywords: Haiti; technical school; training

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Introduction

Agriculture is an important activity because it produces food for human consumption and allows for rural development (Moehler, 1997). However, in Latin America there are still many malnourished people, particularly in the Caribbean islands (FAO, IFAD, & WFP, 2015). Haiti's situation is one of the most critical in the region, based on its alarming hunger index severity (von Grebmer et al., 2016). Therefore, it is crucial to work on ways to improve food security status in Haiti. Fuglie and Wang (2012) have found that the obstacles which countries have to face for increased agricultural production are linked to the access and implementation of technologies. Extension can play a large role in the technology diffusion. In Haiti, according to GFRAS (2017), graduates from Technical and Vocational Education and Training (TVET) institutions perform most of the extension work. As operationally defined in this study, agricultural TVET schools were the tertiary institutions providing diploma-level credentialing leading to employment as agricultural technicians. Given this important role within the agriculture sector in Haiti, understanding these TVET institutions as a piece of the larger capacity building system which ultimately has implications for the food security situation in Haiti. As previously noted in the literature (Pierre, Calixte, Moore, Bunch, Koenig, Delva, & Roberts, 2018), There is very little empirical understanding of the Haitian agricultural education system. This study adds to the literature by providing a baseline examination of a selected group of agricultural TVET institutions.

Literature Review

The definition of TVET, according to UNESCO (2017b, p. 1), is all “those aspects of the educational process involving,

in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life.” This organization also acknowledges the role of TVET in employment, sustainable development, and social justice (UNESCO, 2017a). Despite the importance of TVETs in developing countries' economy, it has still been reported that they are highly unpopular, because they are viewed as pertaining to a specific class of people, whom are not expected to enter the higher education system for various reasons (King, 1993). In Ghana, enrollment in public and private TVET have decreased, because graduated lower salaries, and it is perceived to be reserved for people with poor academic performance (Darvas & Palmer, 2014). In Latin America however, TVET provides much needed training to youth with disadvantages (King, 1993). Another complicating factor is the diversity of TVETs, which emerges from whether or not it is controlled by the state, the private sector or both (Koudahl, 2010) and the various types of institutions and outcomes of TVET, as well as the fact that it can be school-based or at the post-secondary level (King, 1993). Agricultural TVET needs to address human capacity development, government funding, institutional networking, curriculum modifications, and physical infrastructure (Rivera, 2006). However, depending on the cultural aspects of TVET in a specific country, many approaches may be appropriate to ensure quality of TVET (King, 1993). If the focus is put on human development, inequality, poverty and other environmental and social issues, TVET can lead to sustainable development (McGrath & Powell, 2016). UNESCO (2015) also recognizes that TVET is holistic, in that beyond job skills, it provides *character*

education such as positive values, motivation, and entrepreneurial skills.

Previous literature about the agricultural TVET system in Haiti could not be found. Recent research has begun to examine the agricultural universities in Haiti. Pierre et al. (2018) found that university faculty generally felt prepared for their teaching roles. Albert, Roberts, and Harder (2017b) examined how university faculty viewed the importance of developing extension competencies in their students. Faculty had mixed views on their roles in developing the competencies noted by GFRAS (Sulaiman & Davis, 2012). In a similar study, Pierre, Calixte, Moore, Bunch, and Roberts (2018) found faculty believed university students generally had the necessary set of competencies at graduation for employment, but were not competent in all the GFRAS competency areas. This potentially means students were ill-prepared to be frontline extensionists. This situation could be underlying some of the challenges note by Zeleya, Harder, and Roberts (2016) who found that small-scale farmers had challenges accessing information and infrequently relied on extension for their information needs. Although interesting, this research does not shed light on the tertiary-level, diploma-granting institutions. In terms of workforce development, the agricultural universities appear to have strengths and weaknesses in meeting the needs of the agricultural sector. It is, however, unknown about the roles which agricultural TVET schools play in the agricultural sector. This study will seek to begin filling this gap.

Theoretical Framework

This study was designed and implemented under a lens of social constructionism (Crotty, 1998). Under this lens, the researchers assumed that the interactions between people in a social system contribute to a collective

understanding of a given phenomenon (Crotty, 1998). Then, an individual's personal experiences in that social system inform his or her personal understanding of the phenomenon through social constructivism, which focuses on the social interactions in the learning processes for individuals (Bozkurt, 2017; Doolittle & Camp, 1999; Powell & Kalina, 2009). Operationally, the social system was defined as agricultural technical schools in Haiti and the individuals in the system were the school directors, teachers, and students. It was assumed that the interactions between these people informed each person's beliefs, which in turn informed the broader system and vice versa.

The second piece of our theoretical framework was informed by the concept of backwards design (Wiggins & McTighe, 2001). As an instructional design approach, backwards design begins the process with the end goal in mind (i.e. what should students be able to do by the end of the program). Curricula decisions are made based on trying to achieve this end goal. Understanding the end-goal will then allow a better understanding of all other aspects of a given educational program. Operationally, understanding the purpose of agricultural technical schools in Haiti will allow for a more systematic review of the institutions and identification of opportunities for improvement to the system.

Conceptually, the school directors (often founders of the schools), teachers, and students (adult learners) entered the social system (the agricultural technical schools) with their own ideas about the purpose of the schools. Through their interactions, a socially constructed purpose emerges, which in turn has the potential to inform management decisions of the directors, curriculum decisions of teachers, and career choices of students. All of this begins with

an understanding of the purpose of these schools.

Purpose

The goal of this study was to explore the purpose of Haitian agricultural TVET schools. This was achieved by synthesizing beliefs of: (a) school directors, (b) teachers, and (c) students. This knowledge can then be used as a lens in which to further examine these schools.

Methodology

This study utilized a basic qualitative study design (Ary, Cheser Jacobs, Sorensen, & Walker, 2012). Sampling, data collection, and data analysis were informed by our theoretical framework.

Sample

The study sampling method was to select all agricultural technical schools in the Ouest department of Haiti (Harding, 2013). This resulted in four TVET schools. Three schools were located in Petit-Goave (schools 01, 02, and 03). One school was located in Montrouis and affiliated with a university (school 04).

The schools were technical institutions with an agriculture option, except for school 04, which was a university also offering bachelor's degrees. School 03 included additional technical options (other than just agriculture). The program of study lasted between two and three years, with a credit system for school 04. School 03 required a minimum entry level of 2e, while 01 and 02 only demanded 3e; institution 04 on the other hand required students to have completed their philo (final year of secondary school). State recognition (INFP) was awarded to only school 02. School 04 was accredited as a university.

The director and three teachers were interviewed at each school. Directors were coded D01, D02, etc. Teachers were coded

by school and teacher number, for example 02-T1 was teacher 1 from school 2.

Additionally, a focus group was conducted with nine students at each school to provide input from typical students (Miles, Huberman, & Saldaña, 2014). Results from focus groups were coded as FG-01, FG-02, etc.

School 04 presented a deviant case because it was affiliated with a university. Circumstances at school 04 allowed for only one student to be interviewed. All the directors and teachers interviewed were male. Most of them were young and agronomists. Only three of them had a master's degree and worked fulltime. Most of these teachers worked part-time in their these schools and also had other teaching positions, technician positions, or managed their own businesses. Most of the students were male (19 out of 28). They all came from rural communities and reported familial activities to be mostly agriculture and commerce. The age range seemed to include a wide group. Many had worked or studied in a different field before entering agriculture.

Data Collection

As noted previously, school directors and teachers were interviewed using semi-structured interviews. Focus groups were conducted with students (although school 04 only had one student, so the focus group became a defacto interview). Interviews and focus groups were conducted in Creole. Interview guides were first written in English, and then translated into French and Haitian Creole. Interviews and focus groups were audio recorded (Yin, 2016) and occurred at participants' home, office, or campus. The researcher also kept a journal to record observations, reactions, and methodological considerations.

Data Analysis

Data were analyzed in Creole by the lead researcher directly from the audio recordings (Green, Franquiz, & Dixon, 1997). A constant comparative method with open coding was used to identify initial codes (Saldaña, 2016). Axial coding was then used to organize initial codes into themes and sub themes (Saldaña, 2016). Results were translated to English after analysis was completed. Direct quotes were pulled from recordings and translated to English to provide a voice to participants.

Rigor

Multiple steps were undertaken to ensure the rigor of this study. First, to ensure trustworthiness in the data analysis, two interviews were randomly selected and reviewed by two peers not involved in this study who speak Haitian Creole to ensure accuracy in the analysis (Creswell & Miller, 2000). Second, member checking was accomplished by sending a summary of the analysis to the school directors (Cho & Trent, 2006; Hoffart, 1991). Third, the design of this study allowed for triangulation of data sources from (a) directors, (b) students, and (c) teachers as well as data collection approaches of (a) interviews/focus groups, (b) field notes, and (c) observations (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). Fourth, the researcher kept a journal to allow for confirmability through an audit trail (Lincoln & Guba, 1985). Finally, the peer debriefing was accomplished through regular interactions during data collection and analysis between the lead researcher and the co-authors of this study.

Findings

Social Mobility of Students

This idea of social mobility appears in the interviews with many directors, from

most teachers, and in the focus groups as well, under various forms: (a) training and education for the youth, (b) a step toward higher education, (c) financial independence, (d) entrepreneurship, (e) networking, and (f) reputation. The director D-02 explained the idea of social mobility clearly, when he said: “professional schools can start a future” or with teacher 01-T2 affirming that he is “preparing [his students] to replace him tomorrow and better face life.”

Train the youth. Participants viewed these schools as improving the lives of youth. For nearly all the teachers, one director, and in two of the focus groups, the role of technical schools was mentioned as a way to help the youth and provide them with training that will allow them to get ahead in life. It is also a way to help the country as a whole through helping its youth’s future. For teacher 01-T2, the objective of his teaching is to “prepare the students to help themselves then to contribute to the development of the country” or as 01-T3 expressed “we want to train the youth for tomorrow, for the country.” Education is an important gift to the youth because “in Haiti the question of training in agriculture is problematic” (03-T1). During focus group FG-03, a student felt that the head of the school was his model because “he is responding to a need” through opening the technical school, because he recognizes that to “have more people trained and giving good service is better,” particularly given that “the educational system in our country is very difficult.” Teacher 04-T3 got involved in education because he “wants to help improve the level and type of education being given in the country” reinforces this idea that the current situation is difficult. In FG-01, a student felt the same way and “saluted the intellectual committee of the school who are working for the community

and practically in a voluntary basis.” Director D-01 felt that “training the youth or anybody interested” will give them “more financial autonomy.” Researcher notes reveal that empowerment of the youth or people seemed to be at the core of this director’s speech for opening a technical school. All of the teachers interviewed, except one (02-T2), shared this sentiment. It was also noticed that even the teachers who are not teaching agriculture classes felt that they are motivated to teaching in these schools because the “students have difficulties” in a set of skills that they can help with such as “writing their methodology” (02-T3). Another teacher commented that one of his “objectives for teaching was to train people” and that “the more people are trained in a domain the more doors are open for positive things to occur” for them (04-T2). This training is even more important for those students who have not obtained their Baccalauréat (Bacc) II which is an exam some fail at the end of their studies. D-04 said some students choose a technical diploma because they “may not have passed bacc II.” Bacc II is the government issued high-school diploma needed to access higher education after the last class called philosophie or philo “the reason I did not go to agronomy is that I was stuck in philo and if I waited until I passed I may never go” (FG-03). This statement also represents another role in social mobility for students, which is a step toward the license (bachelor’s degree).

Higher education/bachelor.

Participants viewed these schools as being stepping stone to further education. One form of social mobility linked to lack of Bacc II, which appeared a lot in the interviews, is that the technical school is a step toward the bachelor’s degree in agricultural sciences. It even seems to be an important aspect for the students themselves,

because in all the focus groups the bachelor was mentioned at some point. Many students have an agronomist as a model not a technician; in the case of FG/E04 it is someone with a master’s degree in aquaculture. According to a student in FG-02 “I loved agronomy but I am taking the technical before.” A bachelor is regarded in both FG-01 and FG-03 as a possible outcome for students in the future. It helps them in choosing the school to attend, because “if we wanted to pursue our studies” (FG-03) the students would need to choose a school, which delivers a diploma recognized by the state. Most directors are also aware of the intent to pursue higher degrees and embrace this notion fully as D-02 explained: “professional schools help people start a future and help for university as well.” D-04 understands this situation too, and the school has decided from the beginning to present “same content, evaluation and exams” to students on the technical path “so students do not have anything preventing them from continuing the program” towards a bachelor. Or as D-02 goes to the length of “affiliating” the school with universities. However, at least one teacher 03-T1 saw it as an alternative to the bachelor; he supported that “those who do not want to go in the sciences go to the technical.” Additionally, if the reason for starting with a technical diploma may be a lack of Bacc II, it is often due to financial reasons. FG/E-04 exemplified this situation because “I aimed for a license [bachelor] at the beginning, I didn’t aim for a diploma,” which he was then forced to pursue due to lack of funding; he wasted his money in a university that was not “recognized.”

Financial independence.

Participants viewed these schools as a tool to provide financial independence for students. As perfectly stated by D-04, “students choose agricultural technic 80% of

the time for economic reasons” in his school. A student at his institution, FG/E-04 agreed that “reason is financial” for him to switch from a bachelor to a technical diploma. This idea is supported indirectly by all the other directors when they mentioned that “students do not really pay the school” tuition (D-02) since “they do not have money, reality is very precarious” (D-01). This situation is not easily solved because, according to D-03, “you cannot ask them to pay too much because if you do they leave.” As a result, “some [of his] students to date have not paid anything to the school” and are about to graduate after the two-year program. This explains why, for so many of them, the shorter program constitutes a benefit. As a teacher 04-T1 explained, technical diplomas “facilitate financial independence.” Graduating early has advantages as “parents invest a lot of money in their kids’ high school and expect something from them early” because “we must see Haiti as a poor country” (04-T1). The situation is such that 04-T3 claimed that “in Haiti, due to economic situations, many students start but cannot finish” the program but they are able to “work as technicians.” Therefore, technical diplomas are helping young people to be financially secure sooner/faster “shorter training,” and “enter the job market faster” (04-T1). Some students may even finance their bachelor studies as well with the technical diploma. FG/E-04 intended to finance his bachelor upon completion of technical studies. A teacher (01-T1) reported that his former student has told him that he is currently “paying for my own tuition, not my parents with [legumes] parcels.”

Entrepreneurship. Participants viewed these schools as a way to develop entrepreneurs. Entrepreneurship was mentioned as another path to financial independence. After all, “the more people

having personal activities to live leads to less poverty in the country,” (D-01). In this sense, agricultural TVET in Haiti is important to combat poverty for the graduates, by enabling them to start a new business. Entrepreneurship seems to be viewed as an essential vocation of agricultural TVET to many respondents (FG/E-04; FG-03; FG-01; D-01; 04-T2; 03-T1; 03-T3; 01-T1). Many students had an entrepreneur as a model. For example, during FG-03, an agronomist who “has fish” ponds was described as a great role model for students. In FG-01, entrepreneurship is described as an inherent characteristic of “the technician [whom] cannot wait for the state” to provide jobs, because “if you are a technician you must be able to produce without the state.” Many teachers felt the same way as well. 04-T2 claimed for him “in the Haitian agricultural system the technical training” “should be about creating jobs, every technician should be an entrepreneur.” 03-T3 said “I believe in that a lot” referring to the fact that “students can create own activity,” because “students must not wait” for jobs. This idea of entrepreneurship was prevalent across all schools visited and for all levels of interviewees.

Networking. Participants believed these schools expanded the social networks of students. Networking is essential to technical schools and technicians, both as a way to get to the school, and for the connections the student is able to create through the school. A few teachers and directors have mentioned bringing guest teachers or taking the students to practices in the areas where they know they may be able to create bonds with important people and organizations working in the agricultural sector (D-04; D-02; 03-T2; 03-T3; 01-T1; 01-T2). Moreover, some students are connected to TVET because of work

relationships in the agricultural sector. According to D-04, “some students are promised a job by someone to study agricultural technic.” This director even said that “some [students] are funded by their employer” or “family members may work in a program that will need technicians and train them for that.” Nonetheless, if this situation seemed to be particular to school 04 in which “most students we have studying technical are financed by organizations,” there were students from other schools who were simply inspired to get a technical diploma because of agriculture-related organizations and programs working in their communities. A student in FG-01 said that he knew about the school because “FAO came with the [agricultural] field in the area with Mrs [name removed] who came with a movement about farming in the region.” Most students have been encouraged by someone in the agricultural sector to pursue a diploma in that field, whether that is a family member, a teacher or director at the school like a teacher, or current/former students. In certain cases, the opportunities that exist in their communities have prompted a demand for technical studies. D-02 explained that “the weekend option has more students [attendance] than during the week” because “they find a job while studying here especially the ones from Cote-de-Fer.” “The school has a lot of students from Cote-de-Fer” because “many [agricultural] projects go to Cote-de-Fer, which explains the high demand” of students from this region. The situation is such that “we have demand in Cote-de-Fer for [the school] to have an annex there.” It seems that wherever people are actively working in agriculture, is where the youth are most likely to know about and decide to attend an agricultural technical school.

Reputation. Participants believed these schools helped develop the professional reputations of students. Being a technician is a tool towards success. D-02 mentioned that agricultural TVET is “a big tool” in the Haitian agricultural system and 01-T1 that “technicians are tools” in the agricultural sector. Being a technician legitimates decisions in the field as well. For example, this student who was encouraged to enter a technical program by his farming father who “recognized my ideas but told me he would prefer I do agriculture technician.” Another student who claimed that when farmers argue with him, he “tell[s] them I am a technician if you don’t do as I say you won’t get results.” It gives standing in the rural communities like this student in FG-03 who decided to study because he “can be like the technicians” he sees during his work as agricultural agent. This standing and reputation can be essential in building a career. In FG-03 someone mentioned “in agricultural technic you study animal health; by studying animal health, you can become a great veterinarian, not only for the commune but for the whole country.” According to 03-T2, “some technicians in the city [...] have a good reputation; sometimes have received plaque of honor.” However, the search for standing and reputation was deemed problematic by teacher 04-T3 who wondered “what kind of relationship should exist between agronomists and agricultural technicians.” He raised this question because technicians may “present an inferiority complex.” His personal experience working “in our reality particularly the rural communities [where] the technicians present themselves as agronomists” has prompted him to realize that “they may not know what their job is; in their training they receive no orientation in that regard.” D-02 explained “although they’re not agronomists, they get called agro

in the field; only they know that they don't have a 5-year bachelor."

Improving Local Communities

The sentence "an agricultural technician is someone who has an extremely important role not just for the farmers we can say even in the cities" (FG-03) depicts some of the various ways in which a technician is expected to contribute to society's welfare. The technician (a) supports rural development and (b) helps reduce poverty and migration.

Rural development. Participants expressed how these schools helped develop rural communities. Helping farmers and agronomists working in the field is contributing to rural development. Teacher 01-T1 thought, "It is the most important for the development of the country" while speaking of agricultural TVET's role within the Haitian agricultural system. 01-T2 stated that "agricultural technic is extremely important in the development of the country, may it be on the environmental level, vegetal, and why not animal breeding." 01-T1 also cared to explore "how to increase revenue for farmers" in his courses because he believes that is what a technician is called to do. Students also know that this is a future endeavor for them as agricultural technicians. During FG-02 a student recognized that "our role [...] is to give them [the farmers] the technique that we have to help them get ahead" economically. A student in FG-01 explained it best by stating that "a technician has a lot of importance because a technician is first an agent of development." The importance of TVET in the agricultural sector in Haiti is linked to the essential role that technicians play within it because, like a few respondents pointed out, "this country is primarily/essentially agricultural" (D-03; FG-01; 03-T3). The technician belongs

where the farmers are, which is in the mountains because Haiti is a "mountainous land" (D-01). Therefore, as mentioned during FG-02, "we will see if the technicians want to go up the mountains or stay in the cities, they will see they pay the consequences for that." Not going in the mountains means not working closely with the farmers and not contributing to rural development in that sense. D-01 says is best "extension activities on agriculture-related knowledge will allow for rural development in the mountains." The technicians must go in the mountains, as mentioned many times because their "final objective is to increase farmers' income/revenue" (01-T1); and the mountains is where the peasants do agriculture in Haiti. Their work is necessary because it provides services that are needed. According to 01-T3, agricultural sciences "first aims at protecting the environment and secondly its objective or goal is to change the lives of all the people living in the communities."

Migration/poverty. Participants saw a connection between the schools and a reduction on poverty and related rural outmigration. Helping rural development means helping farmers stay in the rural communities, therefore, it means combating rural migration and poverty, "because someone who does agriculture can't be poor tomorrow" (FG-02). The reality though, is that "the population leaves the mountains and comes to the city" (FG-01) because they are poor and that "farming is not productive" for them (FG-01). Low productivity in agriculture is the reason farmers "come to the cities, form the slums but there are no means, so they have to beg" (FG-01). FG-01 "Sometimes some of them do not even have a job; they're forced to walk in the streets rather than work in the mountains." Somehow the students mostly, and a few teachers as well (04-T1; 01-T1;

01-T3), felt that these conditions can be improved with more technicians properly imparting knowledge to the population. However, the migration occurs also from the cities to the rest of the world. 01-T2 attested “I have some [students] currently in Dominican Republic doing graft.” Therefore, in that regard, agricultural TVET has not been able to stop the migration. This migration problem is noticed by 03-T2 who saw that “in [the city] some youth have contempt and are not interested to go to technical schools because they do not see themselves in Haiti; they are turning to other places.”

Agricultural Extension

Many respondents emphasized that “a technician is an extensionist for the peasants, growers mostly” (FG-03). The extension work agricultural technicians ought to perform are multiple but can be summed by (a) providing technical assistance, (b) improving production practices, (c) protecting the environment, (d) increasing food security, and (d) training.

Provide technical assistance.

Participants thought these schools gave students the ability to provide technical assistance that complemented the agronomists. The role of a technician is to provide technical assistance was shared by nearly all respondents. However, whom they assisted may vary. For some, “we may consider an agricultural technician as an auxiliary to an agronomist” (FG-04), because the “agronomist may need support and this support is no other than a technician” (01-T3). As 01-T2 puts it bluntly “technicians are auxiliary to agronomists,” idea that is supported by D-04 “agricultural technicians are here to apply what agronomists tell them.” However, the importance of the technicians seemed to ascribe primarily to their mastering of

fieldwork. “As an agricultural technician our role is to accompany the agronomists in the field” recognizes a student in FG-02, because “agronomists may conduct a study but when implementing in the field they require technicians” (01-T1). Their role while accompanying the agronomist is crucial “when he [an agronomist] has technicians [with him in the field] he realizes what he wants to” according to 01-T3. “A technician is [also] there to fill in for an agronomist” (03-T3) because “in the absence of the agronomist the technicians are here, and the work continues well” (01-T3). They are also there to help/accompany farmers “the role of an agricultural technician is to accompany the farmers” (03-T3). According to 04-T3 “it is more than necessary to have more trained agricultural technicians, so the farmers may get the support they need.” This notion of helping/accompanying the farmers is so entrenched in the subculture that many students use the same wording when reflecting upon the work they project to do after graduation, like this one during FG-01 who wants “to go to [his] rural section to accompany the farmers.” Teachers like 01-T3 also viewed the students’ future work as “to help the peasants.”

Improving production practices.

Participants believed the schools could ultimately help improved agricultural production in Haiti. Students viewed the purpose of their future work as “help[ing] them [the farmers] farm better” (FG-01). There seemed to be a consensus amongst the students on the fact that Haitian farmers engage in activities that are detrimental to agricultural productivity. In FG-03 a student described the fact that “they [the farmers] do not realize that they don’t properly maintain the space they are cultivating” because the farmers cultivate the land but yields keep going down, which is explained not by the

low quality of the beans, like they claim, but by the bad practices they are attached to generationally. It is the job of a technician to show them a better way in order for the production to yield more. According to students in FG-02, there needs to be “someone in the zone who’s an agricultural technician, who can enable the peasants to plant better.” This person is necessary as mentioned earlier “because their farming is not efficacious” (FG-02). In FG-01, someone took an example on their own families: “our parents used to work very badly, now with the training I have, I make them [...] progress in the sector.” The bad practices Haitian farmers currently use make their yield lower but seems to affect the environment, which subsequently lowers the productivity more, in a vicious cycle. FG-02 “reforestation matters and make them work the land [farm] in a different manner” because the way they farm is not being productive nor does it respect the environment.

Protecting the environment.

Participants believed what was learned at the schools could help better protect the environment in Haiti through better production practices. Environmental issues are therefore a huge component of a technician’s role or even of the science at large, as proposed by 01-T3 “agronomic sciences are beautiful and first aim at protecting the environment,” that is imperative in Haiti because “we have a cheap vegetal cover.” Many students want to get involved, upon graduation, in environmental issues, particularly in reforestation campaigns. Like this student from FG-01 whose “dream is to work in environmental issues and reforestation.” Other students were inspired by people working for the improvement of the environment. In FG-03, a student mentioned a role model who is an “agronomist who has

an ecological farm” or another one who was inspired to become a technician by watching other technicians at work “talking about reforestation” to the farmers. He was deeply impacted by this training he had participated in and decided to pursue studies in the field as a result. Therefore, ecology is an attractive component of the job to these students and they feel that they are the most prepared to face these issues. For example, “as an agricultural technician, I can say that the reforestation campaigns are not done” criticized someone from FG-03. According to students from the same focus group, “the erosion that degrades the mountains create problems in the city” as well. So, their contribution to the environmental issues is not limited to the rural areas, as ecology is holistic in nature. Reforestation is particularly a focal point as attested by this student during FG-02 “our dream is to go help the farmers in terms of how they deforest.”

Increase food security. Participants thought these schools could have an impact on food insecurity in Haiti. A student in FG-01 said “after graduating, it is about helping the farmers know about how to plant and have higher yields,” which, according to FG/E-04 “can help the country develop in terms of food security” referring to technicians’ starting own activity. In FG-02, the “vision for the future is to accompany the peasants so they can make the soil have more yield.” If deforestation and other destructive practices give lower yields, it is the technician’s primary goal to, “as a trained agricultural technician show the peasants how to work to see improvements in soil” productivity (FG-02). So, “if I help them with my knowledge, what I have, I think their farms will have more yields” (FG-01). By improving agricultural yields and productivity, agricultural technicians also tackle the topic of food insecurity in the

country. As teacher 01-T3 evoked “it will also allow them to help the whole population with a series of food they need for their bodies,” speaking about agricultural technicians who choose entrepreneurship. The reason is after all, “I can’t be eating things I don’t know; what I eat I must seek to produce it” says teacher 01-T1. But according to 01-T1 it is not an obvious goal, “because there are no institutions that do agriculture in Haiti; it is a country that mostly imports things from abroad.” However, the students felt it was their responsibility to tackle the food security issue in Haiti, despite the state’s failure in that regard. After all, “there is no agricultural policy, no infrastructure and no environmental protection policy” (FG-01). The way in which these agricultural technicians will attain the objectives is through proper training of the farmers and other agricultural producers. Examples of technicians doing this type of work existed for some of these students, for instance in FG-03, who recalled “the way they train the peasants who used to farm badly so these farmers may have more yields and more food.” This is what they want to do in the agricultural sector in Haiti.

Training. Participants expressed how these schools created trainers to work with farmers. Improvement in food security status in the country means that the “role of technician is to accompany and guide the farmers for intensification of agriculture” according to teacher 02-T1. This idea was supported by 04-T2, “the agricultural technician’s job is to work with people building models” which will increase yield and he must show people “better ways to do it [agriculture].” Many teachers and directors (D-02; D-01; 04-T1; 04-T2; 04-T3; 02-T1; 02-T2; 03-T1; 03-T2; 03-T3; 01-T3) agreed that “when you say agricultural technician that means working with

peasants” (D-02), that the technician is “the person who’s going to live with the peasants, so the technician has a very tight link with this” idea of being in the field engaging the people (03-T2). In conclusion, as stated by 03-T3, “the role of the agricultural technician is to accompany the farmers and to train them as well.” Students also understood their role as such. They identified with role models who are “agricultural technicians [who] used to come to the zone and [give] some training” which the peasants benefitted from. “I remember that I participated in a training” of theirs shared someone from FG-03. In FG-01 another student revealed that he “want[s] to train other people who may lack knowledge in this sector because cultivating requires a minimum of training.” FG/E-04 wanted to gain all the skills necessary for him to be able to “push through with my lessons and allow people to learn from me.” FG-03 was inspired from “when I used to go to the activities with the peasants [as an agricultural agent] I used to see how the technicians do the conventions” and he was working towards his diploma to do just that as well. All of these dreams and aspirations point in the same direction, that “the agricultural technician’s role is extremely high; he is a teacher for the peasants” (FG-03).

Conclusions, Recommendations & Implications

Results from this study revealed that agricultural technical schools in Haiti increase social mobility of students, improve local communities, and enhance the extension capacity in the country. Meaning-making is socially constructed, context-bound and is sensitive to cultural context (Doolittle & Camp, 1999; Powell & Kalina, 2009). In Haitian context, TVET’s purpose has meanings that are inherent to the cultural

context in which it was constructed by the different stakeholders within it.

Social Mobility

Agricultural TVET increases social mobility of students through (a) additional training and education, (b) providing a step toward higher education, (c) helping establish financial independence, (d) developing entrepreneurship skills, (e) building networks, and (f) establishing a solid professional reputation. The various experiential learning activities provided to students during their training have allowed them to enhance the utility, purposefulness and practicality of the skills they have acquired for better competitiveness after their graduation, as TVET creates a connection between education and real life (Buchmann & Schwille, 1983; Cantor, 1997).

The findings from the interviews and focus groups with various stakeholders within the Haitian agricultural TVET, have revealed that TVET had potential to help vulnerable young people receiving training when they may not have had the formal possibility to gain any skills otherwise. Developing countries, in Latin America particularly, used this level of training to meet the needs of disadvantaged youth (King, 1993). The youth enrolled in these schools, was found to have less schooling and therefore would face issues being admitted into the universities. Most of the schools selected for the study required lower educational levels for admission than universities, which was also reported by King (1993). Those graduates often were able to finance their higher education themselves, although the majority of the schools, except the university, have a tradition of non-terminal TVET (King, 1993; Swanson & Rajalahti, 2010). In Latin America, as it was found that there are both

terminal and non-terminal TVETs (King, 1993).

Improve Communities

Agricultural TVET schools also improve local communities through supporting rural development, reducing poverty, and rural outmigration. In Honduras, it has been found that there is a direct correlation between TVET and higher rural productivity and incomes (Atchoarena, Wallace, Green, & Gomes, 2003). TVET in Haiti also helped the youth to get out of poverty as it did in India (Bisariya & Mishra, 2015), notably by allowing young people to find employment faster. Beyond students being direct beneficiaries of TVET, the findings also suggest that, according to the participants interviewed, it also had the potential to help the country's economy in a sustainable way. According to Edokpolor and Owenvbiugie (2017), Nigerian TVET had the potential to help youth develop this developing country's economy sustainably. As this position was prevalent in teachers and certain directors, it can be inferred that it is an inherent part of their responsibilities as TVET educators. Finnish TVET teachers "took responsibility for enlightenment and for promoting economic and social progress; this is clearly present in agriculture and forestry, but also in commerce" (Heikkinen, 1997, p. 420).

Enhance Extension

Agricultural TVET schools also play a crucial role in developing the capacity for extension-type activities in the country like: (a) providing technical assistance, (b) improving production practices, (c) protecting the environment, (d) increasing food security; and (d) training. The agricultural technicians are to help the rural world, through the training they ought to provide to the farmers about food production and environmental issues. These roles are

crucial for Haiti's farmers, as Albert, Roberts, and Harder (2017a) found that environmental issues and resource limitations are significant barriers for farmers. Many countries employ graduates from agricultural schools, rather than university graduates, to do the field-level extension activities (Swanson & Rajalahti, 2010). In developing countries, the government agencies train these workers for their own agricultural field level extension services in many areas like forestry, fisheries, etc. (Atchoarena et al., 2003).

Recommendations for Research

Recommendations for research would be to further investigate private TVETs in other geographic departments of the country. It would also be interesting to understand Haitian TVET from the teachers' standpoint, the different types of teachers, the characteristics of their educational institutions and their professional development as it relates to INFP. It would also be important to investigate EMAs, which are the public agricultural TVET schools under the ministry of Agriculture, rather than the ministry of Education that supervises the private TVET schools examined in the current study. This study did not include the view of farmers and rural communities on the work of technicians, so it would also be interesting to explore the beliefs of these stakeholders.

Recommendations for Practice

Recommendations for practice stem from the participants themselves, who have expressed the need for the state to provide more support to the sector through the ministry of Agriculture. Externally, it would make sense, first to clearly define the relationship between these schools and the ministry of Agriculture. Second, given the emergence of a focus on entrepreneurship, sufficient agricultural microfinance

programs should be in place. Third, these schools lack infrastructure and resources. The government of Haiti may be able to intervene in that regard, since many of them could conglomerate into learning centers with other technical and vocational options offered. Finally, given that the training provided in these schools could be non-terminal, articulation agreements with universities should be explored to allow students to naturally progress towards a bachelor's degree if they have obtained their Bacc II.

Internally at the schools, other recommendations should target the various trainings for teachers and curriculum adjustments needed in the TVET schools. The curriculum should better address the roles of technicians in the agricultural system, particularly their relationship with agronomists. The curriculum should also address organic and other sustainable practices so as to better inform the farmers they train. Their work with farmers also creates needs for them to know about adult education principles and diverse communication skills.

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