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## **Employment Opportunities for Graduates of Agricultural TVET Schools in Haiti**

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### **Abstract**

*The literature suggests that in Haiti, the extension work is primarily conducted by graduates from agricultural TVET schools. However, Haiti is a country with alarming data for food insecurity and severe hunger index. This situation arises questions about the manner in which TVET contributes to the dissemination of best agricultural practices amongst farmers and the role that extension agents play in bringing the scientific discoveries into the rural communities. Moreover, little research has been made about the current situation of Haitian TVET within the agricultural system. This study used basic qualitative methods with a constructivist approach, and backwards design as theoretical framework to explore the employment of TVET graduates within the Haitian agricultural system. Schools' directors and teachers were individually interviewed, and focus groups conducted with the students, which revealed the employers of TVET graduates, the types of jobs they realize within the system and the external factors that affect employment opportunities. Employers of technicians were most likely public sector, NGOs and IOs as well as entrepreneurship activities. These TVET graduates' job profiles are in extension performing versatile work, or as entrepreneurs. Their employment opportunities were affected by the overall unemployment, the existing opportunities in agriculture, and lack of government support.*

*Keywords:* Haiti; employment; technical schools; agriculture

### **Introduction & Literature Review**

According to the Food and Agriculture Organization (FAO, 2002), 70 to 75% of poor people live in rural communities. This situation suggests that food production is an issue in many countries. FAO (2006) also reported that 39 countries in the world still had critical food insecurity status in 2005. Food availability and access to the available food are the main components of food security, along with nutritional values of food supplies (FAO, 2003). In order to increase availability of food, agricultural productivity would need to increase as well. Fuglie and Wang (2012) found that developing countries had less agricultural output per acre of land per worker than industrialized countries, therefore had more potential to increase their food production in the future. On the other hand, increased agricultural activity has been found to influence developing countries' Gross Domestic Product (GDP) per worker (Gollin, Parente, & Rogerson, 2002). Haiti's GDP has decreased for the past twenty years (FAOSTAT, 2018). This may be because the country is also in a critical food insecurity status, with close to half of the population is undernourished (WFP, 2018). However, Haiti only has half of its arable land currently being cultivated according to FAOSTAT (2018). The current picture establishes the need to modify the agricultural system within it. Extension activities may be a convenient tool in introducing systemic changes in the Haitian agricultural sector. On the other hand, it has been reported that graduates from technical schools (e.g., Technical, Vocational, Education, and Training, TVET) conduct most of the extension work in Haiti (GFRAS, 2017). As a result, it becomes important to understand their expected and actual occupational roles within the agricultural system.

Basu and Majumdar (2009) found that TVET was a good strategy for poverty reduction and rural development in developing countries, because it allows for human capital building. UNESCO (2017a) proposed TVET as a contributor to employment and a way to reduce social inequities. This same organization identified the guiding principles of TVET, which were employability, decent work, growth, equity, and so on (UNESCO, 2015). A study in Nigeria also found that TVET allowed young people to develop job creation skills (Edokpolor & Owenvbiugie, 2017), but in general, the market required for workers with flexible skills (King, 1993). However, TVET does not have a preferential position in developing countries because it is believed to be reserved for students from a specific economic class (King, 1993). In Ghana, for example, TVETs tend to lead to lower salaries and limited mobility and growth (Darvas & Palmer, 2014). Although in this same country, TVET is a great contributor to combating youth unemployment and industry productivity issues (Darvas & Palmer, 2014). Generally, TVET institutions did not have sufficient connection with industry employers (Freer, 2015). Quality and relevance of TVET is improved by its link to labor markets, as well as TVET institutions management and their ability to generate knowledge and research (UNESCO, 2016). This relationship will vary based on the type of TVET. In Europe, three models have been identified the market model, the state-controlled model, and the cooperative or dual model (Koudahl, 2010). The dual model combines advantages of other models, such as high employability resulting from relationship with the industry, and broad training provided by the state (Koudahl, 2010).

### **Theoretical Framework**

Constructivism has positive influence on students' learning cognitively and socially (Powell & Kalina, 2009). Vygotsky's social constructivism puts emphasis on how social interactions build the meaning-making process and learning; on the other hand, Piaget's social constructivism emphasizes more on how individual cognition relates to social processes (Bozkurt, 2017). However, they both rely on participative methods in education, and need to transpire in teaching strategies, curriculum and instructional materials (Jaramillo, 1996; Powell & Kalina, 2009). As technical workplace starts to demand higher-order thinking, TVET slowly adopts constructivism, because it has historically been behaviorist, competency-based with external imposition of skills requirement (Doolittle & Camp, 1999). Backwards Design uses the desired outcomes of instruction to inform appropriate assessments, which in turn determine the instructional activities and materials necessary to attain desired results (Wiggins & McTighe, 1998). The study integrated the principles of Backwards Design to grasp the influence of employers of Haitian TVETs graduates in the training provided in the agricultural TVET schools.

### **Purpose**

On a broader level and part of a larger research project, this study sought to better understand agricultural TVET in Haiti. The objective of this study was to investigate the types of employment opportunities for graduates from agricultural TVET schools in Haiti.

### **Methodology**

This study was basic qualitative (Ary, Cheser Jacobs, Sorensen, & Walker, 2012), using semi-structured interviews and focus groups. The study sample was selected

based on all cases within the targeted population (Harding, 2013) of the Ouest department of Haiti, which consisted of three schools in Petit-Goave and one in Montrouis. Stratified sampling was used at each school, with the director and three teachers being interviewed and a focus group with nine students (Ary et al., 2012). Typical cases were selected for each school (Miles, Huberman, & Saldaña, 2014), except in Montrouis, which was a university, deviant cases were chosen to respect the research focus (Ary et al., 2012) and only one student was interviewed. In addition to the interviews and focus groups, the lead researcher made general observations of school facilities. Interview guides were written in English and then translated to French and Haitian Creole. Interviews and focus groups were conducted in Creole by researcher at the interviewees home, office, or campus at their convenience. Interviews and focus groups were audio recorded. The researcher also kept a journal (Yin, 2016). The researcher conducted the initial coding in English directly from the audio recordings (Ary et al., 2012; Miles et al., 2014), rather than transcribing and then coding (Green, Franquiz, & Dixon, 1997). Initial codes were organized in to themes and sub-themes using the constant comparative method (Saldaña, 2016). Each school was coded 01, 02, 03, or 04. Directors were coded D-01, D-02, D-03, and D-04, with the number representing the school number. Teachers were coded by school and then T1, T2, and T3. So, teacher 2 from school 3 would be 03-T2. Student focus groups were coded FG-01, FG-02, FG-03, and FG-04, with the number representing the school number.

Multiple steps were taken to ensure trustworthiness and rigor. First, two peers, fluent in English and Creole, each reviewed an analysis of teacher interviews to establish trustworthiness (Creswell & Miller, 2000). Quotes were reported verbatim translations

directly from audio. Member checking was used to ensure validity of data by returning to the directors synthesized versions of their individual interviews (Cho & Trent, 2006; Hoffart, 1991); three out of four gave their feedback. Data sources were triangulated through multiple data sources (directors, teachers, and students) as well as data collection methods (interviews, field notes, and observations) to further ensure rigor (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014).

To provide a better context for this study, the participants and schools are described to allow the reader to determine transferability. The directors and teachers were all male and relatively young. They were most of them agronomists and worked halftime. A few had technical degrees as well. Only three of the educators had a master's degree, and they worked fulltime in the institution. Most of them owned their businesses or had teaching positions elsewhere. In all four focus groups, students reported family activity to be commerce and/or agriculture. There were nine women, mostly in FG-03, and nineteen men in total. Their ages seemed to include a relatively wide group of people. Many had worked or studied before. Except for 04, which was a university delivering bachelor's degrees, the schools were technical institutions offering the agriculture option. In general, their program was reported to last between two to three years, but 04 functioned on a credit system. It also required the maximum an entry level of philo, while schools 01 and 02 required only 3e; 03 demanded 2e. School 04 was an accredited university, but only 02 had INFP certification as a technical school.

### Findings

Three themes emerged from the data about employment opportunities for TVET graduates. The first theme focused on employers. The second focused on the types

of jobs they take. The third focused on external factors that affect employment.

### Employers

According to the respondents interviewed, most graduates from agricultural TVET from the schools selected either work for the public sector particularly the BAC (Bureau Agricole Communal) or the private sector; they also massively seek employment in the Non-Governmental Organizations (NGO) and International Organizations (IO) in the country. However, they are encouraged to start their own businesses, and some choose to pursue a bachelor's degree. This situation is best summed by teacher 03-T2, "the student you're preparing to ask for a job or create an enterprise." This is summarized in the three themes of: (a) public/private sector, (b) NGOs and IOs, and (c) entrepreneurship.

**Public/private.** Many graduates go to work either in the private or in the public sector, especially BACs, which have been mentioned by a few respondents (D-02; D-01; 04-T3; 01-T3). Students recognize that there are multiple opportunities, FG-03 said, "An NGO may be recruiting, or the state may also be recruiting, and you can drop your documents so as to participate in the competition [entrance examination]." Like the NGOs, the public sector has an interest in technicians because of their roles in extension activities, which was brought up during FG-02 "upon request of the public or private sector to give them [farmers] the good technical norms for them to farm." Working in the public sector is sought after by the students themselves "we want to work in partnership with the state" (FG-01). The school also desires it, like D-02 declared, "students have internships with the state; we give students to the BAC; BAC employs them sometimes too." A teacher (01-T3) said "we sent some graduates to do internships in the BAC." There are also the

pessimistic amongst the students in FG/E-04 “the state does not take [employ] people, even the ones it trains.” Teachers like 04-T3 said “the state doesn’t have the capacity or simply doesn’t hire technicians.” Although he recognizes “before they used to, when the Ecoles Moyennes d’Agriculture [EMAs] were functional [...] in each BAC the state used to attach an agricultural technician.” D-04 reported that in his institution, the connection with employers starts even before the students graduate “most students we have studying technical are financed by organizations” such as the presidency bureau, senate, the chamber of deputies (representatives), local and international organizations, not so much NGOs. Despite this relationship, many felt like “an agricultural technician cannot put in his head that after graduating he’ll wait for the state to approach him” (FG-01). As a result, “when they graduate from here if they find a job that is OK but if they don’t, then with the knowledge they cumulated they can create own economic activities to get ahead on their own” (03-T1). Therefore, most teachers, students and directors felt like 03-T2, who summed it up by saying “you’re preparing these students not only to have the capacity to be able to work in public or private [sector], you also prepare them to be able to develop their own leadership and become entrepreneurs in their communities.”

**NGOs and IOs.** “NGOs” was the direct answer director D-02 gave when asked where his graduates go work, but then he added, “Some have their garden [farm] as well.” This first instinctive answer and its duality are characteristic of most of the answers received throughout the interviews. 04-T3 thought that “the majority of agricultural technicians go work in NGOs.” Some students felt the same way (FG/E-04) “only NGOs sometimes when they come they take [employ] people.” Teacher 01-T3

said “particularly the NGOs when they recruit, they always take [employ] agronomists but they also call-out for technicians.” The situation is such that “these NGOs always need technicians” (03-T2). Therefore, according to 04-T3 “because many NGOs do more work in accompanying the farmers they need technicians and hire technicians more.” The relationship between NGOs and technicians seem to be tied to extension work, which is the technicians’ role within the Haitian agricultural system. As a result, they have a relationship with some of the schools which provide the graduates they need as D-02 attested, “most organizations come here [at the school] to hire technicians.” This reality is so prevalent that it is linked to moments in recent history where NGOs multiplied in the country and so “around the period of 2010 there were many NGOs here [in Haiti]; there were a lot of students as well” (D-02). On the other hand, not everyone was as optimistic about the job opportunities from NGOs in current times as FG/E-04 revealed “in the agricultural sector, it used to be Vision, USAID, Caritas taking people but nowadays they don’t take people anymore... Food For The Poor used to take as well but doesn’t take many anymore.” However, they may still be the first employer, as 04-T3 claimed that “there are less technicians employed or hired by the state now, it’s mostly NGOs.” Some of the students were already working with NGOs, as someone in FG-03 explained, “There are NGOs that come to work, I work as contractual in the field.” Others had role models, who worked in or have formed their local NGOs, like this student from FG-02 “my reference is a group of agronomists who are serving in the zone where I’m from, whom always help the peasant.” This group of professionals have formed a local NGO which does extension work in the rural area where he grew up. 04-T2 argued that the reason students want to work in NGOs is

“in our case here [Haiti], every person who studied agronomy or technical, is a person who has a vision for NGO because they’ve been told there’s money in that.” There is an ambiguous relationship with NGOs though. 01-T2 shared, “I don’t prepare the students for NGOs” as there may not be any at the time they need employment, but “the NGO is a possibility that exists” for them; or as 03-T2 put it, “you won’t always find NGOs recruiting; you won’t always find that the state has a survey program.” In conclusion, as D-01 described “we train the kids, they may still go work in an NGO, they may still go work in the public sector, and they may still go work in another institution.”

**Entrepreneurship.** Making their own opportunities was discussed. Teacher 01-T1, thought that students must “not wait for the state or for NGOs to come” in the country to provide employment, because “an agricultural technician after studying agricultural technic will be available on the job market but is also able to create own activity” (FG-03). Teachers agreed that “they may create own institutions or may be called by other institutions to work” (01-T3). However, ideally, according to 03-T3, “the student must not wait [for jobs].” Since they have not graduated a cohort yet, D-03 could only say, “We do not have a product yet.” Nonetheless, there is an underlying message that there are not enough employment opportunities so 01-T1 claimed, “we must create the jobs ourselves.” The financial obstacle to entrepreneurship was mentioned by students, from FG/E-04 a student shared “[the technician] can start own activity if he manages to find funding somewhere,” and FG-03 said “if you have financial means you can even become a young entrepreneur in the field.” For the most part, directors, students and teachers really prefer this option (FG/E-04; FG-03; FG-01; D-01- D-02; 04-T2; 02-T1- 02-T2; 01-T1; 01-T2; 01-

T3; 03-T1; 03-T2; 03-T3). 02-T1 said that “students must focus on entrepreneurship.” Entrepreneurship seems to be the favored choice even if there were many employment opportunities, like FG-03 stated, “Then you will not have to waste your time working with neither an NGO nor the state, because a personal activity is more profitable to you.” The impression is that self-sufficiency is a better option, which allow for more financial benefits than any salary could. Director D-01 declared, “We mostly believe in income generating activities.” Teachers were convinced as well that it is the best option like 04-T2 “every technical in the field should be an entrepreneur,” and 01-T2 said “I advise them, the class, to organize themselves and build up an institution.” The students receive a unified message from the school and are in total agreement, so much so that, according to D-01, “some students have started right now to have their own garden [...] we have many of them that went out [graduated], they all have their own things that they’re doing.” Therefore, current students and graduates are opting for entrepreneurship rather than try to look for employment elsewhere. 01-T2 had even advised his graduates to start their own activity and they have managed to do it; now they come back and tell him he was right “I am the one financing my studies for a bachelor’s degree.”

### **Types of Jobs Taken by Graduates**

Graduates from agricultural TVET schools are taking many kinds of jobs. Jobs were organized in to the sub-themes of: (a) extension, (b) entrepreneurship, and (c) versatility.

**Extension.** The technician must work in extension because “the role of the technician is to accompany farmers for intensification of agriculture” (02-T1). “They are the ones to make contact directly with the peasants and they are very

motivated to be in contact with the peasants” (04-T1). Students concur with the teachers’ views on technicians’ role with farmers. In FG-01 they asserted that the “role of an agricultural technician is to work the land [farm], also give training to the peasants so they know where they’re at with agriculture.” According to 03-T2, even when organizations employ them it is because “they need extension agents to work in the community base organizations [so] they always call out technicians” to “show them [the farmers] the methods to plant and how to cultivate the land” (FG-01). During FG-03 this student explained how “little by little you can change their [farmers’] technique” by “comparing your methods to what they’re used to.” The technician is to “choose a small parcel” in the farmer’s land and “you see the difference” between techniques. Through the best practices, food security can be achieved. “For example, the food insecurity issue, if the government, the ministry of agriculture, the ministry of environment, want to do serious work in the country they need to call out agronomists, they need to call out technicians” (01-T3). The work they do is to help in increasing food production, as D-01 clarified, “if we train more people, people will work more,” they will be able to produce “more legumes, more corn” etc. Technicians ought to help in environmental issues as well, these students in FG-03 recognized, “the more we stay, as agricultural technicians, in the cities and don’t go up the mountains to train the peasants, our soil is getting more degraded.” 01-T2 supported that “this [course of soil protection] will help them protect the environment.” A few teachers have reported that they give an environmental focus to their courses on purpose “we raise awareness in the students so that in 15-20 years, I mean in the long term, we may not have the vegetation cover we currently have in Haiti” (01-T3). Reforestation, amongst

the many facets of environmental issues was reiterated the most. For instance, a student in FG-01 who would like to work in reforestation “to give another face to agriculture.” According to 01-T3 “the people don’t have sufficient information to know how to protect the trees,” which he believes is the technicians’ role and something he is preparing his students to do. FG/E-04 was the only one who made a clear distinction between extension agents and technicians. For him agents, who spent less time studying, but are now called technicians as well, should do the extension work, not technicians.

**Entrepreneurship.** The main message is that the students may find a job with an institution, but agricultural TVET schools are not focused on training employees for institutions. 01-T1 bluntly asserted, “I don’t prepare people to find jobs in institutions.” Most teachers recognize that they “don’t give them a training where tomorrow when they leave they go looking for jobs, become employees; we give them information to guide them towards entrepreneurship” (03-T1). It is a conscious choice on their part “Lets’ focus the students on self-starting” options, according to 03-T1. Students also see their future through the same lenses, for example during FG-01, someone revealed, “If you’re called a technician it automatically means that you’re someone who can produce on your own without other people’s inputs.” Director D-01 instilled the idea through the whole culture in the school, “we already tell them to come with a plan [...] so I may start helping them to realize it. Some say I’ll start with 2 goats, I’ll start with 3 goats, or others tell you, it is swine, I’ll try with pigs.” The strategy bore fruits, “we have many of them that went out [graduated], they all have their own thing that they’re doing.”

**Versatility.** At the end of the day, what is desired is a technician, who is

capable of facing a variety of tasks and work situations. Teacher 02-T1 said we are “preparing the students for all types of jobs in agriculture.” Therefore, they felt they “must train the students up to the requirements of these [multiple] tasks” (03-T2). Students also knew that must be versatile, a student in FG-02 claimed, “I’m ready to work in whatever job related to natural resources, soil conservation, and animal health,” because according to teacher 03-T1, “we have a multidimensional training here.” This training is what the students came for, as FG/E-04 explained, “I would like more or less balanced competences.” Other students evoked these balanced competences as well, in FG-03 who claimed, “We’ve become balanced people.” What they mean by balance is the ability to work on various agricultural subfields such as “in the animal and vegetal parts you’re open, doors are open for you in both” (FG-03). He thought someone may choose one or the other based on his or her preference. In conclusion, it seems that “in agricultural technic, when I look, we don’t have a limit, we’re not limited” (FG-03).

### **External Factors that Affect Employment**

There seems to be a few reasons why students may have difficulty finding employment in the country and those reasons are external to the school and the TVET system. The unemployment situation in Haiti and state’s failure towards the sector affects employment negatively. 02-T1 stated, “It’s hard for everyone to find jobs here in general.” On the other hand, other opportunities, like government jobs, were reported that are related to agriculture and technical studies in the country. Three sub-themes emerged from the data: (a) unemployment, (b) government jobs, and (c) government support.

**Unemployment.** The unemployment issue “it’s not just for agricultural

technician, it’s for all sectors, it’s difficult especially in Haiti” to find jobs (01-T2). The lack of employment is a direct consequence of the country’s overall poverty, as teacher 04-T1 explained, “let’s take Haiti as a poor country first of all, and when we see poverty images we must see that there are no jobs or not enough jobs.” Encouraging students towards entrepreneurship derives from the realization that “we live in a country that doesn’t have job opportunities, a country with a lot of unemployment” according to 03-T1. The educators think that they cannot hide from this fact. 01-T1 said “we’re very realistic, we know that there are no jobs.” There are some strong feelings as well, from certain people, like 01-T1 who abruptly answered, “In Haiti let’s not talk about the job thing.” FG/E-04 recognized as well that “in Haiti it’s a complex problem for youth to find jobs after university.” He also thinks that “teaching classes in high school” is the “only market that’s more or less available to receive people.” When asked if he felt that his graduates were getting the jobs they were trained for, D-04’s answer was quick and direct, “in Haiti I’d say no,” students do not find jobs that allow them to apply directly what they have learned in school. He told the story of doctors who drive taxis in the USA and an agronomist in Haiti who owns a cement depot business. As FG/E-04 put it, “if it was for the state, there’s no market; if it was for the private sector, they don’t really have farms to employ people.”

### **Opportunities in agriculture.**

Despite the overall unemployment situation, agriculture seemed to offer more prospects to young people than other trades. In the past the government of Haiti used to employ technicians as they graduate, 04-T3 explained, but “there had been a lot of revolt from agronomists because the state only had technicians in the BAC,” so now as a result, “there are less technicians employed or hired by the state.” Many people have chosen

agriculture because they think it offers opportunities. For instance, some students, one in FG-01 felt grateful to agriculture because “I see what agriculture does for me [...] we can say that the most money we’ve made in our life has been through agriculture.” In this other focus group, FG-02, a student who was a nurse before decided to switch to agriculture because she has seen many technicians and other people in the agricultural field work, and she was inspired by them. She also “wanted to make a little bit of money with them,” she said as the group laughed. She wanted to find “an opening to participate with them.” Therefore, she abandoned nursing, and made a career switch to agriculture. Not just agriculture, there seems to be opportunities for agricultural technicians. D-04 revealed that “some [of his students] have bacc II and choose to get into the technical program because market is waiting for a technician,” when a bacc II would allow them to enroll to the bachelor. According to him, others have studied and “finish with a license [bachelor] program but haven’t completed their memoir, [so] they request the diploma to go work.” Although these graduates are technically agronomists, they request the technical diploma and find work rapidly with it, so they do not spend the time completing their memoir, because “in the meantime they have a legalized diploma from the ministry of education, which allows them to have access to the job market.” D-04 went on to clarify “so you may find them on the ground, working with a technical diploma, nevertheless, they have completed the 5-year cycle of studies,” “they just have to defend their memoir to obtain the agronomic engineering degree.” Despite all this, technicians’ salaries are inferior to the earnings of agronomists with a bachelor’s degree. The competitive factor for them is how fast a technician gets employed as compared to an agronomist,

because organizations need more technicians to realize the type of jobs they are qualified for. D-04 explained again, “they both [the agronomist and the technician] work in microcredit, but one works as a microcredit agent, and the other as a coordinator.” He went on to say “the coordinator has a more interesting salary and more social benefits than the technician who doesn’t have that.” However, the technicians may get jobs faster than the agronomists may, because for one coordinator there are many agents needed. This other director, D-02, did not usually present himself as an agronomist, which he was as well, but as a technician, as he has both degrees, because there are more opportunities for him as a technician than as an agronomist. He says that “most of my prowess, I’ve done with the technical degree.” He has contact with some association of agricultural technicians in France and plans to take some of his students with him on a trip there. FG/E-04 bluntly stated, “for me, the majority of agronomists I know who do fine in life [...] are people who, after graduation, have benefitted from a scholarship from USAID or benefitted from other” types of academic opportunities.

**Government support.** Another issue external to TVET is migration. Teacher 02-T3 was an agricultural technician doing community outreach with friends on reforestation in the rural communities and the activities had to stop because of the flux of migration towards Chile. “The majority of the youth don’t see that it’s about getting together and do something serious, they mostly see let’s go find something [elsewhere]” (02-T3). He became a lawyer. The rural communities are being deprived of their youth, therefore, of their workforce. D-01 complained, “the youth, the people have to live; everybody can’t go to Chile, everybody can’t go to Brazil, everybody can’t go to the USA, to Canada.” However,

they all feel that the government is failing them. First of all, 01-T2 said “there’s no credit” for loans to start a business, even though they encourage entrepreneurship. Students are aware that “the biggest problem our country is going through right now is that there are no investments from the state” (FG-01). Some of FG-01 students felt that the government needs to help them with their businesses, either by providing start-up money and/or materials, or by providing them with a market at the end of the production cycle. But they disagree on where in the value chain the government should help. One of them, in FG-01, rebuked “the only thing I may need from the state is to sell what I’ve produced.” Others think that the government could assist throughout the cycle. As an example, one student (FG-01) said “an agricultural technician specialized in nurseries, example someone like me, should get support, getting land or materials to work.” The state could also buy the product even at a lower price and “they could use these nurseries to reforest the country” (FG-01). They also think that it is the government’s responsibility to provide them with continuing education. “A technician, even after graduating, the state should continue to invest in him, he should receive training and participate in other seminars” (FG-01). Ultimately, the model of success seems to be a Haitian entrepreneur who is financially stable and decides to reside in Haiti. 01-T2 took the example of his successful technician friend who does not need to travel abroad because he is being successful with his business.

### **Conclusions, Recommendations & Implications**

Graduates from agricultural TVET schools are gaining employment with a variety of employers, including as self-employed entrepreneurs. Within these organizations, TVET graduates were taking

a variety of different positions, many with extension-like responsibilities. The ability of a technician to be versatile was noted. However, graduates faced many external barriers to finding employment.

TVET graduates are working in the public/private sector; working for NGOs and IOs; and working as self-employed entrepreneurs. Most of the graduates worked in NGOs or IGOs, which are not local organizations and usually have short-term span projects that function with donations from governments or individuals with a definite agenda, often contrary to Haitians’ interest (Zanotti, 2010). This type of employment does not ensure employment security, nor does it reinforce Haitian agriculture, on the contrary it has been found to hinder it (Zanotti, 2010). The state, who was an important employer of agricultural technicians through the BACs, was no longer providing much employment to the graduates, which increases rural migration due to poverty. The trend towards fewer government jobs in extension was also noted by Albert, Roberts, and Harder (2017a). The private sector was reported to be absent from agricultural activities. Under these circumstances, the schools all decided to emphasize on entrepreneurship.

Graduates from agricultural TVET schools are taking many kinds of jobs. Jobs were organized into the sub-themes of: (a) extension, (b) entrepreneurship, and (c) versatile. This versatility required from the technicians, justifies the constructivist approach newly introduced to TVET, as it was mostly positivist-behaviorist, with little emphasis put on internal building of knowledge by TVET students (Doolittle & Camp, 1999). Although the possibility to work in existing NGOs or public agencies was not eliminated and sometimes mentioned, the system seemed to prefer self-employment, as Oketch (2007) also claimed to be a function of TVET in many African

countries. The importance of entrepreneurship skills for agriculture students was also noted for graduates of agriculture universities in Haiti (Albert, Roberts, & Harder, 2017b). A study in Nigeria, found that TVET permitted youth's skills development for job creation in the agricultural sector (Edokpolor & Owenvbiugie, 2017). Many of the respondents recognized that technicians' role should be doing extension, providing training to the farmers about how to increase yield while being sensitive to the environmental issues, like it is the case in many other developing countries (Atchoarena, Wallace, Green & Gomes, 2003). Swanson and Rajalahti (2010), found that in many countries, diploma-level graduates, rather than university graduates, are hired for field extension services. For this reason, they must be trained to work in a wide variety of agricultural subjects. The new trend is for "more flexible workers" (King, 1993, p. 210). In these countries, the government agencies train these workers for their own agricultural field level extension services in many areas like forestry, fisheries, and so on (Atchoarena et al., 2003). However, the decline in demand prompted them to adapt the training to respond to diverse skillset needed across a wide range of organizations (Atchoarena et al., 2003). The teachers in the selected schools all seemed to have gotten to the same realizations that training must respond to important global issues, such as environment and ecosystems, self-employment, etc. (Atchoarena et al., 2003).

However, graduates also faced barriers in finding employment like chronic unemployment, lack of government jobs, and lack of government support. These barriers were important to take into consideration because they influence the knowledge required to perform; what Bowen and Graham (2015) referred to as

"looking sideways" when using backwards design to come up with the desired end of key stakeholders. Based on types of employers only, these schools would have never realized that entrepreneurship courses and focus were necessary for graduates' success upon completion of their studies. One of the most recurring themes during interviews about future employment was the fact that people generally claimed that there were no employment opportunities in the country. In developing countries, TVET funding depends on various sources such as the government, individuals and employers (Atchoarena et al., 2003), suggesting that a lot of support from the government is generally recognized.

Recommendations for research could be to investigate the employment reality in other geographic departments of Haiti for agricultural TVET graduates and the position of the schools on entrepreneurship as a possible countrywide movement. It can be helpful to understand better the relationship between public extension agencies with TVET school graduates. It seems crucial to discover the skills and competencies that employing organizations look for in a technician, as well as the perspective of farmers and rural communities on their extension requirements from technicians. Finally, a study with graduates themselves may be an important source of information about employment opportunities.

Recommendations for practice would be, as some participants mentioned themselves, for the state to provide markets to agricultural projects of technicians' cooperatives, as well ensuring proper microcredit is given to agriculture-related projects. In order to do so, the ministry of Agriculture would need to get involved more closely to private TVETs, not just to the public EMAs it manages. It would also require it clarified its relationship to the

ministry of Education, particularly INFP. As a participant mentioned, it can be interesting for the state to combine the technical schools with extension activities into the multi-options technical and vocational learning centers.

There are also a few recommendations for trainings that emerged from the findings. It would be justified for directors and teachers to understand the importance of backwards design in the writing of cursus and curricula, so as to incorporate employers' requirements into the program of study. Other professional development for the students of TVET can be related to their expected extension competencies, more specifically, communication skills and those related to adult education. These were also noted as a need in the agriculture universities by Albert et al. (2017b).

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