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## InnovATE Country Study: The agricultural education pipeline in Honduras

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## **InnovATE Honduras Country Study**

### **Introduction**

Innovation for Agricultural Training and Education (InnovATE) is a USAID-funded project supporting the capacity development of agricultural training and education systems from primary school through secondary institutions as well as vocational and technical schools and universities. The InnovATE program, implemented by a consortium of US universities led by Virginia Polytechnic and State University and including Pennsylvania State University, Tuskegee University, and the University of Florida, aims to strengthen the range of institutions that train and educate agricultural professionals (InnovATE, 2013).

The InnovATE program takes a “learn, design, train” approach to capacity development. The “learn” component of the program aims to “provide educators and practitioners with good practices and tools that promote agricultural training and education systems development” (InnovATE, 2013). Coupled with this are case studies, needs analyses, action-oriented research, and analytical work necessary to support and foster capacity development in agricultural education. The “design” component of the program “undertakes country scoping assessments that lead to program design recommendations to improve the effectiveness of agricultural training and education” (InnovATE, 2013). The “train” component “will develop materials for training programs that promote new strategies and approaches to agricultural education and training” (InnovATE, 2013).

In support of the “learn” component of the InnovATE program, a series of country desk studies will be commissioned to provide relevant background information to inform a basis for identifying gaps in Agricultural Training and Education (ATE) programs and institutions in target InnovATE countries. This paper aims to explore agricultural education in Honduras to better understand the overall educational structure, participation and performance in the educational system from pre-primary through tertiary and vocational institutions, the availability of agricultural education in Honduras, and gaps in and barriers to agricultural education.

The first section of the paper will describe the overall structure of the Honduran education system from pre-primary through tertiary and vocational education. The second section will provide background information on participation and performance in the educational system. The third section will provide

information on the availability of formal agricultural education. The fourth section will discuss gaps in and barriers to agricultural education. The final section will discuss next steps.

## **Educational Structure**

The governing body for education in Honduras is the National Council of Education which includes The National Autonomous University of Honduras (UNAH) and the Secretary of Education. The Secretary of Education is responsible for pre-basic through basic education (Hernandez, 2009). Participation in the educational system is compulsory for nine years beginning at age 6 and ending at 15 years of age. (RHSE, 2008) The educational system structure is broken into pre-primary education, primary education, middle education, and higher education as reflected in Figure 1 (RHSE, 2003). Participation in education can include public school financed by the state; semi-public schools financed by parents, municipalities, or private institutions but including state subsidies; or private school (RHSE, 2008).

### *Pre-Primary Education*

Pre-primary education is available in some areas and is considered to include pre-kindergarten, kindergarten, centers for mothers, grade 0, and pre-basic centers. Pre-primary school includes two cycles from ages 1-3 and from 4-5. The final year of pre-primary school, considered Kindergarten, is compulsory although attendance is dependent on school availability (RHSE, 2003; RHSE, 2008). Pre-primary education is often conducted in rural areas using informal community instructors where programs last an average of 2-10 months rather than the entire pre-primary cycle (UNICEF, 2003).

### *Primary Education*

Primary school is divided into three cycles. Ages 6-8 (equivalent to first-third grades) study basic subjects and are automatically promoted through the levels. At the end of the third year the students participate in standardized testing and are retained or promoted to the second cycle (RHSE, 2003; RHSE, 2008).

Students aged 9-11 (equivalent to fourth-sixth grades) participate in the second cycle. This cycle is considered “diversification of subjects” and includes mathematics, natural sciences and technology, communication, social science, and foreign language (English). At the end of this cycle students again participate in standardized testing and are retained or promoted to the third cycle (RHSE, 2003; RHSE, 2008).

The third cycle is from ages 12-14 (equivalent to seventh-ninth grade) and is the beginning of education that takes place at the Colegio (high school). Typically, participating students from rural areas where colegios are not available will commute to nearby urban or peri-urban centers and in some cases will take up residence with families located in larger cities. Students in the third cycle are divided into an academic track or a pre-vocational track. The academic track is similar to a standard high-school education. The pre-vocational track includes “productive work,” occupational, and technical training. At the end of this cycle students participate in standardized testing. In the academic track students are retained, promoted to middle education, or are moved to the pre-vocational track or to the professional track. The pre-vocational track students are similarly retained, promoted to the professional track, or spend a year in leveling courses and are moved to the academic track (RHSE, 2003; RHSE, 2008).

#### *Middle Education*

Middle education takes place from ages 15-17 (equivalent to tenth-twelfth grade) and completes education at the Colegio. At this point the students have been divided into the academic track termed “Scientific Humanist High School,” or the professional track termed “Professional Technical School” (RHSE, 2008). The academic track continues the standard high-school curriculum focusing in the sciences and the humanities. The professional track combines studies at both the educational institution and with businesses per the demand of the productive sector. (RHSE, 2008) The professional track school offerings include agricultural education, industrial education, administrative services, environmental education, and civil construction (RHSE, 2003). Not all professional tracks are offered at all institutions.

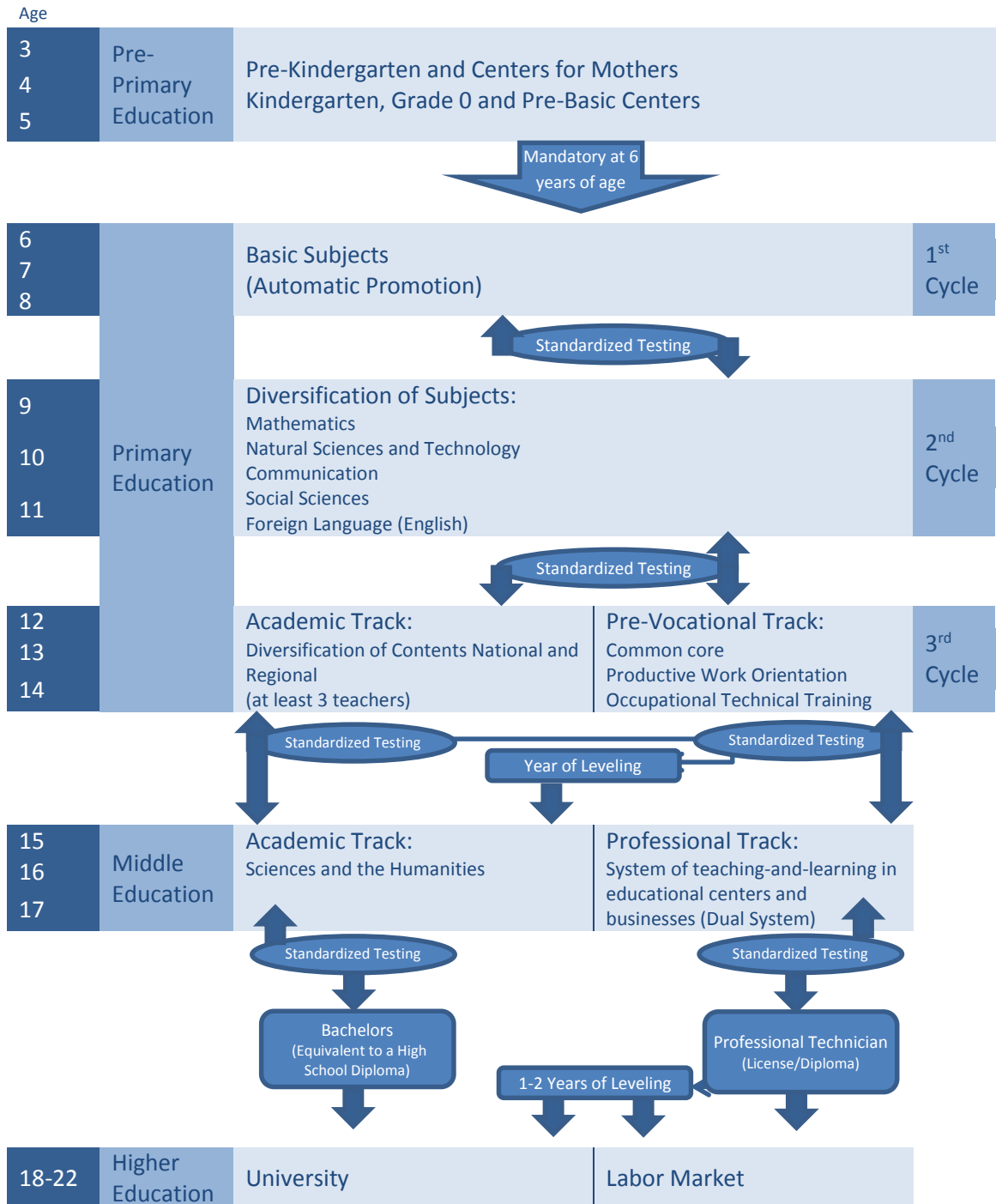
Upon finishing middle education students participate in standardized testing. In the academic track students are either retained or are given a “Bachelors” (high school diploma equivalent). In the professional track students are either retained or given a “Professional Technician” license. Professional track students who complete their licensing are also able to participate in 1-2 years of leveling courses if they wish to pursue higher education (RHSE, 2003).

#### *Higher Education*

There are an estimated 20 institutions of higher education in Honduras with the largest being the public Universidad Nacional Autónoma de Honduras (UNAH) with campuses in major Honduran cities including Tegucigalpa, San Pedro Sula, Comayagua, and La Ceiba (UNAH, 2007). There are a total of six public institutions and 14 private institutions that vary in quality and in the focus of available programs. The

number of higher education institutions in Honduras is low compared to other Central American countries (Padilla, 2011). None of the higher education institutions in Honduras rank in the top 500 of universities globally with the highest ranking at 3481 for UNAH (Cybermetrics, 2012).

**Figure 1. Honduran Educational System Structure**



*Translated/Adapted from the Ministry of Education, Honduras*

## Educational Funding and Expenditures

In 2006 Honduras reported that 30% of the total expenditure in the ministry of finance was spent on educational funding, at 7.3% of GDP. This is the highest rate of expenditure in Central America where the average among the other countries is 3.1% of GDP. Guatemala and Nicaragua direct less than 15% of expenditures on education and El Salvador less than 20%. Honduras spends 1% of its GDP to finance higher education for the highest quintile of students (USAID, 2007b). However, the higher rate of spending on education in Honduras does not result in higher educational results in the region where participation and performance is equal to or less than that of its Central American counterparts (Pavon, 2009).

## Participation and Performance

Honduras ranks 90<sup>th</sup> out of 120 countries on the Education for All Development<sup>1</sup> Index (EDI)<sup>2</sup> in comparison with El Salvador ranked at 77 and Guatemala ranked at 92. Honduras is on par with other Central American countries in primary adjusted net enrollment in school and is approaching complete coverage. However, the retention rate to grade 5 is poor with approximately 22% of students not finishing primary school (Table 1). Dropouts across all grades are reported at 23.8% total, 26.2% male, and 21.2% female in 2009 (UNESCO, 2012c).

**Table 1. Standard EDI for Select Central American Countries**

Rank	Country	EDI	Primary adjusted net enrollment	Adult literacy rate	Gender specific EFA index	Survival rate to grade 5
77	El Salvador	0.913	0.953	0.845	0.962	0.894
90	Honduras	0.884	0.972	0.848	0.938	0.778
92	Guatemala	0.841	0.986	0.752	0.962	0.706
101	Nicaragua	0.799	0.939	0.780	0.962	0.514

*Adapted Table EDI.1: The EFA Development Index and its components, 2010. (UNESCO, 2012c)*

### *Pre-Primary Participation*

Pre-primary school is an option in some areas of the country and UNESCO reports in 2010 that 44% of eligible aged children (under 5) are enrolled in pre-primary school up from 22% in 1999 (Table 2).

Although this represents a doubling of the students attending pre-primary school over a period of ten years, this number is low compared to other Central American countries as represented in Table 2. Of

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<sup>1</sup> Education for All is an agreement between nations to reach six worldwide educational goals identified at the 2000 World Education Forum in Dakar by the year 2015.

<sup>2</sup> The EDI provides statistics on the progress of educational systems towards the achievement EFA goals. The index currently measures universal primary education, adult literacy, quality of education, and gender parity. (UNESCO, 2000)

those enrolled in pre-primary school slightly more than half are female and 14% of those enrolled attend private pre-primary schools (UNESCO, 2010b).

**Table 2. Gross Enrollment Ratio (GER)\* in Pre-Primary Education (%) in Select Central American Countries**

Country	1999				2010			
	Total	Male	Female	Gender Parity Index (F/M)	Total	Male	Female	Gender Parity Index (F/M)
El Salvador	41	40	41	1.02	64	63	65	1.02
Guatemala	46	46	45	0.97	71	70	72	1.02
Honduras	22	21	22	1.05	44	43	44	1.03
Nicaragua	28	27	28	1.04	55	55	56	1.03

\* Enrolled children of all ages/total number of children in the official school age group.

Adapted Table 3B: Early childhood care and education. (UNESCO, 2012c)

### Primary Participation

Net primary school enrollment is up from 1999 with a total increase from 89% participation to 96% participation in 2010, which is at the same level of other Central American countries (Table 2). From 1999 to 2010 male participation in primary education increased from 88% to 95%, and female participation increased from 89% to 97%. In both years slightly more female students attended primary school than male participants as indicated by a Gender Parity Index (GPI)<sup>3</sup> score of 1.01 in 1999 and 1.02 in 2010. The total net number of out-of-school children decreased substantially with an estimated 115,000 students out of school in 1999 to an estimated 31,000 in 2010. The gendered percentage of students out of school changed significantly from 1999 to 2010 with a change from 48% of out-of-school children being female to 27% (UNESCO, 2012c). This is an unusually low number of female out-of-school students for the region and represents disproportionate amount of out-of-school boys (Table 3).

**Table 3. Net Enrollment Ratio (NER) in Primary Education (%) in Select Central American Countries**

Country	Net enrollment ration (NER) in primary education (%)								Out of school children (000)			
	1999				2010				1999		2010	
	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)	Total	% Female	Total	% Female
El Salvador	84	84	85	1.01	94	94	94	1.00	128	47	38	48
Guatemala	83	86	79	0.91	97	98	96	0.98	289	61	32	86
Honduras	89	88	89	1.01	96	95	97	1.02	115	48	31	27
Nicaragua	78	77	78	1.01	92	92	93	1.01	153	47	48	44

Adapted Table 5: Participation in primary education. (UNESCO, 2012)

Despite significant gains in student enrollment, the Gross Enrollment Ratio (GRE) increased from 107% in 1999 to 116% in 2010. This number is consistent with nearby Central American countries and

<sup>3</sup> Gender Parity Index (GPI): Measures relative access to education on a scale of 0-1.

indicates a high number of over-aged children enrolled in primary school (Table 4). The primary repeater rate is estimated at 10% with 41% of repeaters being female and 59% male. Over-aged participation is high in comparison with other regional countries at a rate of 16% male and 14.5% female in 2010. Similarly, the primary school dropout rate, estimated at 20% by UNESCO, is listed as a major barrier to education in comparison to other countries in the region, and the primary to secondary transition rate is estimated at 84% as of 2006 (UNESCO, 2012a; 2012b). Of those enrolled in primary school, 9% attend private institutions (Table 4).

**Table 4. Gross Enrollment Ratio (GER) in Primary Education (%) in Select Central American Countries**

Country	Gross enrollment ration (GER) in primary education (%)								Enrollment in private institutions as % of total enrollment	
	1999				2010				1999	2010
	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)		
El Salvador	106	108	104	0.97	114	117	111	0.95	11	10
Guatemala	102	109	94	.087	116	119	114	0.96	15	10
Honduras	107	107	108	1.01	116	116	116	1.00	...	9
Nicaragua	102	102	102	1.01	118	119	116	0.98	16	16

*Adapted Table 5: Participation in primary education. (UNESCO, 2012)*

#### *Secondary and Vocational Participation*

Data for net enrollment in secondary school in 2010 is not available but the gross enrollment rates (which include over-aged participation) were available for 1991 and 2010. Gross enrollment was reported to increase for male enrollment from 33% in 1991 to 66% in 2010 and increase in female enrollment from 37% to 81% (Table 5). However, although enrollment rates appear high, secondary school net attendance from 2005-2010 was reported at 35% male and 43% female participation. (UNICEF, 2010) Of those enrolled in secondary school an estimated 25% attend private institutions (Table 5).

**Table 5. Gross Enrollment Ratio (GER) in Secondary Education (%) in Select Central American Countries**

Country	Gross enrollment ration (GER) in secondary education (%)								Enrollment in technical/ vocational programs as % of total enrollment in secondary education				Enrollment in private institutions as % of total enrollment
	1991				2010				Total Secondary 2010		Upper Secondary 2010		
	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)	Total	Female %	Total	Female %	2010
El Salvador	53	53	52	0.98	65	65	65	1.01	18	52	55	52	16
Guatemala	33	36	30	0.84	59	61	57	0.93	27	51	87	51	67
Honduras	35	33	37	...	73	66	81	1.23	46	56	82	58	25
Nicaragua	52	47	56	1/18	69	66	73	1.10	16	49	44	49	22

*Adapted Table 7: Participation in secondary education. (UNESCO, 2012)*



Enrollment in technical and vocational programs as a percentage of total enrollments in secondary education (lower and upper secondary combined) was reported as 46% of students. Of these enrollments 56% were female. When looking at upper secondary alone, enrollment in technical and vocational school as a percentage of total enrollment increases to 82%. Of these enrollments 58% are female (UNESCO, 2012b).

Data available from 2006 shows rural to urban disparities in education such as indicators that less than one in 10 boys aged 16-18 years old from rural areas were enrolled in an upper level secondary education program. Enrollment varied across departments with low rates of participation in the departments of Lempira, Ocotepeque, Intibucá, Gracias a Dios, El Paraíso, and Santa Barbara where half of the municipalities in these departments lack upper secondary schools. Overall, there is a lack of secondary schools as illustrated by the presence of approximately 900 upper secondary schools in comparison to 11,000 primary schools (USAID, 2007).

#### *Second Chance and Alternative Secondary Institutions*

There are few alternative and second chance institutions in Honduras that have an enrollment of less than 3% total of secondary students, with a total enrollment of 57,000 students in 2006. These programs include EDUCATODOS, the Honduran Institute for Radio Education (IHER), the Secondary Distance Education System (SEMED), Institutos Nocturnos, Tutorial Learning System (SAT), and Telebásicos. SEMED, Institutos Nocturnos, and Telebásica are state-run distance education programs; EDUCATODOS is a semi-autonomous program run through the Secretary of Education with funding from donors such as USAID; and IHER and SAT are volunteer, church, or NGO-run. The targeted grade levels, alternative methodology, and meeting times of these programs are listed in Table 6 (USAID, 2007).

**Table 6. Alternative and Second Chance Secondary School Programs**

<b>Program</b>	<b>Grades</b>	<b>Methodology</b>	<b>Time</b>
EDUCATODOS	1-9	Books and cassette tapes with volunteer facilitators.	Collectively decided by student group
IHER	1-11	Textbooks and a weekly radio program with volunteer facilitators.	Collectively decided by student group
SEMED	7-12	Specialized textbooks and self-study with paid teachers.	Meet with teachers on weekends
Institutos Nocturnos	7-12	Traditional textbooks and curriculum in secondary schools with paid teachers.	Monday-Friday nights
SAT	7-12	Rural-development based curriculum with paid teachers.	Afternoons
Telebásicos	1-9	Videos and altered curriculum (developed in Mexico) with paid teachers.	Traditional school day

Source: USAID, 2007

### *Tertiary Participation*

Data from 2005 in Central America (Table 7) shows that Honduras is slightly behind El Salvador and Nicaragua in the total number of eligible-aged students enrolled in tertiary education at 16% compared to 18-19%. Male participation is low in the region at 13% compared to 17% in El Salvador and Nicaragua. Female participation is similar to El Salvador and Nicaragua at 20%. The gender parity index is considerably high in Honduras at 1.46 compared to 1.23 in El Salvador, 1.11 in Nicaragua, and 0.72 in Guatemala, indicating a significantly higher proportion of women enrolled in tertiary education than men (UNESCO, 2008).

**Table 7: Gross enrollment in tertiary education**

Country	Gross enrollment ratio (GER) in tertiary education (%)							
	1999				2005			
	Total	Male	Female	GPI (F/M)	Total	Male	Female	GPI (F/M)
El Salvador	18	16	19	1.25	19	17	21	1.23
Guatemala	...	...	...	...	10	11	8	0.72
Honduras	14	12	16	1.29	16	13	20	1.46
Nicaragua	...	...	...	...	18	17	19	1.11

*Source: UNESCO, 2008*

In 2012, gross enrollment in tertiary education in Honduras was estimated at 19% male/female with 15% of males and 23% of females enrolled. It is further estimated that 33% of those enrolled are attending private institutions (UNESCO, 2012b).

### **Availability of Agricultural Education**

#### *Primary Agricultural Education*

The overall focus of natural sciences in the basic cycle of schooling (ages 6-14, primary school and lower secondary school) is in physics, chemistry, biology, and ecology. Specific objectives outlined by the national basic curriculum include topics related to the scientific method and processes, the natural and social environment, the relationship between humans and nature, personal health, and an understanding of organisms from microorganism to planetary levels (RHSE, 2000). Agricultural education is not specifically mentioned in the overall objectives of the natural science curriculum. However, in multiple grades agriculture-related concepts are introduced including soils and erosion; crop rotation; valuation of agriculture economically, ecologically, and culturally; climate and climate change effects on agriculture; basic biological concepts, and school and family gardening. A detailed list of agricultural-related objectives in the basic education curriculum is provided in Table 8.

**Table 8. National Basic Curriculum: Agriculture Related Content**

Year	Objective
<b>Grade 3</b>	Explain the relationship between geographic characteristics and the occupations of Hondurans. <i>(agriculture included)</i>
	Analyze the characteristics of the principal activities of the country. <i>(agriculture included)</i>
	Identify local resources and how people use these resources. <i>(agriculture included)</i>
	Relate the use of natural resources with changes that occur in the environment and that are visible in the country. <i>(agriculture included)</i>
	Explain the importance of the balance between distinct elements of the environment and how to prevent their alteration when possible. <i>(agricultural practices included)</i>
	Explain what soil is and how it forms.
	Differentiate between distinct types of soil.
	Know techniques for the conservation of soils. <i>(conservation, techniques, erosion issues)</i>
	Describe concrete examples of the rotation and combination of crops, explaining what each technique consists of.
	Value local crops as part of our life and the principal source of our diet.
	Promote the practice of varying local crops and non-local crops. Reevaluate local crops from the point of view of the quality of products that they provide, their ecological value, and their cultural value.
<b>Grade 4</b>	Explain how plants are fed.
	Explain how plants form and store food.
	Distinguish between reproductive systems of plants and classify plants based on these criteria.
<b>Grade 5</b>	Identify the influence of the climate and seasons in human activities, and vice versa. <i>(agriculture and growing seasons included)</i>
	Identify development activities in the region. <i>(agriculture, aquaculture, fisheries included)</i>
	Recognize and estimate the impact of each activity on natural resources and the landscape.
<b>Grade 6</b>	Evaluate the sustainability of these activities on the basis of their impact.
	Explain what soil is and how it forms.
	Differentiate between distinct types of soil.
	Know techniques for the conservation of soils.
<b>Grade 7</b>	Describe concrete examples of the rotation and combination of crops, explaining what each technique consists of.
	Recognize appropriate and inappropriate techniques for the conservation of soils.
	Characterize the phenomenon of life through your experience and the concepts of biology.
	Identify, through experiments or representative models, bio elements and biomolecules.
	Conceptualize, from previous knowledge, the plant kingdom.
	Identify, through indirect observation, plant cells and organs.
	Describe plant species that are important in your environment.
	Identify the characteristics of the animal kingdom.
	Classify in an arbitrary and a systematic manner the animals by phylum, class, and species.
	Conceptualize the process of experimental investigation.
<b>Grade 8</b>	Create simple experimental designs.
	Systematize the basic process of experimental methods.
	Exercise the scientific method in basic science themes.
<b>Grade 9</b>	Communicate properly observations, processes, data, logical reasoning, and hypotheses.
<b>Grade 8</b>	Design a school garden with species adapted to the region and with food products that enrich the diet.
	Value local products as a source of good quality foods.
	Demonstrate an initiative to work in school or family gardens.
<b>Grade 9</b>	None

Adapted from: RHSE, 2000b; 2000c; 2000d

### *Middle Agricultural Education*

Specialized agricultural education is an option during middle education (upper secondary and vocational) from ages 15-17 (equivalent to tenth-twelfth grade) for students who choose or are placed in the professional (vocational) track.

In 1978 educational policy reforms increased the emphasis on secondary vocational training. Following these reforms, the 1980's and 1990's saw a dramatic increase in multipurpose educational institutes in Honduras, many of which became technical institutions. From 1990-2001 the programs for technical and professional technical education expanded from 7 to 61 programs and enrollment in upper secondary has been consistently around 82% of total secondary school enrollments since 2006 (RHSE, 2006b; UNESCO, 2010). The technical and vocational education and training (TVET) sectors are based on national and regional labor market demands and include industry, agriculture, administrative services, hospitality and tourism, community development, and forestry (RHSE, 2006). The most popular tracks documented in 2006 include mercantile expert with 33% of students, public accounting with 21%, the academic track termed sciences and letters with 18%, business administration with 8%, and computing with 2%. These tracks serve over 80% of secondary students with the remaining divided among 56 other tracks (USAID, 2007). Eleven of the remaining tracks directly are related to agriculture including a high school diploma in administration of farming companies, sciences and farming techniques, or farming. Professional Technician specializations are offered in horticulture, coffee agriculturalist, farming technician, industrial agronomy, agroforestry, sciences and aquaculture, sugar cane agriculturalist, and farming administration (RHSE, 2008).

The rapid growth of vocational programs combined with little government oversight and a lack of standards for upper secondary school created a disconnect among TVET programs termed "curricular anarchy." (RHSE, 2006A). Studies performed of secondary school TVET programs by the Honduran ministry of education found that the programs "did not respond to most of the needs and aspirations of students, of family, community, higher education, work and country." (RHSE, 2006A). Issues such as an absence of institutional performance standards, poor quality staff, lack of student performance objectives, reinforcement of gender stereotypes, poor quality of education, low relevancy of learning, high repetition and dropout rates, poor performance, and low academic achievement were identified throughout secondary TVET programs (RHSE, 2006A).

The results of these studies led to a 2005 plan to reform TVET programs in structure and methodological approach. The reformed TVET curriculum design has seven key components (RHSE, 2006A):

1. A common core curriculum followed by all TVET programs that is designed to follow after completion of the national basic curriculum and coupled with a focused curriculum in the specialty area.
2. A competitive curriculum model related to professional and social characteristics of the profession and defined by the productive sectors.
3. A “Technical Professional Profile” designed based on the technical skills of the specialty area with job skills organized into curricular areas.
4. A curriculum with specific generic competencies.
5. A curricular methodology including modules, workshops, projects, internships, seminars, and professional practices.
6. Networks between TVET companies and TVET school institutions.
7. Training and updating of teachers.

The 2005 plan for the agricultural track specifies a focus in practical and technical processes in agriculture, livestock, aquaculture, poultry, and beekeeping. The curriculum is structured over a three year period. The first year focuses on a common core curriculum designed to follow after completion of the national basic curriculum. The second year focuses on the foundation for technical and vocational skills within the agriculture focus area. The third year is grounded entirely in the agriculture focus area and may include internships or other direct work experience. The curriculum is structured to allow for direct interaction with businesses, other educational institutions, and businesses and is purportedly based on the demands of the agricultural labor market allowing for graduates to enter directly into the labor force or continue on to higher education (RHSE, 2006). Information detailing the enactment of the reformed plan is not available. Table 9 outlines the competencies for each year of the “Professional Technician in Agriculture” diploma.

**Table 9. Competencies for Professional Technician in Agriculture Diploma**

<b>Year 1: Common Core Curriculum</b>	<b>Year 2: Basic Curriculum</b>	<b>Year 3: Advanced Curriculum</b>
<ul style="list-style-type: none"> <li>• Understand and express in written and oral form, in your native language, in Spanish, and in English, basic messages that make effective communication possible between people, with different intentions, in different areas of your life and professional performance, with various</li> </ul>	<ul style="list-style-type: none"> <li>• Construct in Spanish or in English, with autonomy, individual, and collective effort, in a responsible, ethical, and civil professional manner, with technical language, literary, legal, administrative, and</li> </ul>	<ul style="list-style-type: none"> <li>• Plan, organize, direct, supervise and/or control processes, projects, programs, and production processes and commercialization of</li> </ul>

<p>media and technologies, appreciating, evaluating and practicing the art and sport of forms of communicating thoughts, feelings, desires, fantasies, culture, and the reality of the nation, the region, and the world.</p> <ul style="list-style-type: none"> <li>• Act in a creative and responsible manner, in different social and productive environments, based on the knowledge of the history of the traditions, economics, political, and culture reality of the nation, for the construction of a multiethnic and multicultural society that is democratically developed, just and participatory, utilizing the advances of science and technology in harmony with sustainable human development of the country and a respect for nature.</li> <li>• Raise and resolve, through structured strategies and logical reasoning, problems that require the application of mathematical procedures, with methods that are symbolic, graphical, analytical, functional, qualitative, quantitative, and computational in work, academics, civic life, nature, and society in general.</li> <li>• Responsibly utilize scientific methods and procedures and technical resources in the study and research of the behavior of matter, energy, bio-media-related natural phenomena, chemistry, health, the environment, and the cosmos for the improvement and preservation of life.</li> </ul>	<p>financial procedures, solutions to problems in work, academics, and civil life which need scientific, technical, logical reasoning and applicable mathematical calculations, using computer systems for the generation and control of quality products and services, maintaining positive labor relations and promoting the common good.</p> <ul style="list-style-type: none"> <li>• Investigate and resolve scientific, technical, and professional problems, the study of life in the city, through the formulation and execution of projects and other alternative forms of action and solution, according to the nature of identified problems identified by scope and responsibility, operating through manuals, laws, rules and technical procedures, national and international, applying health measures, hygiene, and professional safety, and following instructions in the native tongue, Spanish, or English.</li> </ul>	<p>agricultural products, applying professional understanding of the agricultural industry, applying professional knowledge and procedures of science, technology, technical and legal policy, in agricultural and agro-industrial production as well as health, hygiene, and safety, taking into account national and international regulations according to the nature of the activity and area of operation of the sector, operating with manuals, tools, equipment, machinery, and instructions formulated in the native tongue, Spanish, or English considering different diversities of regions, for the solution of problems in agricultural production and commercialization.</p>
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*Translated from: "Competencias por ciclos de formación" (RHSE, 2006A)*

### *Second Chance and Alternative Education Programs*

The curricula of the alternative education programs in Honduras vary based on the grade levels offered and the method of funding. EDUCATODOS covers curriculum in grades one through nine with a focus on population, health, environment, national identity, and democracy. English is taught in grades seven through nine. Currently, the curricular areas are being adapted to meet the basic national curriculum standards (USAID, 2007). SAT curriculum is based on the basic national curriculum with a focus in microenterprise and rural development. The SAT program includes fieldwork as part of the curriculum where "technological or scientific materials may be used in the fieldwork for agricultural experiments or community service projects." The IHER curriculum follows the traditional national curriculum for an academic secondary school degree. Telebásica follows curriculum that was designed by the Mexican government with adaptations made for grades seven through nine to follow the basic national curriculum. Courses include math, science, Spanish, social studies, English, and technology. SEMED follows the basic national curriculum at the lower secondary level and offers a secondary education

degree in business administration. Institutos Nocturnos are “night schools” that follow the same curriculum as traditional secondary schools including a range of professional technician degrees.

### *Tertiary Agricultural Education*

The number of higher education institutions in Honduras is low compared to other Central American countries. The capitol city of Tegucigalpa and the second largest city, San Pedro Sula, hold 40% of the higher education institutes, providing coverage to only 14.3% of the population (Padilla, 2011). The larger universities such as UNAH have satellite programs in multiple departments, however as of 2008 the departments of Valle, La Paz, Lempira, Gracias a Dios, the and the Bahai Islands had no institutions of higher education. Only four institutes of higher education participate in research and publication, contributing to very low rankings for Honduras’ tertiary education in Latin American and globally. The institutions with a research and publication focus include three public institutions: The National University of Pedagogy Francisco Morazán (UPNFM), The National Autonomous University of Honduras (UNAH), and The National School of Forest Sciences (ESNACIFOR). The only private institution contributing to research and publication is The Panamerican School of Agriculture – Zamorano (EAP-Zamorano) (Padilla, 2011).

Three of the six public universities are members of Central American University Higher Council (Consejo Superior Universitario Centroamericano , CSU- CA) which created the Central American System of Evaluation and Harmonization of Higher Education (Sistema Centroamericano de Evaluación y Armonización de la Educación Superior —SICEVAES/CSUCA) to function as an evaluation and accreditation body for Central American Universities. As of 2011, UPNFM has completed the accreditation process, and UNAH has evaluated 78 of 103 programs. Data on the participation of third institution, The National University of Agriculture (UNA), was unavailable. In 2010 the government created a Honduran System of Accreditation of Higher Education Quality (SHACES) with a focus on quality, relevance, and standards in comparison with regional and global institutions. SHACES was scheduled to begin operating in 2011 (Padilla, 2011) however, information on if the implementation took place is not available.

Of the 20 institutions of higher education in Honduras, six have agriculture or agribusiness programs. Three public universities offer agricultural programs including UNAH with five bachelor’s and eight associates degrees, UNA with five bachelors and one doctorate degree (master’s degree information

was unavailable), and ESNACIFOR with two bachelor's degrees in forestry that offer agriculture components. The private institutions that offer agriculture programs include EAP-Zamorano with four bachelor's concentrations in agriculture, the University of José Cecilio de Valle (UJCV) with a bachelor's in agribusiness administration, and the University of San Pedro Sula (USPS) with a bachelor's in agronomic engineering administration (UNHP, 2009; Padilla, 2011). Table 10 provides the agricultural programs offered by each institution. Enrollment in agricultural fields of study increased in public institutions from 8,000 in 2005 to 12,000 in 2009 at a rate of 10.7% over the 4 year period. In public institutions remained steady at 6% (UNAH, 2009).

**Table 10: Institutes of Higher Education and Agricultural Programs**

Public Institutions of Higher Education	Agricultural Programs
The National Autonomous University of Honduras (UNAH - <i>Universidad Nacional Autónoma de Honduras</i> ) <a href="https://www.unah.edu.hn/">https://www.unah.edu.hn/</a>	<ul style="list-style-type: none"> <li>• Bachelors (Licenciatura)               <ul style="list-style-type: none"> <li>○ Agricultural Business Administration</li> <li>○ Agricultural Economics</li> <li>○ Agroindustrial Engineering</li> <li>○ Agricultural Engineering</li> <li>○ Aquatic Sciences and Coastal Engineering</li> </ul> </li> <li>• Associates (Técnico Universitario)               <ul style="list-style-type: none"> <li>○ Forest Engineering</li> <li>○ Aquatic Sciences</li> <li>○ Meat Processing</li> <li>○ Dairy Processing</li> <li>○ Grain and Seed Processing</li> <li>○ Agricultural Production</li> <li>○ Livestock Production</li> <li>○ Food Technology</li> </ul> </li> </ul>
The National University of Agriculture (UNA - <i>Universidad Nacional de Agricultura</i> ) <a href="http://www.unag.edu.hn">http://www.unag.edu.hn</a>	<ul style="list-style-type: none"> <li>• Bachelors (Licenciatura)               <ul style="list-style-type: none"> <li>○ Agronomic Engineering</li> <li>○ Natural Resources and Environment</li> <li>○ Food Technology</li> <li>○ Agricultural Business Administration</li> <li>○ Food Technology Education</li> </ul> </li> <li>• Masters               <ul style="list-style-type: none"> <li>○ (Information unavailable)</li> </ul> </li> <li>• Doctorate               <ul style="list-style-type: none"> <li>○ Agricultural Science (With the National University of Colombia)</li> </ul> </li> </ul>
The National School of Forest Sciences (ESNACIFOR - <i>Escuela Nacional de Ciencias Forestales</i> ) <a href="http://www.esnacifor.hn/">http://www.esnacifor.hn/</a>	<ul style="list-style-type: none"> <li>• Bachelors? (diploma or certification type is unclear)               <ul style="list-style-type: none"> <li>○ Forestry (includes Agroforestry components)</li> <li>○ Forest Engineering</li> </ul> </li> </ul>
Private Institutions of Higher Education	Agricultural Programs
The Panamerican School of Agriculture – Zamorano ( <i>Escuela Agrícola Panamericana (EAP) Zamorano</i> ) <a href="http://www.zamorano.edu/">http://www.zamorano.edu/</a>	<ul style="list-style-type: none"> <li>• Bachelors (Licenciatura)               <ul style="list-style-type: none"> <li>○ Agribusiness Management</li> <li>○ Agronomic Engineering</li> <li>○ Food Agribusiness</li> <li>○ Environment and Development</li> </ul> </li> </ul>



The University of José Cecilio del Valle <i>(UJCV - Universidad José Cecilio del Valle)</i> <a href="http://www.ujcv.edu.hn/">http://www.ujcv.edu.hn/</a>	<ul style="list-style-type: none"> <li>• Bachelors (Licenciatura)             <ul style="list-style-type: none"> <li>○ Agribusiness Administration</li> </ul> </li> </ul>
The University of San Pedro Sula <i>(USPS - Universidad de San Pedro Sula)</i> <a href="http://www.usps.edu/">http://www.usps.edu/</a>	<ul style="list-style-type: none"> <li>• Bachelors (Licenciatura)             <ul style="list-style-type: none"> <li>○ Agronomic Engineering Administration</li> </ul> </li> </ul>

### **Barriers to Access and Gaps in Education**

There are several issues facing the overall education system in Honduras. Structurally, education reforms have not been supported by legislation (UNICEF, 2009). Educational funding has increased in recent years, serving to raise teacher salaries to levels comparable with teacher salaries in nearby countries. However, the majority of education funding is used for payroll purposes and reports of “ghost” teachers and inflated hours proliferate while school infrastructure and resources remain poor (USAID, 2007). Reports of high teacher absence, low teacher effort, and frequent school closings are also major issues in teacher performance. In a 2000 survey of teachers, 40% of teachers report working seven hours less than their official work week and report missing a month or more of school every year (WB, 2005). In rural areas, a significantly higher fraction of rural teachers have less than the required teacher certifications than urban teachers and are more likely to be considered unqualified (World Bank, 2005).

Teacher strikes are a frequent occurrence in Honduras and have major effects. For example in 2006 a strike of 61,000 elementary school students closed schools for over 2.5 million students for eleven days (Pavon, 2009). In 2007 it was estimated that these strikes cost the government more than 50 million lempira (approximately 2.5 million dollars) per day. The teacher union is a strong political force in Honduras who lobbies for increased teacher salaries and jobs. Interestingly, teachers at the primary and secondary school level earn a wage consistent with public sector employees. There has been an increase in the amount of teachers and their coverage from 1994-2005 but with no positive effect on student performance (Pavon, 2007).

At the primary school level, the enrollment rate of students is approaching universal levels. However, these numbers mask the primary school repeater rates, the retention rate of students to grade 5, and gender disparities that are to the disadvantage of male students. Gender parity in enrollments in primary school has been achieved in Honduras with 51% of students as male enrollments and 49% female. However, out of the 10% of students that repeat grades in primary school, 59% of repeaters are

male, and of 76% of students that survive through grade five, 79% are girls (UNESCO, 2012b). A disproportionate number of students from rural areas do not finish primary school and often drop out of school in order to work on family farms or to perform household tasks. A lack of available schools, late entry into the school system, a perception of low relevance of curriculum, distance to a primary school, lack of secondary school options after primary school, and early labor market entry are issues in Honduran primary schools and are also reported to be an issue in secondary schools (World Bank, 2005; USAID, 2007).

A need for the expansion of secondary schools is a major issue in Honduras with only 900 secondary centers compared to 11,000 primary centers, and with only 25% of the population enrolled in secondary school. Infrastructure is poor with estimations that “half of secondary institutions have telephones, four out of ten lack laboratory spaces, three out of ten lack library space, one-quarter of all desks need repair, and more than three out of every ten teachers are underqualified to teach at the secondary level” (USAID, 2007). The funding structure in Honduras is regressive with the majority of funding directed at the two highest quintiles of students. For example, it is estimated by USAID (2007b) that 1% of total GDP, between 72-75 million dollars, are directed at higher education for the richest 20% of students while only 12-13 million dollars are directed at secondary school costs for the poorest 40% of students. USAID estimates that the 72 million dollars directed at the richest quintile in higher education could provide coverage to over 900,000 pre-primary students, 400,000 primary students, or 250,000 secondary students (USAID, 2007b).

The majority of secondary schools, particularly upper secondary schools, are located in urban areas. This is reflected in urban/rural disparities in enrollment where 37% of students in urban areas are enrolled in secondary school compared to 12% of the rural population (USAID, 2007). There is significant evidence that a lack of secondary school options including the distance to centers and poor quality of centers is a major contributor to dropout rates in both primary and secondary institutions (World Bank, 2005). In Honduras, an increase in public financing for secondary education, an increase in public-private partnerships, an increase in quality and relevance in curriculum, and an increase in demand-side subsidies to reduce school costs are essential to improve secondary enrollment and participation rates (World Bank, 2005).

Gender disparities in secondary education are to the advantage of female students with 40% of female students in urban areas enrolled in secondary school in 2006 compared to 35% of Honduran males. In rural areas 15% of female students are enrolled in secondary education compared to only 10% of males (USAID, 2007). UNESCO reported in 2012 that total enrollment in secondary education in Honduras was to the advantage of females with 54% of enrollments being female compared to 46% of male students. This number increases when looking at vocational enrollments as a share of secondary enrollments with 56% of vocational enrollments being female, increasing to 58% at the upper secondary vocational level (UNESCO, 2012b). These high disparities result in a GPI of 1.23 in secondary education in Honduras – the widest GPI to the advantage of girls in the world along with Suriname (UNESCO, 2012b).

The gender parity index that favors female students in Honduras, as well as in some other Central American countries, can in part be explained by an increasing perception of education as a “feminine” pursuit leading to peer-pressure for boys to drop out of school (UNESCO, 2012d). This exacerbates issues of underachievement that have been attributed to gang and street culture. High incidence of crime, drug abuse, narcotics trafficking, violence, and some of the highest murder rates in the world are in part attributed to boys’ disadvantage in education. “Although it is difficult to establish direct and definite linkages, engagement in youth violence, easy access to guns and drug related job opportunities appear to be both a cause and impact of boys’ disadvantage in education” (Barker, 2012; UNESCO 2012d).

A large USAID study performed in 2007 included surveys and focus group results from over 1300 Honduran students of secondary age including student’s participation in traditional and alternative secondary schools, and out-of-school students. This study identified a lack of available secondary schools, the need to participate in the labor market and a conflict with work and school times, as the largest obstacles to participation. This was followed closely by family life issues, too many responsibilities, and the cost of education. Other significant obstacles include lack of program resources, curricular content, days/hours of class time, teacher absence, lack of teacher knowledge, safety concerns, and lack of understanding of course content. However, the demand for education was high with 97% of the survey group reporting a desire to participate in secondary education (USAID, 2007).

#### *Higher education barriers*

Access to higher education is a significant issue where coverage of the existing institutions serves only 14.3% of the population. This level of coverage has not improved in the past ten years despite the addition of more institutions (Padilla, 2011) – most of which are located in the two major cities, San Pedro Sula and Tegucigalpa. The lack of institutions is a significant barrier to enrollment in tertiary institutions. The distribution of the population that completes tertiary education in Honduras is dramatically skewed to the benefit of the richest 20% of the population at 77.6% of graduates in comparison to only 3.1% in the poorest 40% of the population. Urban and rural disparities further illustrate the gap in education where 13.5% of the population in urban areas holds university degrees in comparison to 1.4% of the rural population (Solís, 2011).

A 2008 report on the development of education in Honduras identified a gap in the ability of the higher education system to respond to the demand for productive education such as science and engineering as most students focus on social science related fields (RHSE, 2008). Additionally, the university system is not able to meet the demand for education. For example, in 2000, 40% of the staff of higher education institutes was reaching retirement age (Salgado, 2000).

To address some of these issues a focus has been placed on the provision of distance education programs which have been implemented with varying success in UPNFM, UNAH, and UNITEC. Criticisms of the distance education programs identify antiquated teaching methods, little use of technology, and lack of communication with other students as major issues. (Padilla, 2007). There is no nationwide strategic plan for the development of higher education aimed at the development of quality and relevance of higher education programs and to strengthen Honduras' standing among other Central America higher education institutions (Padilla, 2011).

Gendered barriers in access to higher education are an extension of the issues facing the secondary system. In a study done by McFadden (2009) of tertiary aged students of lower socio-economic backgrounds found that issues in the pursuit of tertiary education include a lack of qualified male candidates, a perception of education as a “bad investment,” and the migration of men of tertiary age. In contrast, female tertiary aged students viewed higher education as a “way out of not being economically or socially dependent on a man” (McFadden, 2009). This is reflected in data that shows an increase in the gender parity gap in tertiary education in Honduras with an increase in the GPI from 1.25 to 1.46 between 1999 and 2005, indicating a significantly higher number of women in higher education

(UNESCO, 2008). In 2013 only 15% of age-eligible male students were participating in higher education compared to 23% of women. The gender parity index in 2012 has increased to 1.51 (UNESCO, 2012b).

### *Focus group results and discussion*

In April of 2013 a focus group was conducted at the University of Florida to discuss the agricultural education system with Honduran students. Three Honduran graduate students participated in the focus group, two of which are studying agriculture and one of which is studying business economics. The students provided information regarding the educational structure in Honduras, the perceptions of agricultural education, limitations and strengths of the system, and what they perceived to be priorities to improve the agricultural education system.

The students identified teacher strikes as major issue in the quality of public education at all levels of education, in agreement with background research that indicates the same. Parents and students see the education system as unreliable: “The quality of education has a lot of problems like they have professors going on strike, they don’t attend school you could say out of the 11 months, two or three are on strike if you add it up.”

At the secondary level a lack of available public institutions and the expense of private institutions were reported by students as a barrier to agricultural education. The quality of education at this level was discussed as an issue where students are not learning the skills they need to improve agricultural production. “You learn only very basic agriculture. [You] don’t learn how you improve this or what kind of research can you do to make your production better, or that kind of thing.” The students identified the need for middle and high school students to have the opportunity to continue in school with scholarship or other programs that allow students to remain in school rather than leaving to work in factories or to return to family farms.

Agricultural education at the tertiary level was seen positively by the students, particularly in regards to the public university UNAH and the private university Zamorano. The major issue identified at the tertiary level was the lack of opportunity to participate due to the high cost of education at Zamorano and the low number of students admitted into programs at all of the universities that serve the agricultural sector. Issues of strikes at UNAH were also identified with students again promoting the private sector over the public sector in reliability of education.

At the secondary and tertiary level the students identified disconnects between agricultural education institutions, the government, and the demands of the labor market. “I think there is a lack of coordination between the government and the producers. But you have massive producers that export the products and a [large amount] of small farmers. And most of them they lack the education to effectively produce and then when addressing a problem they apply like a trial and error method. So... there’s just like a lack of communication and a fault of education and training in that area”

Perceptions of agriculture as a good career in Honduras varied among the students with positives seen in unexploited potential such as improving value added processes to agriculture, opportunities to improve production, and the natural resources of the country. The issues students saw in pursuing an agricultural career included lack of quality of education (particularly in middle and high school), lack of and cost of educational opportunities, lack of investment and research in the sector, migration of educated agriculturalists to countries that pay better salaries, and increasing issues of climate change and weather variability. Students also described agriculture as a career that is difficult and low paying, discouraging students in higher education from pursuing agriculture during and after schooling:

*“If you study and you get [an] education the last thing you want to be is working under the sun. And that’s part of the agronomy situation. So people who are able to get an education say like, ‘why should I be working in the fields when I can be working in an office. So I will work in a business administration theme or whatever.’ So you’ll see a lot of these guys from Zamorano being CEO’s and all that stuff. They forget the field because obviously there’s more money, there’s uh, less physical work.”*

### *Recommendations*

Based on research of the Honduran educational system and focus group interviews with Honduran nationals, the following recommendations for building the capacity of Honduran agricultural and education training systems are worthy of consideration and further exploration:

#### *All levels*

- Improve existing infrastructure and increase facilities.
- Improve efficiency in public investment in education, particularly for the poor and rural populations.

- Improve teaching methods, practices, and biases to improve the repetition and dropout rate – particularly among boys.
- Improve government incentives to prevent strikes and keep educators active in the classroom.
- Implement performance monitoring programs to improve teacher performance and reduce teacher absenteeism.
- Increase public/private partnerships such as in the provision of school vouchers for qualified students to continue in private secondary education institutions and collaboration among educational institutions and agricultural institutions to provide opportunities for students to continue schooling.
- Upgrade curriculum and teaching practices by placing less emphasis on theoretical models and more on practical application.
- Ensure that the agricultural curriculum is relevant to societal needs would ensure that agriculture and provides students with the necessary skill sets to be successful in the labor market.
- More research and discussion of the issues surrounding narco trafficking and its effects on educational participation, particularly for poor and rural boys, is needed.

#### *Primary Education*

- Create incentive programs and poverty alleviation programs aimed at ensuring both boys and girls have access to education and reduce the need for dropout due to socioeconomic needs (such as Conditional Cash Transfer programs).
- Implement early inclusion of agriculture courses to stimulate students' interest in agriculture.
- Ensure that agriculture is presented to girls as well as boys as an option for employment in curriculum and teaching methods.

#### *Secondary Education*

- Increase the availability of public and private institutions that offer an agricultural vocational focus and improve curriculum for agricultural education.
- Provide role models, programs, and incentives to encourage female students to pursue agricultural education.
- Collaborate with institutions and firms in the labor market to create an agricultural curriculum that is relevant to the needs of the sector.

### *Second Chance and Alternative Secondary Education*

- Increase the coverage and funding for alternative secondary education, particularly for programs that have paid teachers and that offer the national basic curriculum.
- Increase the availability of alternative secondary education programs that offer an agricultural vocational focus
- Create and implement a standardized curriculum for agricultural education in alternative secondary schools.

### *Tertiary Education*

- Increase availability of tertiary level agricultural education institutions and increase the capacity of existing institutions.
- Explore new and innovative ways of funding institutions make agriculture institutions sustainable and accessible to students from poorer backgrounds.
- Collaborate with institutions and firms in the labor market to create an agricultural curriculum that is relevant to the needs of the sector.
- Increase opportunities for relevant agricultural field practice, internships, and research.



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