

**HIGHER EDUCATION IN AGRICULTURE AND SUSTAINABLE DEVELOPMENT IN
HAITI**

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ABSTRACT

During the last thirty years, environmental and agricultural indicators of Haiti have been declining. This situation has had bad consequences over the Haitian population life. At the same times, a number of institutions in Higher education in agriculture are increasing. However, until now, there are no studies that focus on the curriculum of such institutions in relation to a sustainable development of the country. Therefore, a curriculum evaluation of two representative institutions of higher education in agriculture in Haiti has been carrying out since January 2012. The purpose of this study is to find out how the curriculum of those institutions contributes to a sustainable development of the agricultural and environmental sector of Haiti. A case study of two institutions (one public and one private) is considered in this work to achieve this purpose. This paper aims to present the primary results of this study at this first Annual International Interdisciplinary Conference on "Entrepreneurship and Sustainability: From Lifestyles to Innovative Enterprises in Creative and Sustainable Economies" at the Kenya School of Monetary Studies Campus from April 2th to 4th, 2014.

Key Words: *Curriculum evaluation, higher education in agriculture, innovative education, sustainable development, Haiti*

Introduction

Since January 2012, we have been carrying out a research over two Haitian Institutions of Higher Education in Agriculture (IHEA). This investigation, which is a curriculum evaluation, is a PH.D project in the program of Doctorado en Ciencias en Educación Agrícola Superior which takes place in the Rural Sociology Department at the Autonomous University of Chapingo in Mexico. However, this evaluation is kind of different from others because it tries to link the impact of the curriculum of those institutions over the environmental and the agricultural sector. The main problems on which this research focuses are the degradation of the environment and the decreasing of the agricultural sector while IHEA are increasing.

In fact, if before and during the colonial era, vegetation and tree cover were dense, nowadays it is less than 3.2% (FAO, 2010). Some authors talk about less than 2% today. As consequences of this situation, eighty-five percent (85%) of the country's watersheds are degraded. Each year, more than 12 thousand hectares of arable land are being eroded (MARNDR, 2011).

Indeed, Haiti is a mountainous country. The Ministry of Agriculture, Natural Resources and Rural Development (MARNDR, 2011) estimates that fifty percent (50%) of the area of Haiti (13 875 km²) has more than forty percent (40%) of declivity. Then, the potential of exploitable land (cultivable) of the country has been estimated at twenty-nine percent (29%) or 7700 km². However, population pressure on natural resources conduces to an overexploitation of these resources. According to the MARNDR, mentioned before, forty-four percent (44%) approximately 11 900 km² of the total land area is cultivated. This situation implies that more than 15% of land that should not be cultivated is. It also leads to an irrational exploitation and an alarming degradation of natural resources of the country.

By considering the agricultural sector, it is important to mention that, in the past, Haiti was essentially an agricultural country. This activity played a major role in its economy. Before its independence in 1804, the colony of France that was Santo Domingo (today, Haiti) was very prosperous. Many cultures made it the richest of all other French colonies: sugarcane, coffee, cocoa ... France was a great and rich metropolis because Santo Domingo was its property (Glied, 2014). After its independence, agriculture continued to play an important role in the economic balance of the new Republic. Coffee sales helped President J. Boyer to pay the debt of independence to France. Now, agriculture sector represents only 25% of the Gross Domestic Product (GDP) (MARNDR & FAO, 2013).

The population is growing increasingly. Currently, it was estimated to 10 413 211 people in an area of 27,750 km² (Hurwitz, 2013). The country became the poorest in the Caribbean region and one in the world. The living conditions of the Haitian population are alarming. According to Hurwitz (2013), in 2011, 55% of the population lived with average incomes below the extreme poverty line of one dollar per person per day and 71 %, nearly 6.2 million people below the general poverty line of \$ US 2 per day. The country is almost entirely on international aid.

Political situations, particularly political instability makes that any development project can provide sustainable solutions to the country (Pierre, 2005; Pierre, 2011; Joseph and Pierre, 2011).

However, Haiti cannot ignore the development of the agricultural sector if it wants to change the living conditions of its people. The agricultural sector employs 65% of the active labor force of the country (IHSI, 2005). It is the activity of the majority of the population particularly those who are living in rural areas (MARNDR, 2011). The country possesses the climate and soil conditions to develop this sector (PNUD and FAO, 1969; GRET and FAMV, 1990). But it is really important to find a balance between the agricultural development and the preservation or the conservation of natural resources of the environment. This is what we call a sustainable development of the agricultural and environmental sector.

To reach this development, we support in this paper the idea that it has to pass necessarily by the development of Institutions of Higher Education in Agriculture (IHEA) in the country (IICA, 1997; Acker, 1999; World Bank, 2000; Pierre, 2009). Two reasons can explain that. First of all, IHEA are responsible to train agents and professionals who work or will work in this sector. Secondly, they are responsible to find solutions (formulas or techniques) to solve the agricultural and environmental problems. However, it seems like this role of the IHEA is not well defined.

Over 80 years ago, the Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) of Haiti created an agricultural school which became today a college of agriculture and veterinary medicine -in French Faculté d'Agronomie et de Médecine Vétérinaire (FAMV)- which is responsible to train qualified cadres to respond to the country needs in this area (UEH, 2014). However, during almost the last 30 years, and at level of higher education in agriculture, a number of private institutions or agricultural schools have been created (GTEF, 2010). The creation of those institutions is the consequence of the limited capacity of the FAMV of the State University of Haiti -Université d'Etat d'Haïti (UEH)- to respond to the demands or to the needs of young people that come from high school every year. Each year this college of agriculture of the UEH selects approximately 100 students between 2000 and 4000 candidates. This leads to a very lucrative market for the private sector by creating colleges of agriculture in many of the private universities. But the quality of the training given in those institutions is another issue.

Many do not have an academic farm, a laboratory or a library. The issues of human and financial resources (teachers, other professionals) are many other limitations of these IHEA. The problem of human resources is not only characterized by the quantity, but also by the quality. Except for the college of agriculture of the state, all the others depend economically and fundamentally of the student's fees or tuitions. Most of the time those contributions are not enough to solve the economic problems of those institutions.

The Haiti earthquake of January 12th, 2010 complicated furthermore this situation. According to an official government report of Haiti (Haiti-PDNA, 2010), approximately 1.5 million people, representing 15% of the national population, have been affected directly. Over 220 000 people

were killed and over 300 000 injured. Approximately 1.3 million people lived in temporary shelters in the metropolitan area of Port-au-Prince and more than 500 000 have left the affected areas to seek refuge in other parts of the country. In addition to the human impacts, this tragedy has, according to the same source, many impacts on the environment and the infrastructure of the country. This earthquake has added significantly risks to pollution to the population of the areas already affected and increased pressure on the environment of the country. To what concerns education, according to this official report, more than 1 300 educational institutions have collapsed or are unusable.

Beyond these infrastructural, human, financial and natural problems we ask: what kind of curriculum do those colleges of agriculture in Haiti have? How does the curriculum of those Institutions contribute to solve agricultural and environmental problems of the country? What should be the role of the curriculum of those institutions in relation to a sustainable development of the agricultural and environmental sector? Those questions are basically the reasons why we are doing this research. Our participation in this event means to share the first primary qualitative results or the progress of this investigation with other colleagues.

About the Literature Review of our Research

In this part of our investigation, we have concentrated a great importance over “curriculum”, particularly curriculum evaluation, and the debate of sustainable development. Both are themes that are not easy to aboard such they call attention and create debate.

We have reviewed many models and curricular theories. But, our research is based on the “critical sociopolitical models” curriculum in action, whose one of its mean author is Stenhouse. In this curriculum model, this author proposes a curriculum for action research methodology and development. For Stenhouse (1998: 29-30), *a curriculum is a tentative to communicate the essential principles and features of an educational purpose, so that it remains opened to review and can be effectively translated into practice. It is the means by which the implement and given educational experience is made publicly available. Then, it involves not only content, but also method, and in its most amplification, takes into account the problem of its implementation in the institutions of the education system.*

The curriculum model proposed by this author and others allows the link between the school and the society. In its theoretical model, solution to problems is not only found by teachers but also by students. Professor reflects on their teaching practice and students are encouraged to think for themselves.

The structuring of the curriculum design, according to Stenhouse (1920, 1998), represents various disciplines of knowledge. The curriculum links the educational institution to the community, perceives or describes the classroom in its largest sense and breaks the classic encyclopedic scientist behavior. This proposal allows contributions to achieve a global process

of training. It allows also a structured, open, flexible, progressive and continued process. Therefore, the teachers' role changes: it's moving from conformist to formative role in which people interact and form educated vision.

Although this model has many critics, it can help a lot in our work. It lets us establish the relationship that should exist between the curriculum and the society. In our case, it lets us see how the colleges of agriculture in Haiti contribute to the training of professionals who can support a sustainable development of the agricultural and environmental sector. To achieve that goal, we intend to evaluate the curriculum proposal of two IHEA in Haiti. However, we insist again that this evaluation is different from an ordinary curriculum evaluation which basically focuses on the goals, the objectives, the content and the environment of the curriculum.

In regard to the sustainable development, Artaraz (2002) said that there is currently no consensus on the meaning of this concept. The question of what should be sustained creates debates. Authors cited by Artaraz think that sustainable development should be: to sustain natural resources, to sustain consumption levels, to allow or to achieve sustainability of all resources (human capital, physical capital, environmental resources, exhaustible resources), to allow or to pursue integrity processes, cycles and rhythms of nature, to sustain production levels ... But if we refer to the Brundtland's report, sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their needs.

According to Gomez País (2008), if sustainable development dated before 1990 of XX century, it was only strengthened as new theory in 1992 from the Summit of Rio de Janeiro. This theory of development, according to him, is closely related to the theory of human development. The difference between both is that the first (sustainable development) includes the issue of environmental problems strongly, although the concept of human development is integrated.

Indeed, the theory of sustainable development looks for a balance between economic, social, and ecological development with emphasis on the future. Therefore, according to Gomez País, cited before, this theory conceives the development not only in the short and medium term, but also in the long term. It is important to mention that in the Rio Declaration, sustainable development was seen in a three-dimensional basis (economic, social and ecological) and this was a new development model (Gomez País, 2008). These pillars were the main basis development model in the past. However, today we know that sustainable development is more than three-dimensional (Garza-Gutierrez and Medina-Torres, 2010). In this paper, we consider it in its largest possible acceptance: economic, social, ecological, cultural, technological...

In fact, to evaluate the curriculum of those IHEA in Haiti from the perspective of a sustainable development of the agricultural and environmental sector means for us to identify whether or not there are, in this instrument, "provision", "baggage" or "indicators" (courses, training, infrastructure, resources...) that can provide graduate students knowledge and competency

necessary to solve agricultural and environmental issue from the vision and the mission of those institutions to the application of their study plan. Therefore, the concept and the meaning of evaluation for us is as Siew Hong (2007) has defined it: an “assessment of the worth or merit” of the educational objects of those Institutions. It is also “an assessment of achieving of objectives which can provide the success or the failure of their program” from the perspective mentioned before. Siew Hong (2007), citing Cronbach (1963) mentioned that as the field of evaluation continues to develop, the evaluation process should be focused on gathering and reporting information that can help guide decision-making in an educational program and curriculum development. This point of view corresponds exactly to our third specific objective which consist to contribute to the development of a new curriculum model for those IHEA depending on the outcomes of our research.

About what concern our Methodological Strategies

Our research uses a mixed method with qualitative and quantitative approach. According to Hernandez-Sampieri (2006), the mixed approach is a process of data collection and analysis that enables the linking of these. Many reasons can explain why we use this approach. As well said Hernandez-Sampieri, the goal of the mixed research is not to substitute quantitative and qualitative research, but to use the strengths of both to minimize their potential weaknesses. Mixed method research is the systematic integration of quantitative and qualitative methods in a single study in order to obtain a complete view over a phenomenon.

In the qualitative part that constitutes the first step of our research, we seek information that already exist and that can help us to strengthen the work particularly in the Theory part. Then, we choose two colleges of agriculture among the 6 most representatives in the country: one private and one public. The results found should help us achieve one of the specific objectives of this research which is: to identify the structural and functioning status of those two (2) IHEAs of Haiti. The following table provides details on the techniques that we used to collect data in this part. In the second step of our methodological strategies, which is quantitative, we plan to do a census on 10 departmental Directors of agriculture and environment who represent the Ministry of both sectors in the 10 departments that form Haiti. We plan to meet some peasant associations and institutions of agricultural employment so that we can understand whether or not graduates of colleges of agriculture in Haiti can help or contribute to solve real agricultural and environmental problems and therefore contribute to a sustainable development of the country. Experts' and graduates' point of view of those IHEA selected should help to amplify the analysis of the results in this step. The goal pursued in that case is to analyze and to evaluate whether or not curricular proposals respond to the needs of the country, particularly of the agricultural and environmental development. The results and the analysis of that step should conduct us to make proposals for a new curriculum model.

Table 1: Mixed method, techniques and application

Mixed method	Techniques	Application
Qualitative	Observation	Faculty of Agronomy and Veterinary Medicine (FAMV) (public)
	Interview	Faculty of Agronomy of the University of the Caribbean (FAUC) (Private)
And	And	And
Quantitative	Census	Agricultural department directors Responsible for representing peasant associations of colleges of agriculture, employment institutions in the agricultural and environmental
	Poll: questionnaire	Graduates, experts etc.

Source: Adopted from Soriano Fonseca (2011) Citing Sautu (2003)

Primary Qualitative Results

As we mentioned before, our research is a mixed research, using a mixed method. In that part, we present the first qualitative results that come out of two visits of exploration realized in those institutions in June 2012 and July 2013. During those visits, we collected information by consulting the curriculum of those institutions and by interviewing responsible, professors, students, etc. We present here the structure and the type of operation of both institutions respectively. After, we present a short discussion or argument before closing this paper by some final considerations. We insist again that all those information come out from official documents of those IHEA, exploration visits and informal interviews.

Structure and functioning of the *Faculté d'Agronomie et de Médecine Vétérinaire (FAMV) of the Université d'Etat D'Haiti (UEH)*

Structure

The FAMV is the oldest institution of higher agricultural education in the country. For many years it was the only institution that has trained technicians and agronomists for the country. From an agricultural school established in 1924, today it is a College of agriculture, headed by the State University of Haiti, which trains Engineer-agronomists. The duration of the scholar cycle is five years. For an application of more than 2000 candidates, only 100 students are accepted each year approximately.

During the first three years, students follow what they call the "common trunk" and there are no specialties. All students follow, in the Department of basic sciences, basic courses that are divided in two: the complementary knowledge which is basic sciences (mathematics, physics, chemistry, biology, biochemistry, agronomy...) and what they call "interdisciplinary knowledge"

such as French, accounting, economics and sociology. From the fourth year, according to the ability of each student (score average during the last 3 years, etc.), to the capacity of each department, students choose and start with their specialization which lasts two years in a department (See Table. 2).

At the FAMV, each department organizes and controls the formation of their students. For the consolidation of programs or specialties offered and the training of the students, the FAMV has eight academic laboratories (see Table.2) and a farm (La Ferme de Damien) of more than 60 hectares.

Table 2: Departments of specialization and Laboratories at the FAMV

Departments of specialization	Laboratories
➤ Department of plant production (breeding)	➤ Laboratory of Plant Pathology
➤ Department of Animal Production (animal husbandry)	➤ Laboratory of Entomology
➤ Department of Natural Resources and Environment	➤ Laboratory of Zoology
➤ Department of Rural Engineering	➤ General Biology Laboratory
➤ Department of Rural Economy and Rural Development	➤ Experimental Physics Laboratory
➤ Department of science and food technology	➤ Chemistry Laboratory
	➤ Biotechnology Laboratory
	➤ Soil Laboratory
	➤ Computer Lab

It is important to notify that each Department has its laboratory although some are common. It is important to mention also that those laboratories extend their services to the Haitian community and to Non-Governmental Organizations which are working in Haiti. For example, any organization or individual may request a soil, water, food analysis provided that they pay for them. However, those laboratories face to many problems after the earthquake that destroyed many of their infrastructures.

The academic Farm of the FAMV

Generally called "Ferme de Damien", it represents a living laboratory for some Departments and students. With an area of 110 hectares (ha), only about 60 ha are under the control of the FAMV. This situation is due to the insecurity problems faced by this academic farm and the work field of the students. Therefore, academic activities are not secured at all in the farm.

Library of the FAMV

As part of a higher educational institution, the FAMV has a library. It is a reference in agricultural and environmental documents, particularly of the country. FAMV's Students can consult, borrow books and other documents as graduates' thesis, reports, etc. The public generally has access but cannot borrow documents. But after the earthquake of January 2010, its situation is much more complicated and affects its services.

Dormitory

The FAMV is one of the faculties or components of the UEH and one of the country where some students may live on Campus. In 2003, it had more than 5 million square feet of residence. Today, the FAMV Dormitory has 74 rooms and each room can take four students. Among those 74 rooms, only four are occupied by women students. They are very few who generally pass the admission test. With a limited capacity to 296 students, a student is accepted as a resident only from the second year. However, the application is sent to a committee bedroom. Depending on the availability and the reasons evoked, the committee gives a favorable answer or not to the applicant or candidate. Although the dormitory was not destroyed by the earthquake of 2010, it was damaged and needs to be repaired so that students can have better services. In fact, they complain about the services offered and reclaim some changes.

Cafeteria

Although the earthquake of January 12th, 2010 destroyed many of the infrastructures of the FAMV, particularly the cafeteria, the service continues today in difficult conditions. It offers two services (breakfast and lunch) daily for the resident students (125) and one (the lunch) to those who are non-residents (325). Access to the service is exclusively for students. The cost is very cheap: approximately 10 gourdes per service (U.S \$ 1 = 45 gourdes in that moment). Students' leaders that we met during our visits, hope that the cafeteria can extend its services. For example, residents could have three services and non-residents, two. For the same reason evoked before (The earthquake), physical space needs to be improved or built.

The auditorium of the FAMV

The FAMV has an auditorium where many activities such as conferences and congresses take places. But the 2010 earthquake has destroyed it. So, academic and scientific events are affected.

Functioning (Operation)

The operation of the FAMV depends primarily on three councils or components: the faculty council, the board of direction and the dean. The Faculty Council is the supreme body of the FAMV. It has three components: the board or council of direction, the board or council of

teachers and student council. The number of the members is not defined. The Board of Directors is composed of 10 members: the Dean, the two Vice Deans and the seven departmental Directors. The FAMV administration is under a Dean with two Vice Deans elected for 4 years. Each Vice Dean is responsible for academic and research activities respectively. Teachers and students council are organized in such a way that they have also impacts on the decisions taken by the FAMV.

For example, students' council plays a great role in the FAMV life. They are organized by promotion committee and representatives of each promotion (10 for the first three years and 12 for the last two) compose the student council of 54 members. They play an important role in the development of activities such as: sports, cultural activities, academic and scientific activities. The council is administered by an executive committee democratically elected. One of them represents the council in the council of UEH. Depending on the needs and the topic under discussion, a member is represented on the FAMV board or Council.

Although the FAMV is older than the UEH, it depends on it. It is one of the 11 Faculties of the UEH and law schools found in different parts of the country besides Roi Henry Christoph University or Campus at North. Therefore, it depends on its tutor in many aspects such as: its budget should be valid and authorized by the rectory of the UEH which submits it to the Ministry of Finance of the state; all students' diploma issued by the FAMV must have the signature of the Rector of the UEH; new applicants are admitted and enroll through the Rectory of UEH, but entrance exams are organized and controlled by the FAMV. However, it has certain autonomy. It can develop and of course has international and local relationships directly with other institutions without necessarily passing through the Rectory of UEH. It has an older democratic life than the UEH. Since 1996, beginning with its first democratic election while its Tutor had waited for years later before having its first democratic election.

To understand the structure and the operation (functioning) of the FAMV has a great importance for our investigation before processing of the evaluation of its curriculum generally. Since now, we understand the difficulties on which this institution, pioneer in the training of cadres for the environmental and agricultural sector of the country, is facing. We can also predict the impacts of such situation (the infrastructural problems) over the education quality of such institution.

Structure and functioning of the Faculté d'Agronomie of the Université Caraïbe (FAUC)

The *Faculté d'Agronomie* of the *Université Caraïbe* (FAUC) is one of the oldest programs of this private University. Since its creation in 1988, this college of agriculture has been contributing to the training of technicians and engineers agronomists around the country. The general context of this college of agriculture is at the University itself. Like this one, it is a private college of agriculture where students are economically responsible for their studies. The vision and mission of that University is to “*propose a quality education based on research and knowledge of the needs of the “environment” by promoting the development of students as*

individuals and as members of Haitian society". Therefore it aims "to contribute to the social, scientific, cultural, intellectual and economic development through educational programs linked to the immediate needs and requirements of the Haitian nation". Also, it aims to promote, overseas, cooperation with others communities in the Caribbean and elsewhere. To this end, the University provides programs that focus on the student's personality development, including intellectual, moral and physical. At the end, it aims to prepare qualified professionals that can put their knowledge to industry, agriculture, public services and underprivileged sectors.

Structure

The FAUC offers two programs based on a credit system: a three-year-program that conducts to a diploma of technician in agriculture sciences and environment; a five-year-program that conducts to a bachelor degree or a license of Engineer-agronomist. Students in the diploma program and also in bachelor degree can choose an option that may be animal production, crop production and natural resources. For the diploma and bachelor degrees, a student needs to pass 50 courses or 150 credits and 66 courses or 200 credits respectively.

During the first two years, students are living on or near the Campus II (on the farm) where they take basic courses and training that prepare them to the specialty. After two years, they can take courses at any of the two main campuses of the University to end their programs. It is important to mention that each student organizes the way and the quantity of courses that he will follow during each period of class. However, at the agronomy coordination, responsible checks whether or not a student can take a course basing on the requirements for taking it. Also, the system allows each student to take the amount of "credits" that they can, basing on their economic and intellectual capacities. But there are always a minimum and a maximum. Although the program is based on 3 and 5 years respectively in diploma and Bachelor degree, a student may end before or after this period based on the above.

Options or specialties

As we have seen before, the FAUC has three options or specialties in any of the two programs: animal production, crop production and natural resources. Each student chooses his option or specialization from the third year under the regular program of 3 three years and the fourth year for the bachelor degree. In fact, there is a year of specialization in diploma and two in bachelor degree. However, responsible of agronomic coordination verifies student's academic background before agreeing to go to an option. In fact, the choice is personal but also academic.

About laboratories

Before the earthquake of January 12th, 2010, the FAUC had two laboratories: one general and organic chemistry and one of general biology. Although they did not work correctly either because of lack of materials or qualified teachers, but they existed. Today, there are no

laboratories. All were destroyed by this disaster that also destroyed the two great buildings of 6 floors of this University and killed teachers, students and workers. Only an academic farm is using as a living laboratory for students of agronomy. However, some teachers may request exceptionally a practice Lab outside of the University.

It is important to mention that the University has two computer laboratories equipped and connected on internet where students can investigate at the main Campus in the Capital. It also has another at the farm (Campus II) which is about 60 km from the capital and where the students have access.

Library

The University has a mini library. However, after the cataclysm of January 12th, 2010, this library cannot play or offer its real service. Students can only consult the few books that actually exist and that do not correspond to their needs. But students have access via internet to Library online that belongs to the Agence Universitaire de la Francophonie (AUF), which is a huge wide Universities located all over the World, particularly in Francophone countries. Although some students have an account to do so, few of them connect to this online library or use this opportunity.

Dormitory

Nowadays, the FAUC is having a new experience. Since 2011, student in first and second years in the program of Diploma or Bachelor degree, have been living in the Farm, Campus II. The dormitory has about 12 rooms for a capacity from 30 to 40 students. It should be noted that only students of the first two years can live in campus. In July 2013, there were 25 active students in the dormitory. The cost is 2 500 gourdes (\$us 1= 45 gourdes in that moment) per student per month. The conditions for having a room are: to be a regular student in 1st or 2nd years in the college of Agriculture and to be able to pay the rent. Until now, the offer corresponds to the need due to the fact that some students sometimes prefer to live outside of the campus because of the cost and some services. However, living on campus offers more security for students and give access to internet at night.

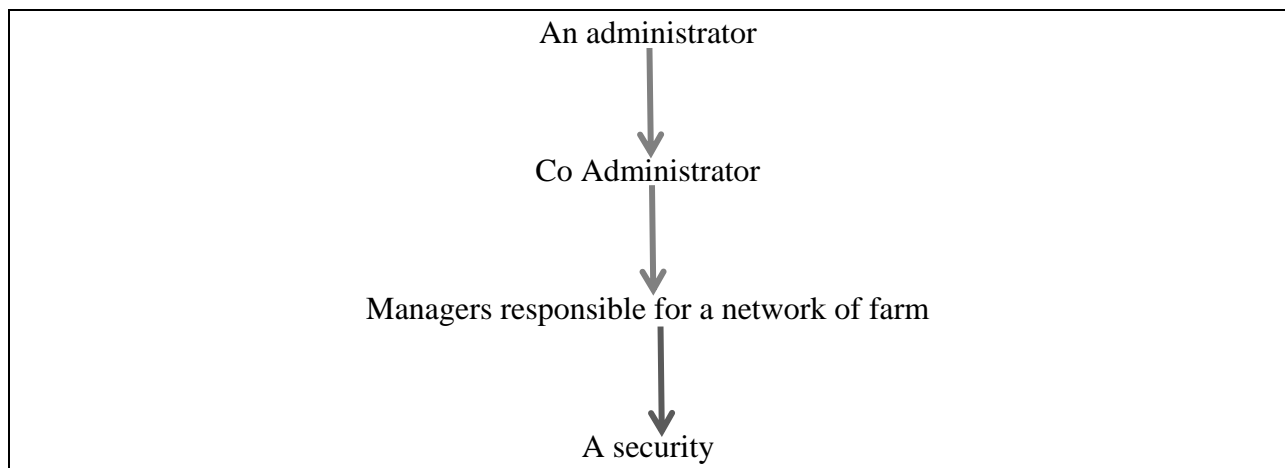
Cafeteria

Students who are living on campus II have access to a cafeteria. The cost is 1000 gourdes per month and per student for two services a day. The cafeteria offers also its services to the public who come to the campus. A service, generally the lunch, in this case, costs 75 gourdes. Four people are responsible for this service on campus II: an administrator, a "co-administrator" and two "cookers". The price is not enough for the services offered, but the University accepts to support the program according to the responsible testimonies.

The farm

As mentioned before, the FAUC has a farm of 10 hectares where the campus II is located. This farm is the main laboratory for the students in agronomy and education science whose choice is natural resources. The campus II and the academic farm are an administration. The building serves for both. There is a primary school and a kindergarten too. There are 5 classrooms, a computer lab with a capacity of 20 computers. The land of the farm is divided in 6 "blocks." There are livestock, forestry and crops, but only for the students' activities. There is also a basketball field in construction for the students.

Flowchart of the operation of the campus II



Functioning (operation) of the FAUC

The FAUC is organized through a coordination that has a coordinator in charge. Sometimes this has a Dean, a coordinator and a co-coordinator. This coordination is also responsible of the academic activities on campus II that concerns students in agriculture sciences. However, the FAUC operates under the control of the academic direction of the University and the rectory.

Discussion

Our research does not aim to do a comparison between both institutions. What we are looking for in that investigation is a clear understanding of the situation in which those institutions are operating. Furthermore, we are looking for understanding the impacts that the curriculum of those colleges of agriculture has on a sustainable development of the agricultural and the environment sectors of Haiti. Results of our informal interviews realized during our visits in those institutions confirm that there is a disconnection between the curriculums of those colleges of agriculture with the realities of the sector. However, officials (responsible) are aware of this situation and are trying to adjust their curriculum. In fact, what they want to improve is only the

plan of study or the curricular map. Results based on interviews with responsible do not prove that they will arrive until the mission, the vision or the objectives of those institutions.

However, by revising the curriculum of those institutions, none has mentioned the word “sustainable” or “sustainability”. Even though this concept has recently integrated official and academic speeches, it is older than some institutions and some plan of studies reviewed for this research. The fact that none of those institutions has mentioned formally this concept in their curriculum does that mean that they are not focus on it? What is the importance that the sustainable development has in the training of the students of those institutions? Can an institution unsustainable contribute to the training of cadres that can participate to a sustainable development of the agricultural and the environmental sector of the country? Therefore, what should those institutions reviewed: only their study plan or their curriculum in general?

According to the primary results of our research, both institutions are facing serious infrastructural problems besides the economical and human resource problems. But, what is the importance of good infrastructures (laboratories, cafeteria, library, dormitory, sports) on the quality of the education or training offered by those institutions?

At this step of our investigation, we cannot answer to those questions. However, we are going to continue with our analysis and evaluation to other elements that make part of the curriculum. We want to have the advice of peasants, employers and other people who involve in the agricultural and environmental sector. We want to have also the point of view of institutions which work in this field. In the end, we can see or evaluate whether or not curriculum of those IHEA contribute to a sustainable development of the country, particularly of the agricultural and environmental sector. In that case and at this level, we cannot have conclusions. However, for this paper, we have some final considerations.

Final Considerations

In this document, our purpose was only to share the progress of our research that we have started since January 2012 in the Ph.D. program in Sciences of Higher Education in Agriculture at the Autonomous University of Chapingo in Mexico. Our research is an evaluation curricular of two Institutions of higher Education in Agriculture in Haiti in relation to a sustainable development of the agricultural and environmental sector. Therefore, its main purpose is to evaluate the curriculum of two (2) main IHEA (one public and one private) of Haiti from this perspective. Specifically, it aims to identify the structural and functional status of these two (2) IHEA, to analyze and to evaluate their curricular proposals and to contribute to the development of a new curriculum model that can feat the needs of the country, particularly of a sustainable development of the agricultural and environmental sector.

Therefore, we handle two hypotheses in this research. The first assumes that the curriculum of IHEA of Haiti does not correspond to the real needs of the agricultural and environmental sector

due to the fact that those sectors are declining increasingly nowadays. Our second hypothesis assumes that the inadequate curriculum of the Haitian IEAS compromises the sustainable development of the agricultural and environmental sector because those institutions are responsible to train technicians and professionals who have to work in these sectors and to solve its problems.

Our literature review let us know that the concept of curriculum has been managed or discussed by several schools of thinking or of research. We perceive it at the same way that Stenhouse does. This one which connects the school to the society: the action curriculum. This curriculum model allows a good relationship between teachers and students by solving problems. However, this curriculum needs an environment to be developed.

As we have mentioned before, in the case of the Haitian IHEA, the infrastructure problem (classrooms, laboratories, library, cafeteria...) is a main problem for the development of those institutions and their students. There is a direct relation between good infrastructure and good education or education of quality. The progress of our research or the primary results of this investigation proves that among the financial problems, the human resources and the inadequate plan of study, the infrastructural problem compromises the quality of the education offered by those institutions and compromises also the training of good technicians and professionals who can contribute to a sustainable development of the agricultural and environmental sectors of Haiti.

As part of our specific objectives, the structural and the functional status of those institutions were fundamental. Before the analysis of the curriculum of those IHEA in all its aspects, it was important to understand the environment in which their curriculum is operating. It was necessary also to know who does what in those institutions. We understand now that the environment in which those IHEA are operating is not really appropriate. We understand also that they depend in many aspects of their tutorial institution although they are free to develop some activities. As we can understand, the curriculum is this large and complex project which defines the prototype of men and women that a society needs through an educational system. So, to the agricultural and environmental problems, we should question the curriculum of the Haitian IHEA. There is a great relationship between the curriculum and the kind of society we have. This link should start from the base (primary) to the upper level (High school) through intermediate levels (vocational training). However, the IHEA of Haiti have to define their true roles in the sector. A holistic education as mentioned Gallardo Garibay (1996) y Roya (1998) should be the new way for the Haitian IHEA.

In fact, the IHEA of Haiti should pass from a traditional education to a "modern" one that enables graduates integrate professional, social, economic, and why not political life without any problem. This kind of learning should be focused on the student. It should be comprehensive and holistic as mentioned before. The teacher should be a counselor, a guide, a mentor...The IHEA should provide an environment that facilitates this type of education. Training (recycling) of

teachers should be a priority. Collective interests should replace the individual interests of each institution. Pierre (2009), considering the infrastructural problems, proposed that IHEA practice the policy of "putting electrons together" to help each other. For example, the author asks why a teacher of an institution "X" cannot use the laboratory of an institution "Y" when there is a need. This practice can help the lack of infrastructure for some IHEA. Today, some teachers do it; but it is not formal and systematic.

The profile of the new type of agronomist that Haiti needs has to be the product of a well-defined and constantly updated curriculum as mentioned Cordova Duarte et al. (2011). The new Haitian agronomist should understand very well the "rural" of Haiti. He should understand the physical design of the Haitian agricultural and environmental reality. He should not return from the university without understanding the socio-economic, the political and the cultural environment in which he will work as mentioned Rocher (1990).

How to leave the University without the skills to work in mountain area when two third (2/3) of the country's area is large mountain declivities? How to leave school without knowing how to improve small farm production systems when they represent the majority of the farming system of the country which has an average of 1.3 ha? How to get from college without knowing how to remedy environmental problems on which the country is facing: deforestation, erosion, contamination, flood, etc.? How to leave without knowing that unemployment is a common phenomenon in the country and this situation requires creativity, dynamism, versatility, honesty and skills in the management of the new technology of information and communication to find a job or to create his own activities? Those questions should help to develop a new Curriculum model that will be able to respond not only to the aspiration of graduates, but also to the needs of the society, particularly the agricultural and environmental sector.

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