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LAC Regional Workforce Development Program (Advance)

Honduras Labor Market Assessment

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CONTENTS

EXECUTIVE SUMMARY

The LAC Regional Workforce Development Program—known as the Advance Program—is strengthening the capacity of select two- and three-year tertiary technical education programs in Honduras, Guatemala, and Jamaica to provide market-relevant, quality training to disadvantaged youth for increased employment. Advance works to build target institutions' capacity by (1) improving curriculum design and pedagogy, (2) providing professional development opportunities for faculty and staff and (3) enhancing labor market bridging services to help students find gainful employment after graduating.

The Program has designed and conducted a baseline assessment to examine a major element of the system: the labor markets, and in particular market demand for skills, in each of the countries in which the Program is working. This evaluation of each country's labor market analyzes economic trends and patterns and identifies growth sectors. The study looks at the demand for technical education graduates, and the supply of qualified workers, in selected growth sectors. It entails significant use of a value chain framework, a tool that is designed to be adopted by local stakeholders and to identify and understand ongoing demand for the types of skills provided through technical education at the tertiary level. The goal is that this assessment not only will help technical training institutions in Honduras revamp their offerings, but also, more generally, will help decision makers understand what the demand for skills might look like in the future.

A traditional labor market assessment is based on detailed occupational mapping, but in Honduras—as in many other developing countries—this approach is not viable because of data limitations. Rather, FHI 360's labor market assessments identify priority skills needs by working backwards from market demand. The process of gathering and analyzing data to properly select growth sectors, and then identifying and interviewing key informants in those sectors, can take a significant amount of time (particularly in a data-poor environment like Honduras), but it is indispensable for conducting analysis based on sound quantitative and qualitative evidence.

First, we undertook desk research and quantitative analysis to answer questions about the overall economic context and employment trends—including a review of recent literature such as the analysis conducted by McKinsey & Company for the Government of Honduras, upon which the country's new Honduras 20/20 economic development plan is based—and briefly reviewed relevant policies. We then conducted a rigorous sector selection based on quantitative and qualitative data, choosing four priority sectors as a starting point for the assessment: coffee, textiles, tourism, and health. In our case, the sectors selected were not merely the four top-ranked sectors; rather, rankings ranged from 2 to 9. Selecting sectors that are among the top nine is well within the desired ranking range. We then focused our attention on mapping stakeholders in these sectors to prepare for a set of interviews conducted by FHI 360.

Next, we conducted primary research to analyze the priority value chains—those that have been identified as generating employment now and in the future—by interviewing representatives of 47 organizations in the target geographical regions. During this phase, we honed in on the skills demanded by employers that can be developed within the context of two- and three-year technical degree programs, as these are the focus of the project. We paired this analysis with research to assess existing technical training and education programs and how well they are matched to the demands of employers.

What did we find? Although economic growth and foreign direct investment have improved in Honduras since the crisis of 2009, the economy is vulnerable to shocks, and growth in the gross domestic product (GDP) is not keeping up with population growth. The country's educational system fails to prepare most youth for modern skilled jobs, and a high proportion of young people are neither working nor in school. Those who do encounter opportunities for work remain in the informal, agricultural and low-end services sectors, with most job creation in low-productivity sectors.

Overall, the majority of the working-age population has a basic education or less; however, Honduran youth are becoming increasingly educated. According to FHI 360's calculations based on the 2013 census, 33 percent of 15- to 29-year-olds who are not in school have a secondary education, and an additional 9 percent have at least some post-secondary education. We estimate that around 41 percent (67,000) of those graduating from secondary education in 2013 entered post-secondary education.

However, Honduras continues to be stymied by insecurity and faces serious challenges to competitiveness and an inclusive labor market. In particular, many Honduran youths find themselves entering adult life with few employment opportunities and are often unprepared for the demands of the positions that do exist. It is thus imperative that the opportunity of steady economic growth and increasing investment in the country not be squandered. Investments in education that both align with the current needs of employers and anticipate future demand can help both businesses and individuals to meet their full potential.

Our next step was to map priority value chains in our selected sectors. We aimed to learn their structures, the opportunities that exist within them, and the existing and potential responses of the education system to these opportunities. We found that employers and business associations echoed a number of the same needs and priorities across sectors. In general, employers said they had no shortage of job applicants, but indicated that Honduras' secondary education system has left many jobseekers unprepared for success in the workplace, particularly in management and administrative roles. Workers with higher levels of education were often seen as having unrealistic expectations regarding salary, duties and level of effort, leading some employers to prefer hiring jobseekers with just a secondary degree (*bachillerato*) who demonstrated attitudes and soft skills such as a desire to learn, clear communication skills and creativity. This preference for candidates with secondary degrees was seen most often in the area of tourism, where businesses have been gravely affected by decreased business due to the perceived security threat and therefore look beyond university graduates—who demand a higher salary—to fill vacancies.

The textile (*maquila*) industry also noted dissatisfaction with current education and training arrangements not managed directly within the sector, excluding highly technical positions such as industrial chemical technicians, though deficiencies were still noted there. Due to the nature of the *maquila* industry model, companies have a highly standardized production structure, and as a result, training is often managed internally to respond to specific production needs.

Across the sectors studied, many employers reported conducting significant in-house training in order to get their new hires up to speed. Particularly in the tourism sector, employers noted a need for modern accounting and finance skills, especially for knowledge of accounting software, as public schools teach accounting by hand. In all sectors, most particularly in tourism and health, English was seen as a need, though in coffee and textiles it was more likely to be seen as a "bonus" for customer-facing positions.

Similarly, employers in all sectors saw the need for skills relating to use of technology: computers, medical, laboratory and imaging equipment (in the health sector), and other specific software, depending

on the industry. Some employers saw young people who are familiar with social media platforms as having an advantage in terms of technological skills.

In pairing our value chain maps with workforce overlays showing specific positions, alongside “sister” or parallel diagrams of existing and potential education offerings, we found that there are a number of occupations and potential occupations in Honduras for which there are currently no technical training programs at the university level.

- In the coffee sector, this includes training in process control (tasters); agribusiness (import supervisors, specialists in agricultural marketing and marketing of equipment and supplies); and coffee cultivation (coffee farm administrators, quality and sustainability system managers, and technical assistants in organic production).

- In tourism, this includes training in maintenance and restoration of cultural heritage (cultural managers); tourist guiding and entertainment (rural tourism guides and interpreters); web design (web designers); haute cuisine (chefs); insurance (co-insurers of tourists and tourist goods); tourist security (municipal tourist police); tourism development (destination developers and trip assistants); and commercial airline services (flight attendants and customer service assistants).

- In textiles, this includes training in production management (warehouse heads, quality control, production supervisors, heads of industrial manufacturing, heads of end product storage); textiles and fibers (embroidery supervisors); software development (software developers); electromechanics/industrial electronics (technicians in industrial maintenance, heads of robotics and industrial automation); industrial fashion and apparel design (industrial designers); industrial chemistry (technicians in industrial chemistry, heads of input quality control); and drawing and technical drafting (industrial designers).

- In health, this includes training in pharmacy assistance (pharmacy technicians); biomedicine (medical technology managers, maintenance and risk managers); certain nursing specialties (maternal and child nurses, emergency nurses, instrumentalist nurses, and geriatric nurses); information and communication technologies and health documentation (quality assurance technicians, statisticians, and health statistics and information managers); health communications (English translators and interpreters); paramedicine (paramedics); and primary health care specialties (primary health care assistants).

This assessment will help technical training institutions and local stakeholders become familiar with value chain maps and learn how to develop and analyze them, and in so doing build local capacity for analysis and action that will reach far beyond the findings of this document. This ability will allow local stakeholders to detect and evaluate how economic opportunities and relationships between market actors will drive skills needs—not only today but also in the future—providing a common understanding upon which all parties may begin and maintain a conversation about how the technical education system can better respond and adapt to the needs of employers.

GLOSSARY OF TERMS AND ACRONYMS

BCH Banco Central de Honduras (Central Bank of Honduras)

CAE Centro de Adiestramiento en Enfermería (Nursing Training Center)

CANATURH Cámara Nacional de Turismo de Honduras (National Chamber of Tourism of Honduras)

COHEP Consejo Hondureño de la Empresa Privada (Honduran Council of Private Enterprise)

CRAED Centros de Recursos de Aprendizaje en Educación a Distancia (Distance Education Centers)

CUROC Centro Universitario Regional del Occidente **(**Regional University Center of the West)

GDP Gross Domestic Product

HOPEH Asociacion de Pequeños Hoteles de Honduras (Association of Small Hotels of Honduras)

ICT Information and Communications Technology

IDB Inter-American Development Bank

IHCAFE Instituto Hondureño de Café (Honduran Institute of Coffee)

IHSS Instituto Hondureño de Seguridad Social (Honduran Institute of Social Security)

ILO International Labor Organization

INE Instituto Nacional de Estadística (National Institute of Statistics)

INFOP Instituto Nacional de Formación Professional (National Institute of Vocational Training)

IPC Instituto Politécnico de Centroamérica (Central American Polytechnic Institute)

ISCED International Standard Classification of Education

ISCO International Standard Classification of Occupations

LAC Bureau of Latin America and the Caribbean

MSMEs Micro, Small and Medium Enterprises

NGO Non-Governmental Organization

PROCINCO Programa de Capacitación Integral para la Productividad (Program of Integral Training for Productivity)

Product Space A network representation of the relatedness or proximity between products traded in the global market.

RCA Revealed Comparative Advantage. An index used to calculate the relative success a country has had in the export of a certain good. An RCA >1 indicates that the country's share of the world export market in that product is higher than its average world market share (across all products).

RWDP Regional Workforce Development Program

SMEs Small and Medium Enterprises

UCENM Universidad Cristiana Evangélica Nuevo Milenio (New Millennium Evangelical Christian University)

UCRISH Universidad Cristiana de Honduras (Christian University of Honduras)

UJCV Universidad José Cecilio del Valle **(**University of José Cecilio del Valle)

UMH Universidad Metropolitana de Honduras (Metropolitan University of Honduras)

UNAH Universidad Nacional Autónoma de Honduras (National Autonomous University of Honduras)

UNICAH Universidad Católica de Honduras (Catholic University of Honduras)

UNITEC Universidad Tecnológica Centroamericana (Central American Technological University)

UPH Universidad Politécnica de Honduras (Polytechnic University of Honduras)

USAID United States Agency for International Development

USAP Universidad de San Pedro Sula **(**University of San Pedro Sula)

WDI World Development Indicators

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The document draws upon FHI 360's knowledge gained through carrying out labor market assessments in Africa, the Middle East, and Asia, and includes specific examples from these experiences.

USER GUIDE: FREQUENTLY ASKED QUESTIONS ABOUT THE LABOR MARKET ASSESSMENT

The following discussion includes key questions about the labor market assessment process and lists corresponding pages of this report where more information can be found related to each question.

What methodology was used in the labor market assessment?

FHI 360's labor market assessment identified priority skills needs by working backwards from market demand. To do this, we followed a rigorous methodology. We began by a) researching the general economic, demographic and education context; then b) looked at the market demand for products and services and considered how these may affect demand for skills; c) selected growth sectors likely to generate jobs in the near future; and d) interviewed employers and experts to understand how industry structure and value chain relationships within these sectors influence skills demand, as well as the types of employment opportunities available now and in the future as the industry grows and evolves.

Pages 10-12

What was the methodology used in the sector selection process?

The methodology consulted national statistical sources and surveys, export and product space databases, as well as quantitative and qualitative information from other published sources and from experts. The sector selection analysis was conducted during a three-stage process consisting of sector identification, triage and assessment where we evaluated sector growth, performance and implications for employment. Then we developed a customized scoring matrix used to rank sectors (criteria in Honduras included past performance, likely future performance, geographic relevance and potential impact of tertiary education on the sector). This provided a ranked list of sectors likely to generate employment growth, creating a roadmap for final sector selection.

Pages 19–30

What are the definitions of the criteria used to select economic sectors and how were they weighted? Why were these criteria used?

FHI 360 adapted a methodology developed for the World Bank that was designed to conduct a rapid assessment with limited resources. The approach ranked sectors according to three sets of criteria: size, growth potential and additional project-specific criteria that will affect implementation.

Pages 20–22

- Size of sector (weight of 40/100). The indicators in this category (employment, expenditures and exports) all aim to characterize the scale of the sector. An intervention in a sector with more employees is likely to have a greater impact, holding all other factors constant.
- Growth potential (45/100). An accurate prediction of which sectors will grow is, by definition, impossible. However, some indicators are available that tend to correlate with future growth. For services sectors, these indicators are estimated based on qualitative information.
- Project-specific criteria (15/100). This includes the level of activity of a given sector in the project's designated geographic range and the potential for interventions in tertiary

education to impact the sector's competitiveness and therefore income and employment generation potential. Other criteria may arise based on the framework and needs of a project.

What methodology was used to construct the value chains?

Via key informant interviews, we developed value chains that include an analysis of end market demand, industry relationships and constraints to growth. We identified hiring needs and required education levels. To address the challenge of quantifying expected employment and skills demands (there is a lack of hard data, and in general employers do not have the incentive to share this information), we asked employers open-ended questions about their skills needs and priorities. Then, we synthesized information we had gathered on the nature and quantity of positions and occupations, functions to be performed, educational requirements, entrepreneurship opportunities and employer opinions. Using this information, we developed the following:

Pages 30–32

- Value chain maps depicting industry structure and channels
- Information about the demand for skills as an "overlay" to the map
- Parallel (or "sister") diagram to the value chain map that shows the local education and training offering aligned with skills demand

Based on the value chains, what kind of analysis can be done?

Value chain mapping helps implementers and policymakers understand industry structure and dynamics by identifying types of firms involved and diagramming their roles and relationships. A value chain map shows how a particular product flows through different market channels at the country level, and helps to identify constraints and opportunities for improving performance of each stage in the production process according to the size of the channel. A workforce overlay on a value chain map helps identify employment and entrepreneurship opportunities and where training and skills development are needed, and how they can be delivered, such as through general education, technical education, vocational training or on-the-job learning. The workforce overlay can also help identify career pathways for youth within a sector. This analysis can help to understand:

Pages 33-34

- How differences in industry structure affect how skills needs are defined and skills investments are made
- Where gaps in local education and training exist

How did you identify within the value chain whether there were tertiary technical training programs in the country or internationally?

To understand gaps in knowledge and education opportunities, and the effect on productivity and quality across sectors, subsectors and value chains in Honduras, the "sister" or parallel diagram was developed. Based on the professional profiles described by those interviewed, technical positions were analyzed and matched with corresponding technical degree programs, categorized as existing or non-existent in Honduras using information from the National Education System (Sistema Nacional de Educación). Sector actors identified existing positions as they function currently. Non-existent positions were identified using the International Labor Organization's (ILO) International Standard Classification of Occupations (ISCO). In order to understand the educational offerings in other countries that correspond with the skills needs of the selected sectors in Honduras, we carried out a comparative analysis to look at technical education on the tertiary level in Spain, Chile and Argentina. This analysis was used to show

Pages 41–43

how new educational programs and the introduction of technical positions identified in the ILO's ISCO could strengthen the productivity and competitiveness of the value chain.

OBJECTIVES OF THE PROGRAM

The Advance Program is strengthening the capacity of select two- and three-year tertiary technical education programs in Honduras, Guatemala, and Jamaica, providing market-relevant, quality training to disadvantaged youth for increased employment. The Program is funded by the United States Agency for International Development (USAID) Bureau of Latin America and the Caribbean (LAC) and the Office of Regional Sustainable Development. With a regional post in Honduras and country offices in Honduras, Guatemala and Jamaica, FHI 360 engages stakeholders from education and the private sector in each country to strengthen market-relevant technical training programs based on each country's workforce needs. Advance works to build target institutions' capacity by (1) improving curriculum design and pedagogy, (2) providing professional development opportunities for faculty and staff and (3) enhancing labor market bridging services to help students find gainful employment after graduating.

Additionally, Advance improves access for disadvantaged students to selected technical education programs by (1) strengthening institutions' recruiting and admissions practices and (2) providing local and U.S.-based scholarships for disadvantaged students with strong leadership potential to attend the technical programs being strengthened. To carry out this work, Advance provides grants to local organizations to support disadvantaged youth in attending technical programs and engages local, regional and U.S.-based academic institutions to partner with local technical institutions to strengthen degree programs, student services and scholarship programs. Through RWPD, FHI 360 is leveraging its presence in Honduras, Guatemala and Jamaica to promote the exchange of best practices and lessons learned in tertiary technical education and workforce development between the three countries, with positive implications for the greater LAC region and beyond.

LIMITATIONS OF THE ASSESSMENT

It should be noted that this assessment is not meant to be a comprehensive labor market analysis that focuses on presenting a series of historical and current labor market indicators. Although indicators such as employment by detailed sector would bolster the analysis, as noted above, data on employment are limited in Honduras. Nor is this study constructed from surveys of the number of positions required by a census or a statistically significant sample of employers. Therefore, without precise numbers, this assessment relies on published estimates and those provided by experts regarding employment in each of the sectors studied here.

PURPOSE OF THIS LABOR MARKET ASSESSMENT

The Program began with an assessment to identify key stakeholders and program participants. By design, many of the individuals taking part in assessment activities will be part of future program activities as counterparts, stakeholders or beneficiaries. The assessment process provided a way of understanding how these individuals might be engaged constructively to ensure relevance, local ownership and sustainability of program activities. Secondly, the Program designed and conducted a baseline assessment to examine a major element of the system: the labor markets, and in particular market demand for skills, in each of the countries in which the Program is working. This evaluation of each country's labor markets identified economic trends and patterns, growth sectors, demand for technical education graduates and supply of qualified workers, allowing stakeholders to understand the economic context and employment potential in Honduras. It entailed significant use of a value chain framework, a tool that is designed to be adopted by local stakeholders to identify and understand ongoing demand for the types of skills provided through technical education at the tertiary level. This assessment will not only help technical training institutions in Honduras revamp their responses to skills demands, but also, more generally, will help decision makers understand what the demand for skills might look like in the future.

METHODOLOGY

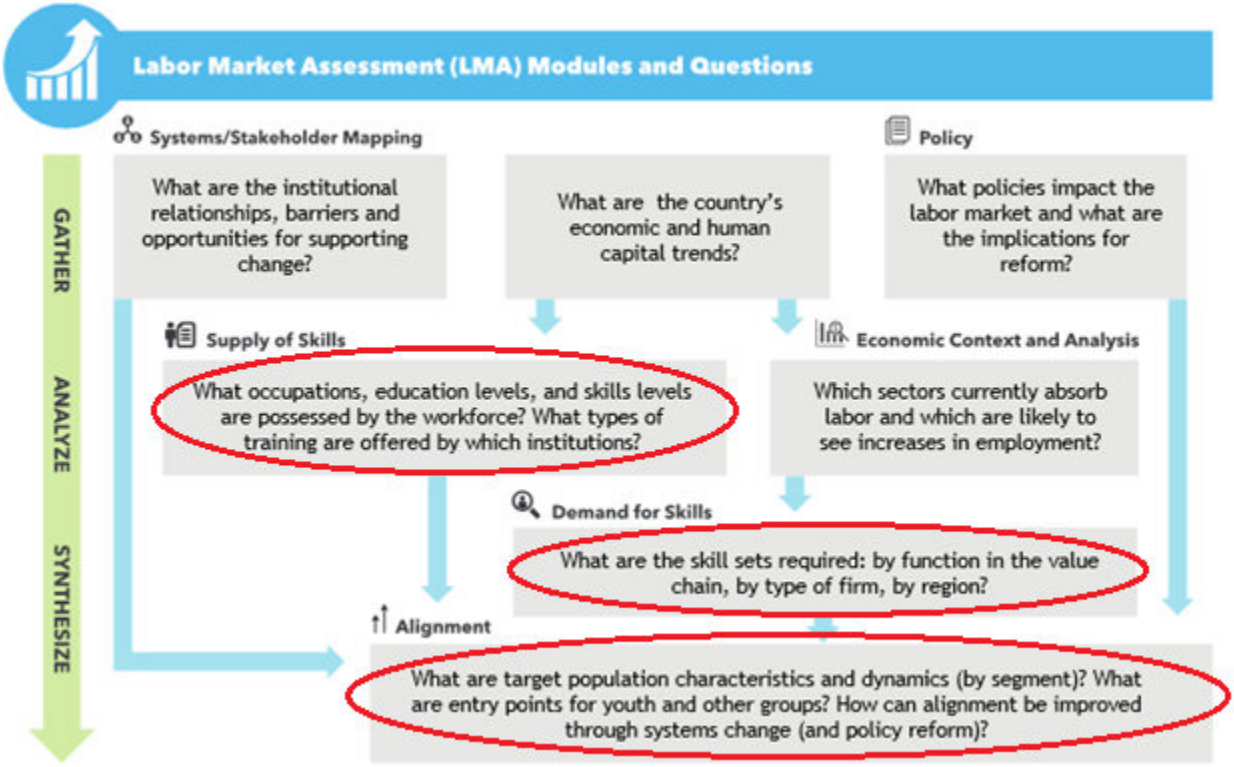
A traditional labor market assessment is based on detailed occupational mapping, but in Honduras—as in many other developing countries—this approach is not viable because of data limitations. Specifically, in Honduras it is difficult to access updated and complete data on employment by detailed sector or occupation. Nor is there a recent country survey of employers' skills needs. Rather, FHI 360's labor market assessment identified priority skills needs by working backwards from market demand. To do this, we followed a rigorous methodology. We began by a) researching the general economic, demographic and education context; then b) looked at the market demand for products and services and considered how these may affect demand for skills; c) selected growth sectors likely to generate jobs in the near future; and d) interviewed employers and experts to understand how industry structure and value chain relationships within these sectors influence skills demand, as well as the types of employment opportunities. The process of gathering and analyzing data to properly select growth sectors, and then identifying and interviewing key informants in those sectors, can take a significant amount of time (particularly in a data-poor environment like Honduras), but it is indispensable for a conducting an analysis based on sound quantitative and qualitative evidence.

FHI 360's modular labor market assessment framework can be customized to different areas of focus and degrees of depth depending on client needs, context, and the challenges to be addressed (see figure 1). For each module, there is an overarching question and a set of associated tools that can help arrive at the answer. Tools are drawn from a range of fields including economics, education, psychology and business; they include frameworks, approaches and data sources as diverse as value chains, social network analysis, product space and the global trade share matrix. In addition, there are questions for use in structured interviews and guidelines for focus groups with the full range of actors in a labor market system. The conclusions derived from the analysis are depicted using infographics accompanied by a simple narrative to help make the findings actionable for decision makers. We believe that our approach

provides a better understanding of the ultimate goal of most labor market assessments: the nature of employer demand for skills. Our tools and approaches help to combine quantitative and qualitative information in such a way that we can recognize the prevailing "patterns" of labor market behavior, their drivers and, therefore, their expected future direction.

Figure 1 illustrates our comprehensive framework for examining all aspects of a labor market system. In the case of this Program, we emphasized some modules more than others based on the needs of the Program to strengthen the capacity of technical training institutions and nuances of the local context in Honduras (red circles show high-priority areas for our analysis).

FIGURE 1. FHI 360's Labor Market Assessment Framework



In the first phase (depicted at the top of the framework in Figure 1) we undertook a period of desk research. The review of secondary literature included recent key studies by McKinsey, the National Autonomous University of Honduras, Programa de Desarrollo de Proveedores/United Nations Development Programme/ Netherlands Development Organization, and many others, which helped in orienting our research and in sector selection (see References for a full list of literature reviewed). In particular, the McKinsey-led study, commissioned and published by the Government of Honduras, has formed the basis for President Juan Orlando Hernández' new economic development plan Honduras 20/20, which aims to create 600,000 jobs in five sectors by 2020 and is therefore a critical orienting document for the Advance Program in Honduras. Next, an in-depth review, analysis and discussion of quantitative information served to answer questions about the overall economic context, human capital employment trends and characteristics of the target population in Honduras; see Annex I for a comprehensive country data dashboard. We then conducted a preliminary sector selection according to a

rigorous three-step process, selecting four sectors (coffee, textiles, health and tourism). Finally, we focused our attention on mapping stakeholders to prepare for a set of interviews conducted by FHI 360.

In the second phase, we conducted primary research to analyze priority value chains—those that have been identified as generating employment now and in the future. While growth sectors were selected broadly, the value chain and skills demand analysis focused on specific products (such as export apparel and business tourism). This was particularly important in the area of textiles (*maquilas*) as business practices and expected projections are highly guarded due to manufacturers' relationships with international businesses.

During this phase, we honed in on the functional roles mentioned by employers for which skills can be developed within the context of two- and three-year technical degree programs, as these are the focus of the project. We paired this analysis with research into existing technical training and education programs, and how well they are matched to the demands of employers. The results of this stage of analysis demonstrated both opportunities and challenges for strengthening technical programs across selected sectors. Each sector section contains a value chain map with workforce overlay, a "sister" or parallel diagram that aligns positions with existing and potential careers and a corresponding analysis. The revised interview guide appears in Annex II, additional value chain maps appear in Annex III, and the full list of interviews is in Annex VI.

The third phase will serve as the "alignment" process, allowing educational institutions to use the findings of this assessment to develop offerings that respond to local labor market needs. The Sistema de Educación Superior in Honduras, along with the technical training institutions, are some of the key stakeholders that will benefit from the findings. Joint exercises with the SES and employers will build on the findings of this labor market assessment, using tools including value chain mapping to identify and develop curricula for existing and new two- and three-year technical degrees.

ECONOMIC CONTEXT, HUMAN CAPITAL AND EMPLOYMENT TRENDS, AND CHARACTERISTICS OF THE TARGET POPULATION

ECONOMIC CONTEXT

Though economic growth and foreign direct investment have improved in Honduras since the crisis of 2009, the economy is vulnerable to shocks, and GDP growth is not keeping up with population growth. The country's educational system fails to prepare most youth for modern skilled jobs, and a high proportion of young people are neither working nor in school. Those who do encounter opportunities for work remain in the informal, agricultural and low-end services sectors, with most job creation in low-productivity sectors. Across the country, Honduran institutions are perceived as being incapable of addressing—among other key issues—the issues of access and quality of education.

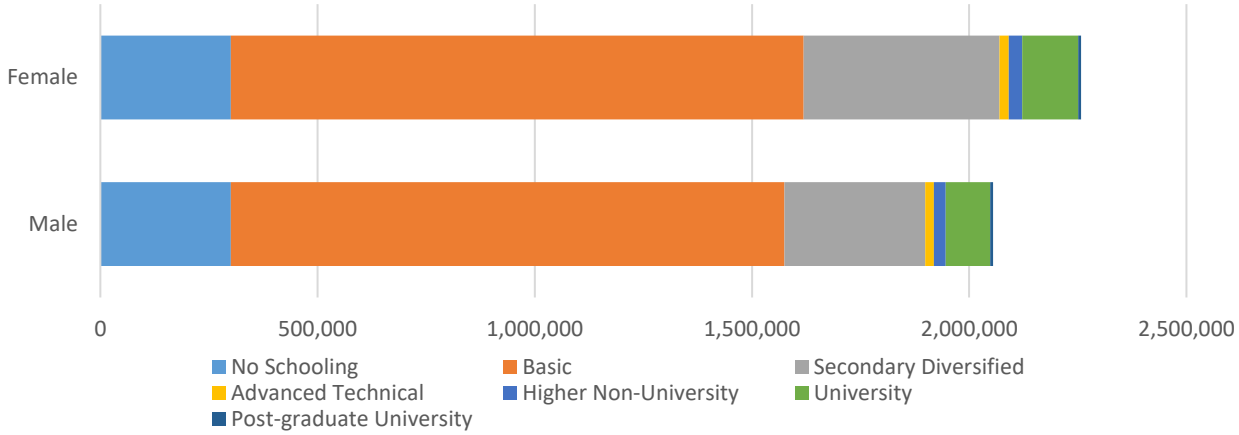
Honduras is a low- to middle-income country with a large percentage of its population living in poverty; it also faces some of the highest levels of crime and violence in the world. The economy is small, highly externally focused and dependent on agriculture, and as a result is vulnerable to many types of shocks. Indeed, the country suffered serious economic and social setbacks as a result the U.S. recession and a political coup, both in 2009. Since then, the economy has experienced a fluctuating recovery, with GDP growth at more than 2.5 percent annually since 2012. In 2013, the manufacturing, wholesale and retail trade and agriculture sectors were the highest contributors to GDP. The average annual growth rate[1] of all sectors excluding electricity, gas and water, was positive between 2009 and 2013.[2]

However, GDP growth has not kept pace with population growth, meaning that GDP per capita has not grown appreciably. Thus, many Hondurans are not enjoying the benefits of growth. In recent years, increasing numbers of young Hondurans—many of them children—have emigrated because of the combination of violence and lack of opportunities at home.

HUMAN CAPITAL

Though access to education is improving, the quality of the educational system remains severely challenged. Overall, the majority of the working-age population has a basic education or less (Figure 2).[3]

FIGURE 2. Honduras: Population Aged 15–64 by Educational Attainment, 2013



Source: Instituto Nacional de Estadística (National Institute of Statistics; INE), 2013

At the same time, Honduran youth are becoming increasingly educated. Figure 3 is a “stocks and flows” diagram, which allows the viewer to instantly visualize the composition of Honduras’ youth population; quantifies the various components of the educational population and potential labor pool; helps the viewer to understand changes in the population over time; and provides insights into future trends in the labor market.

[1] CAGR or compound annual growth rate.

[2] World Bank. World Development Indicators (WDI), 2015. Washington, DC: The World Bank. http://data.worldbank.org/data-catalog/world-development-indicators; Instituto Nacional De Estadística, Honduras (INE). Tegucigalpa. 2013. http://www.redatam.org/binhnd/RpWebEngine.exe/Portal

[3] Instituto Nacional De Estadística, Honduras (INE). 2013.

A ***stock*** represents a quantity of something (in our case, people) in the system at one point in time, and the ***flow*** represents the rate at which the stock is changing[4]:

- Think of a bathtub. The volume of water currently in the tub is the **stock**.
- The rate at which water fills the tub to increase the water level is the **flow** (also called inflow). Conversely, flow can be the rate at which water drains out of the tub, decreasing the water level (also called outflow).

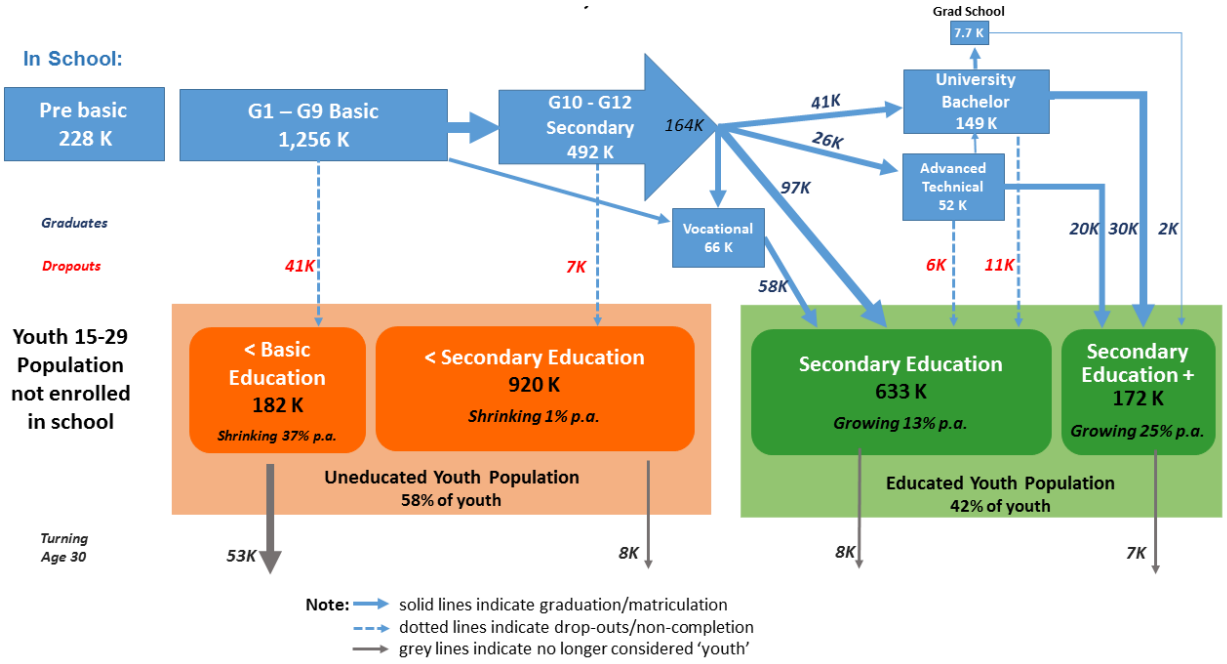
The stocks and flows diagram in Figure 3 analyzes Honduras' youth population in 2013. There are "stocks" in two places—(1) students currently studying at each stage of the educational system (see blue arrow and rectangles at top); and (2) youth aged 15–29 who have either completed or left each stage (see the orange and green rounded shapes at the bottom of the diagram). "Flows" are the rates at which youth pass (inflow and outflow) through the various stages of the education system and into and out of the un-enrolled youth population. In the figure, one can review the current population (stock) and flow (transition) of students from primary through the various postsecondary education tracks (Advanced Technical, University Bachelor, and Graduate School).

According to the diagram, approximately 164,000 students graduated from secondary school in 2013. FHI 360 estimates that 41 percent (67,000) of those graduating from secondary education in 2013 entered post-secondary education: approximately 41,000 entered university bachelor degree programs, and approximately 26,000 entered advanced technical training programs.

Thirty-three percent (633,000) of 15- to 29-year-olds not currently in school have a secondary education, and an additional 9 percent (172,000) have completed some level of post-secondary education.[5] The number of 15- to 29-year-olds with only a secondary education who are not in school is growing 13 percent annually, while the number of 15- to 29-year-olds with some postsecondary education who are not in school is growing 25 percent annually.

[4] Donella H. Meadows and Diana Wright, *Thinking in Systems – A Primer* (London: Sustainability Institute. Earthscan Publishing, 2009), 18.
[5] INE, 2013

FIGURE 3. Honduras Education Stocks and Flows, 2013



Sources: INE, Secretaría de Educación de Honduras, INFOP

However, the majority of Honduran students of basic education do not achieve grade-appropriate literacy and numeracy as measured by national and international tests.[6] Meanwhile, nearly a quarter of those with higher education emigrate.[7]

INVESTMENTS

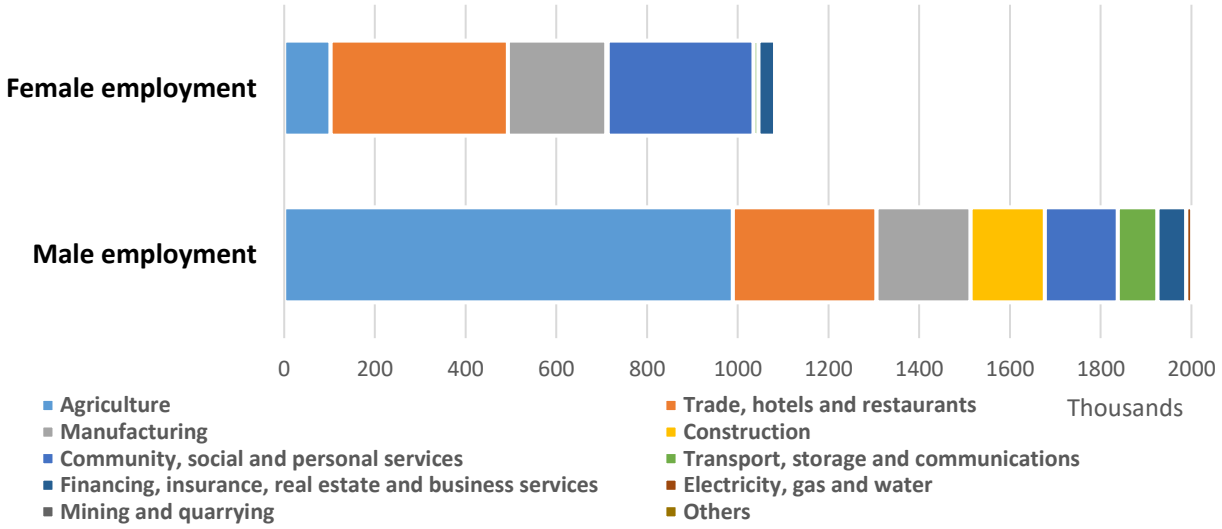
Foreign investment has also picked up since 2010, with flows from Latin America and other countries increasing in the last three years (while flows from North America and Europe have moderately decreased). Financial services/real estate, *maquilas*, and transport, warehousing and communications received the most investment in 2014.[8]

Despite these investments, informal work, agriculture and low-end services account for the bulk of employment in Honduras; in recent years, most employment growth has been in low-productivity sectors.[9] Of the total employed population, 58 percent work in the informal sector, and only 44 percent of formal sector workers receive wages.[10] Agriculture accounts for 36 percent of employment; manufacturing industry, 19 percent; and services, 45 percent. While employment and value added as a percentage of

[6] World Bank, 2016
[7] World Bank, 2010
[8] Banco Central de Honduras (BCH). Honduras en Cifras: 2012–2014. Tegucigalpa. http://www.bch.hn/download/honduras_en_cifras/hencifras2012_2014.pdf
[9] World Bank, 2016
[10] LO/FTF Council. [add year] http://www.ulandssekretariatet.dk/content/loftf-council-introductionthe-loftf-council-danish-trade-union-council-international

GDP in agriculture and manufacturing fell in recent years, both increased in services.[11] Male employment is greatest in agriculture, hunting, forestry and fishing, while female employment is greatest in wholesale/retail trade, restaurants and hotels (see Figure 4).[12]

FIGURE 4. Honduras: Employment by Industry and Sex



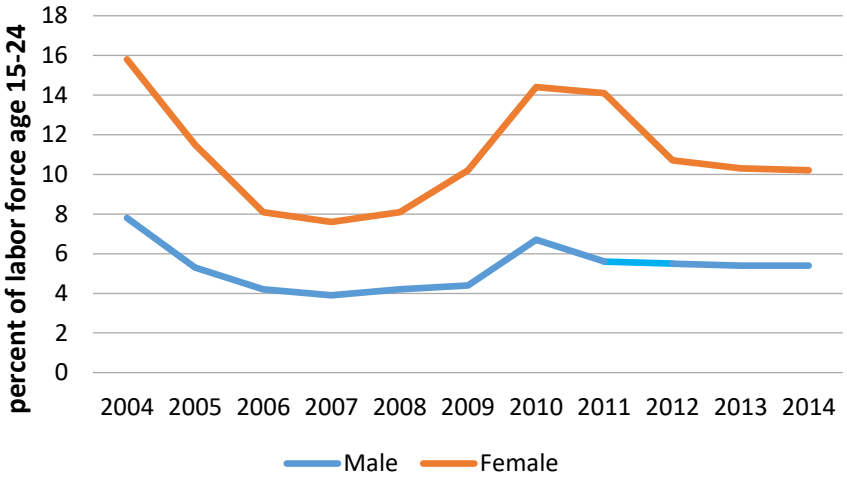
Sources: BCH, INE

TARGET POPULATION

Youth aged 15–29 year represent 29.5 percent of the total population and 30.5 percent of the working age population (aged 15–69).[13] The official youth unemployment rate is 8 percent—almost twice that of the overall unemployment rate—with young women nearly twice as likely to be unemployed as young men[14] (Figure 5). More than 41 percent of young people are not in school or working.[15] The youth labor force participation rate is holding steady at the lowest level in nearly 25 years (Figure 6).[16]

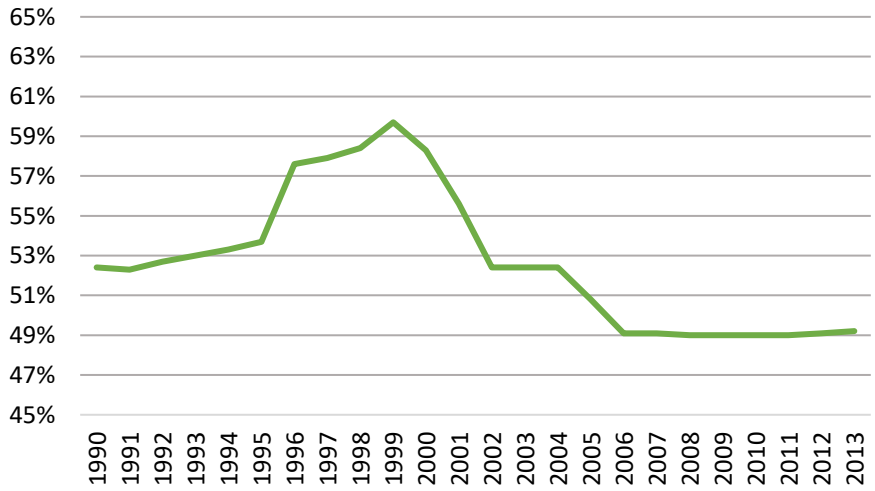
[11] World Bank. WDI, 2015
[12] BCH, INE [add year]
[13] INE [add year]
[14] World Bank, WDI [add year]
[15] World Bank, WDI, 2015
[16] World Bank, WDI [add year]

FIGURE 5. Honduras: Youth (15–24) Unemployment Rate by Sex, 2004–2014



Source: World Bank, World Development Indicators (WDI)

FIGURE 6. Honduras: Youth (15–24) Labor Force Participation Rate, 1990–2013



Source: World Bank, WDI

POLICY ENVIRONMENT

Finally, Honduras' government is perceived to be weak in its ability to formulate and implement sound policies and regulations that permit and promote private sector development.[17] The country ranks 110 out of 189 economies on the World Bank's Ease of Doing Business Scale[18]; and ranks 88 out of 140 countries on the Global Competitiveness Index.[19]

[17] World Bank. Worldwide Governance Indicators (WGI), 2014. Washington, D.C.: http://info.worldbank.org/governance/wgi/index.aspx#home

[18] World Bank. Ease of Doing Business Scale, 2016. Washington, DC. 2016. http://www.doingbusiness.org/rankings

[19] World Economic Forum. Global Competitiveness Report, 2015-2016. 2016. http://reports.weforum.org/global-competitiveness-report-2015-2016/

It must be noted that Honduras has numerous economic and strategic advantages. The country has had great success in attracting foreign direct investment (FDI) and developing an export manufacturing industry, and with access to more than 40 countries through free trade agreements, may be able to extend this export expertise to other areas. It is strategically located, with Puerto Cortés linking it to the Gulf and east coast of the United States. Honduras also is home to many natural and cultural tourist attractions and has the infrastructure to support business tourism.

Clearly, however, Honduras continues to be stymied by insecurity and faces serious challenges to competitiveness and an inclusive labor market. In particular, many Honduran youths find themselves entering adult life with few employment opportunities and are often unprepared for the demands of the positions that do exist. It is thus imperative that the opportunity of steady economic growth, rising educational attainment and increasing investment in the country not be squandered. Investments in education that align with the current needs of employers and anticipate future demand can help both businesses and individuals to meet their full potential. In order to figure out what skills employers need, we move on to sector selection and value chain analysis.

SECTOR SELECTION AND PRIORITY VALUE CHAINS

In order to understand the demand for skills, we must first understand which sectors are growing (or adjacent to growing sectors), what are the key value chains in these sectors, how they are structured, what opportunities exist within them and what the education system's existing and potential responses are to these opportunities. In Honduras, although the term "value chain" is sometimes used, few have the expertise to carry out the analysis. This assessment intends to help technical training institutions and local stakeholders become familiar with value chain maps and learn how to develop and analyze them, and in so doing build local capacity for analysis that will reach far beyond the findings of this document. This ability will allow local stakeholders to detect and evaluate how additional economic opportunities and relationships between market actors will drive skills needs—not only today but also in the future—providing a common understanding upon which all parties can begin and maintain a conversation about how the technical education system can better respond and adapt to the needs of employers. Table 1 presents two of the key analytical processes we use to arrive at this information.

TABLE 1. From Growth and Competitiveness to Jobs

Sector Selection		
Methodology	Output	Relevance
Consult national statistical sources and surveys, export and product space databases. Adapt scoring matrix to country context and donor, government and/or client priorities. Conduct a three-stage process consisting of sector identification, triage and assessment. Evaluate sector growth, performance and implications for employment.	✓ Customized scoring matrix used to rank sectors (criteria in Honduras include past performance, likely future performance and geographical relevance and potential impact of tertiary education on the sector). ✓ List of sectors likely to generate employment growth.	✓ Growth sectors are natural places to invest in skills. ✓ Adjacent (often domestic) sectors with similar skills needs can be identified using the more obvious (often export) growth sectors as a starting point.

Value Chain Mapping		
Methodology	Output	Relevance
Via key informant interviews, map the value chains including an analysis of end market demand, industry relationships and constraints to growth. Identify hiring needs and required education levels. Quantify if possible. Ask employers open-ended questions about their skills needs and priorities. Systematize information gathered about nature and quantity of jobs, function to be performed, education requirements, entrepreneurship opportunities and employer opinions.	✓ Value chain maps depicting industry structure and channels. ✓ Information about demand for skills depicted via an "overlay" to the map. ✓ "Sister" or parallel diagram to the value chain map that shows the local education and training offering aligned with skill demand.	✓ Differences in industry structure affect how skills needs are defined and skills investments are made (for example, the lead buyer in a manufacturing chain is the de facto source of skill standards for local suppliers). ✓ Qualitative analysis helps to understand whether the informal channels are growing cyclically (alongside) or counter-cyclically with modern, formal production, as low-income youth are frequently employed in informal channels. ✓ Gaps in local education and training offerings are easily identifiable.

Why select sectors? The simple answer is, to know where the jobs will be. Furthermore, if the right skills are developed for the right people in the right market, a virtuous skills-to-investment cycle is generated. For that reason, we don't just want a rough guess at where jobs are likely to appear, we want a deeper understanding of the dynamics that are leading to growth and the ways in which skills are or can contribute to that growth.

Which sectors or industries should be selected for priority consideration? Remembering that tools for selecting sectors have existed for decades and have been used by governments to develop industrial policy, we can learn from their experience.[20] Easy traps to fall into are selecting sectors with the greatest *current* employment (see Box 1) or the highest *past* growth. Using past data to plan for future solutions is problematic because the past is not necessarily the best guide for the future. Instead, it makes sense to start with sectors that are experiencing a dynamic transition of some kind. Successful approaches to sector selection have been characterized as searching for *latent competitive advantage*—identifying sectors for which, even if job growth is not strong today, there is a good basis to believe that job growth could be strong in the near future.

FHI 360 used a rigorous methodology to evaluate and prioritize sectors regarding their employment generation potential. Predicting employment growth with any precision is nearly impossible, especially in the short time frame and wide coverage of this analysis. Nevertheless, certain broadly available data, combined with selected qualitative and expert opinions, can be used to assist project managers to provide an objective framework for sector selection.

Box 1. Why not target sectors with the largest number of jobs?
Let's take the example of Kenya, where industries with the highest employment in 2013 were agriculture, manufacturing and retail, in that order. However, the industries with the highest absolute growth in employment from 2009 to 2013 were retail, construction, and information and communications technology. Even health care, for which total employment in 2009 was less than a quarter that of agriculture, added more jobs in the ensuing five-year period. A decision maker in 2009 would have been better off supporting those industries where the *change* in employment, rather than the total employment, was highest.

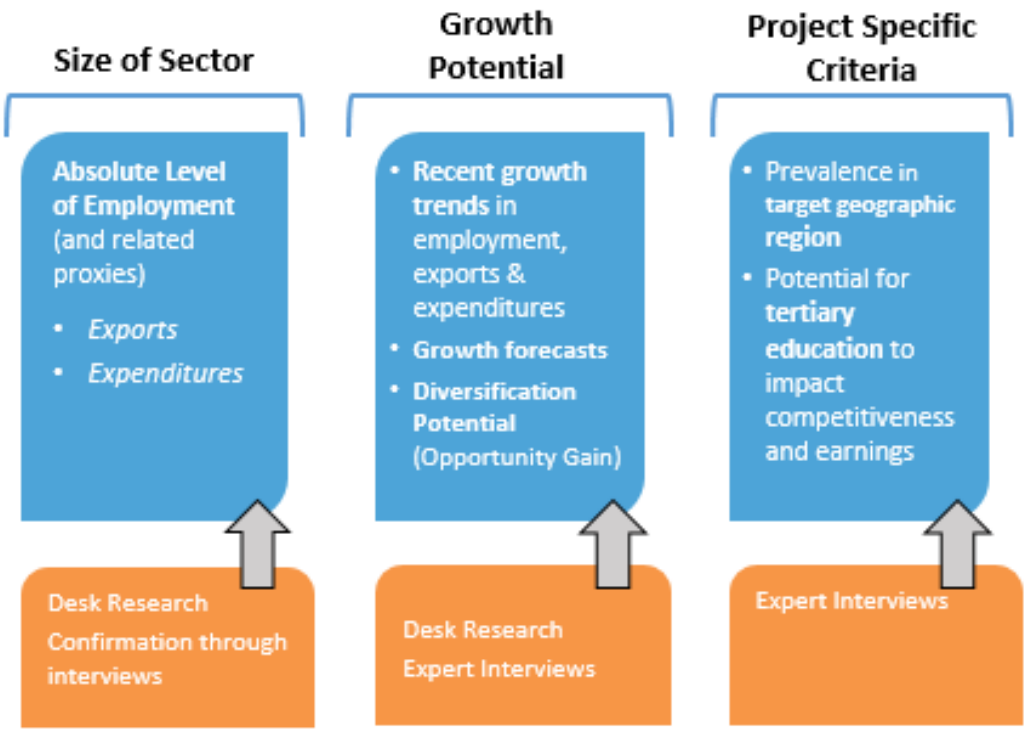
SECTOR SELECTION CRITERIA AND METHODOLOGY

FHI 360 has adapted a methodology developed for the World Bank[21] that was designed to conduct a rapid reconnaissance assessment with limited resources. The approach ranks sectors according to three sets of criteria: size, growth potential and project-specific criteria, as described below and in Figure 7.

[20] See, for example, Lin, J. Y., & Monga, C. (2010). Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change. World Bank Policy Research Working Paper; and Rodrik, D. (2004). Industrial Policy for the Twenty-first Century. Prepared for UNIDO.

[21] World Bank. Sector Competitiveness Analysis Tools: A Reference Guide. Finance and Private Sector Division. Washington, DC: World Bank; June 2011.

FIGURE 7. Sector Selection Categories and Criteria



*Calculated based on data from the Atlas of Economic Complexity.

Source: FHI 360.

1) **Size of sector.** The indicators in this category—employment, expenditures and exports—all aim to characterize the scale of the sector. An intervention in a sector with more employees is likely to have a greater impact, holding all other factors constant. If reliable employment data at the appropriate level of disaggregation were available, no other indicators would be needed in this category. However, in Honduras, as in many countries, only rough estimates of employment are available at the individual sector level. Data on exports (for products) or expenditures (for products as well as services) are available for almost all sectors, and because the reliability of the employment data is weak, the total score in this category is a weighted average of the scores for employment, exports and/or expenditure. The total weight assigned to this set of indicators is 40 points out of 100.

2) **Growth potential.** An accurate prediction of which sectors will grow is by definition impossible. However, some indicators are available that tend to correlate with future growth. For services sectors, these indicators are estimated based on qualitative information. This category, with weights totaling 45 out of 100, includes:
   - **a.** Growth in Export Market Share (2010–2014). This is the best indicator of Honduras' recent performance in export markets, and constitutes the vertical axis in the Trade Share Matrix (see Figure 8).
   - **b.** Growth in Export Market Size (2010–2014). Sectors that are growing globally are more attractive. This indicator is the horizontal axis of the Trade Share Matrix. Since the past is

not the only guide to the future, together these first two indicators account for only 15 points out of the 45 in this category.

c. 5-year Export Growth Potential. This qualitative estimate, based on literature review and knowledge of the sector, attempts to forecast where the future may differ from the past. For example, despite relatively low growth rates in recent years for cacao and chocolate, experts predict a sharp rise in demand for chocolate in coming years; on the other hand, experts anticipate that Honduras' recent strong growth in palm oil exports will taper off.

d. Economic Diversity Index. This measure, derived from the Atlas of Economic Complexity's[22] "opportunity gain" indicator, estimates the potential contribution to industrial diversity and economic complexity from expanding economic activity in any given sector, adjusted by the feasibility of near-term expansion into that sector (known as the "distance" metric). This indicator has been shown to correlate about twice as high with future GDP growth as the World Economic Forum's Global Competitiveness Index. For example, products such as apparel, coffee and palm oil, which dominate Honduras' exports, have very little spillover effect, stimulating other sectors with higher economic sophistication and higher wages. While the link has not been demonstrated, it is likely that sectors with high values for this index are also those with richer and more well-articulated career pathways offering greater opportunities for meaningful advancement. Given the high correlation of this indicator with future sectoral and GDP growth, the weight assigned to this indicator is 20 points out of 100.

3) **Project-specific criteria,** such as the level of activity in that sector in the project's designated geographic range, and the potential for interventions in tertiary education to impact the sector's competitiveness and therefore income and employment generation potential. In the case of Honduras, no systematic sub-national data on economic activity were available, so the only indicator in this category is the Higher Education Potential Impact. Like the 5-Year Export Growth Potential, this indicator is also subjective, based on familiarity with the industry and the role of tertiary-level graduates and technical expertise in the key success factors for competitiveness. It is interesting to contrast the low scores for the Economic Diversity Index in sectors such as tourism, coffee and horticulture against the higher scores for Higher Education Potential Impact, where the impact of highly trained technicians and competent middle managers is known to be quite high.

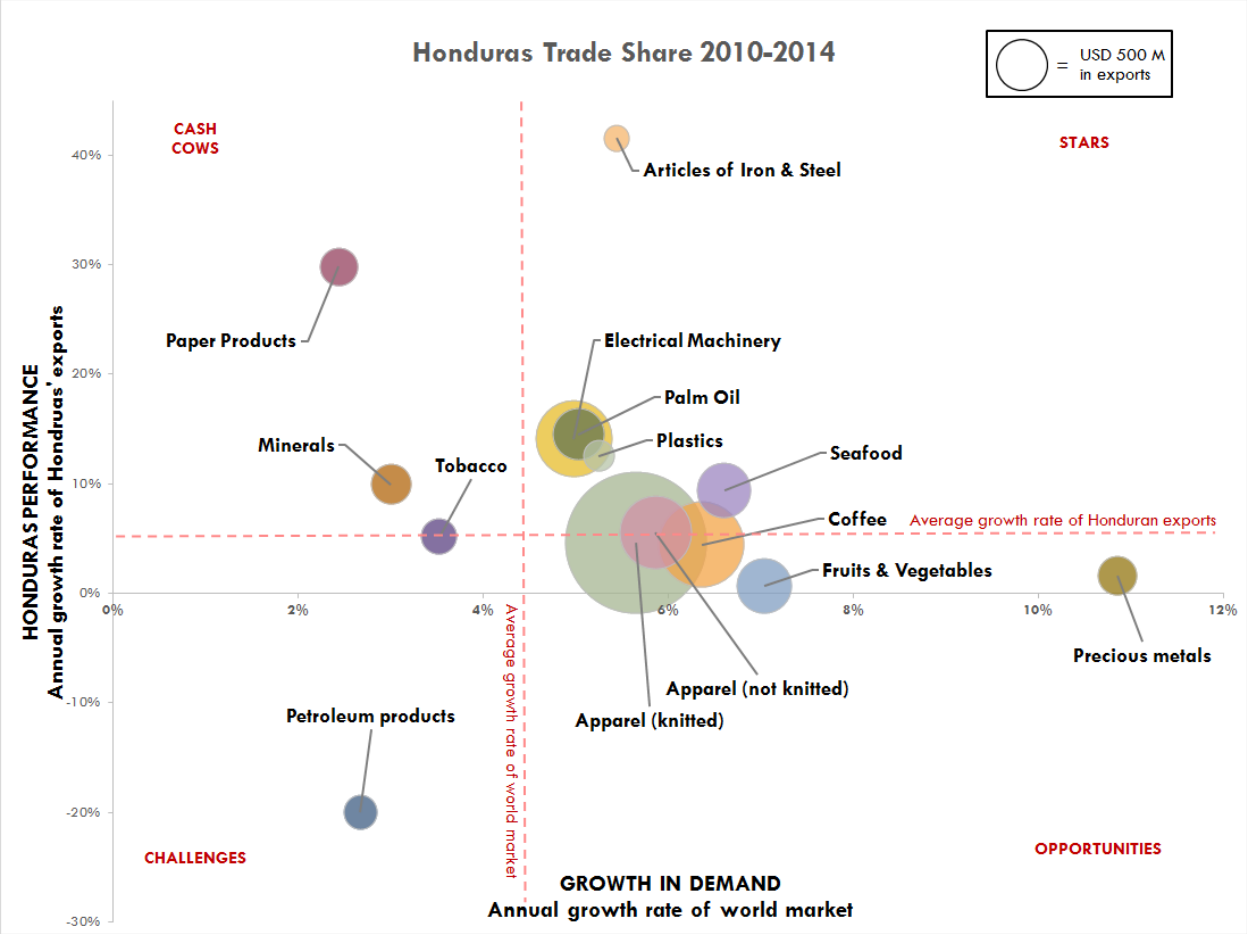
Sector selection is an iterative process. During a rapid labor market assessment, where data are being gathered at the same time the selection process is being carried out, the selection matrix is continually updated with new information that may change the rank order. With limited time and resources, a team must begin by selecting some initial sectors to explore; these may not end up as the top-ranked sectors in the matrix. In Honduras, the team selected sectors that were both representative of the three main industry segments and promising based on initial quantitative and qualitative data.

Figure 8 shows the top 14 commodity exports of Honduras according to Honduras' export growth (vertical axis) and the growth in world demand for those products (horizontal axis). The dotted red lines show the average growth rates for both indicators, and the four quadrants they create indicate the dynamism of export markets for Honduras in those products. For example, the five commodities in the "star" quadrant (seafood, plastics, palm oil, electrical machinery and articles of iron and steel) have had strong growth in world demand, to which Honduras has responded with strong growth in exports. On the other hand,

[22] Hausmann, Ricardo & Hidalgo, Cesar, "Atlas of Economic Complexity: Mapping Paths to Prosperity" Harvard University Center for International Development and MIT Macro Connections Media Lab, 2011.

products in the “opportunities” quadrant (coffee, apparel, precious metals and fruits and vegetables) have been experiencing higher than average demand growth, while Honduras’ growth in exports in these products has been lackluster.

FIGURE 8. Honduras Trade Share Matrix 2010–2014



Source: FHI 360 calculations based on UN Comtrade

STEP 1: CREATING THE LONG LIST

Drawing on existing data sources, FHI 360 compiled a “long list” of roughly 70 sectors, representing the widest possible universe of sectors to be considered. This was drawn from the primary exports, leading domestic industries, notions of the emerging sectors and a recent study by McKinsey, which has served as the basis for the Honduras 20/20 national economic development program.[23] Some sectors were eliminated because they failed to meet certain basic requirements of the project, therefore obviating the need for data-driven analysis (examples include tobacco, a sector that is ineligible for USAID assistance, and crude petroleum).

[23] Gobierno De La República De Honduras. Impulsando El Desarrollo Económico En Honduras. Presentation. Tegucigalpa, Honduras. November 2015.

STEP 2: DEVELOPING THE SECTOR APPRAISAL MATRIX

Based on information from initial interviews and application of the sector selection criteria, the candidate sectors were subsequently narrowed down to a "medium list" (see Table 2) and finally a "short list" through use of a sector appraisal matrix. The matrix allows both quantitative and qualitative information to be assessed together by converting all criteria to scores ranging from 1 to 5. Weights are applied to each criterion, resulting in a total score for each sector.

Since official employment statistics are not available in Honduras at this level of aggregation, rough estimates of employment were used (from McKinsey and interviews with associations), supplemented by export and expenditure data (one or the other of which is available for nearly all sectors).

TABLE 2. Sector Selection: Medium List

Sectors	Industry Group	#
Seafood, coffee, palm oil, horticulture, maize, poultry, dairy, cacao & chocolate	Agro-industries	8
Textiles, apparel, leather, paper & packaging, wood & forest products, auto components, plastics, electronics	Light manufacturing	8
Iron & steel, articles thereof, aluminum, chemicals, machinery	Heavy manufacturing	5
Construction services, construction materials	Construction	2
Hotels, restaurants, attractions, tour operators	Tourism	4
Transport & logistics, cold storage, security	Logistics	3
Telecom, software engineering, Business Process Outsourcing, call centers	ICT	4
Banking, insurance	Finance	2
Retail, wholesale	Commerce	2
Medical services, pharmaceuticals, medical devices	Healthcare	3
Total Number of Sectors		**40**

Source: UN Comtrade, BCH, MIT Atlas of Economic Complexity, McKinsey, and FHI 360 calculations

In many cases, such as information and communications technology (ICT), even though the sectors within the industry are conceptually quite distinct, data limitations required that several sectors be treated as one.

The most reliable data were for exports and domestic expenditures. While very few sectors have data on employment at this level of aggregation, nearly all sectors have reliable data on at least exports (of products) or expenditures (on products and services). For this reason, greater weight is assigned to export and expenditure data in the scoring matrix, even though the objective of the first block of indicators is to determine the size of the sector in terms of employment (see Table 3).

TABLE 3. Sector Appraisal Matrix: Short List

CANDIDATE VALUE CHAINS	CURRENT SIZE	Employment	Expenditures	Exports	GROWTH POTENTIAL	2010-14 Growth in Rel. Market Share	2010-14 Growth in Rel. Market Size	5-YR Export Growth Potential	Economic Diversity Index	OTHER CRITERIA	Higher Education Potential Impact	TOTAL SCORE	RANK
Weights ==>	**40**	15	10	15	**45**	10	5	10	20	**15**	15	**100**	
Bus. Services/ICT (Call Centers, BPO, Software)*	**3.5**	2	5	4	**4.3**	4	5	5	4	**5.0**	5	**82.0**	**1**
Health Care (Services, Pharma, Devices)	**3.0**	5	3	1	**4.2**	3	4	4	5	**4.6**	5	**75.8**	**2**
Light Manufacturing (Cables, Auto Parts…)*	**3.0**	2	3	4	**4.2**	4	2	4	5	**4.0**	4	**74.0**	**3**
Chemicals, Soaps & Detergents	**2.5**	1	4	3	**3.9**	4	3	4	4	**4.1**	4	**67.3**	**4**
Textiles & Apparel*	**4.6**	4	5	5	**2.2**	1	4	3	2	**2.8**	3	**65.4**	**5**
Articles of Iron & Steel	**2.5**	1	4	3	**3.7**	5	1	3	4	**4.0**	4	**65.0**	**6**
Coffee	**4.3**	5	2	5	**2.0**	1	4	4	1	**4.1**	4	**64.2**	**7**
Fruits & Vegetables	**4.0**	4	4	4	**2.1**	1	5	4	1	**4.0**	4	**62.9**	**8**
Tourism*	**4.1**	4	3	5	**1.9**	1	3	2	2	**4.0**	4	**62.0**	**9**
Milk Products	**3.1**	5	2	2	**2.7**	2	2	3	3	**4.0**	4	**61.0**	**10**
Machinery	**2.0**	1	5	1	**3.3**	2	2	2	5	**5.0**	5	**60.9**	**11**
Paper & Packaging	**2.8**	3	2	3	**3.2**	5	1	3	3	**3.0**	3	**60.0**	**12**
Plastics	**1.4**	1	1	2	**3.2**	4	3	3	3	**5.0**	5	**55.0**	**13**
Furniture & Other Forest Products	**2.4**	3	2	2	**2.9**	2	2	2	4	**3.0**	3	**54.1**	**14**
Logistics (Transport & Storage)	**2.6**	3	3	2	**2.3**	3	3	2	2	**4.0**	4	**54.0**	**15**
Construction*	**2.9**	4	4	1	**2.8**	3	5	3	2	**2.0**	2	**54.0**	**15**
Seafood	**2.5**	2	1	4	**2.2**	3	4	3	1	**3.0**	3	**49.0**	**17**
Cacao & All Products Related to Chocolate	**1.0**	1	1	1	**3.1**	2	2	5	3	**4.0**	4	**48.0**	**18**
Palm Oil	**2.5**	3	1	3	**2.2**	5	2	2	1	**1.8**	2	**45.4**	**19**

*Selected by McKinsey and included in Plan Honduras 20/20
Source: UN Comtrade, BCH, MIT Atlas of Economic Complexity, McKinsey, and FHI 360 calculations

While it is not recommended that projects slavishly follow the priority rankings resulting from the sector appraisal matrix, it does provide a consistent and objective framework for discussion, allowing managers to isolate any subjective criteria more clearly when a departure from the formal ranking is adopted. For example, in our case, the select four sectors (health, textiles, coffee and tourism) were ranked #2, #5, #7 and #9, respectively. That the four selected sectors are among the top 10 is well within the desired ranking range.

Here we note that sectors that may have initially appeared promising—such as palm oil, which appeared as a "star" in the country's trade-share matrix due to recent growth in exports—end up in a lower-ranked

spot. In the case of palm oil, this is due to a combination of factors: Honduras' exports are expected to taper off due to lower world demand as the high-cholesterol oil falls out of favor; the product does not add significantly to the country's economic diversity; and interventions in higher education would not be expected to have much impact on the sector.

On the other hand, we would also note that in the final ranking, business services and ICT, although current employment is relatively low, scored well in all other criteria, based on information gathered from primary and secondary sources. Although we did not select this sector for examination in this report, this should not preclude further exploration in the future of what appears to be a promising sector.

PRODUCT DIVERSIFICATION AND ECONOMIC COMPLEXITY[24]

Our ability to extract meaningful information from highly aggregated and unreliable data—as we must often do in the sector selection process—is often quite limited, but trade data tend to be of a more uniform quality (since data can be verified from two sources, the exporters and the importers), and some researchers at Harvard University[25] have developed pioneering new methods to use these data. Their "product space analysis" uses, across all countries in the world, the correlation between increases in exports for specific products and that country's subsequent growth. Their analysis concludes that income rises faster in countries whose product mix has a higher "economic complexity," meaning that production is dependent on a denser and more tightly integrated network of overlapping capabilities, ranging from natural resources to infrastructure to human capital such as skills and intellectual property. This economic complexity is correlated with income growth because on the whole, the complex products tend to be more difficult to produce, and their scarcity raises their value.

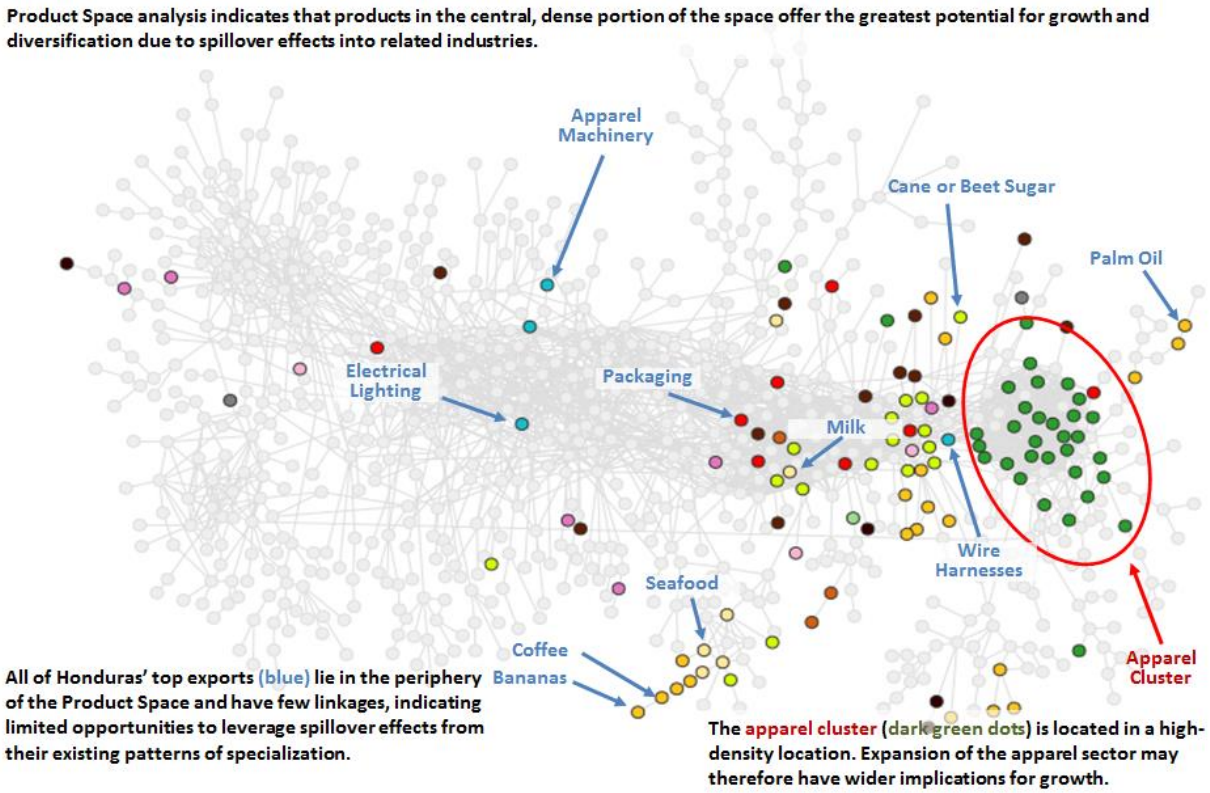
The product space analysis allows us to visually map this complexity at the country level. It highlights the products a country is most successful at exporting, and then maps the product's relationships to others in order to examine potential growth spillover effects. The theory that stands behind the product space analysis is that if an economy is competitive at producing product X, then it is more likely to be successful in upgrading the production of products related to product X. For example, countries competitive in the export of fresh fish also tend to be competitive in the export of fresh flowers, because they both depend on the existence of a world-class cold chain.

[24] See more details for Economic Diversity Index in Annex II.

[25] Hausmann, R. & Hidalgo C. Atlas of Economic Complexity. 2011. http://atlas.cid.harvard.edu/.

FIGURE 9. Honduras Product Space Analysis—Using Big Data to Predict Growth and Identify Skills Needs

Investments in skills should gravitate towards the center of the product space



Source: MIT Observatory of Economic Complexity

Figure 9 is the product space analysis of Honduras, with a sector selection overlay in blue and red. Each colored circle is a product for which Honduras has a revealed comparative advantage (RCA) of 1 or greater.[26] The colored circles labeled in blue are Honduras' top exports by value such as coffee, cane or beet sugar, apparel machinery, electric machinery, and fish, shrimp and lobster. Unfortunately, most of Honduras' existing high-volume export products are scattered around the periphery of the product space, where there are very few of the growth-inducing spillover effects that foster economic complexity. In fact, most of the biggest export products only have one linkage in the product space network (coffee, bananas, palm oil), while other products such as baked goods, packaging materials and milk products (all of which Honduras exports but in smaller quantities) are located in the center of the product space, with as many as 15, 20 and even 25 growth-inducing linkages. The textiles and apparel cluster is the exception to this rule: While the various products are clumped together in a high-density cluster, indicating linkages and spillover effects among its various products, these products have very few linkages to products in other sectors, which explains why its location in the product space is neither central nor peripheral, but some combination of the two. The product space results for Honduras provide support for selection of certain sectors that have been shown to lead to higher economic complexity (and therefore incomes) in other countries.

[26] The Revealed Comparative Advantage (RCA) is an index used to calculate the relative success a country has had in the export of a certain good. An RCA >1 indicates that the country's share of the world export market in that product is higher than its average world market share (across all products). We use products with an RCA of 1 or greater to ensure we are focusing on those sectors in which Honduras is competitive. The figure does not show all Honduran products.

One of the more fascinating features of the product space analysis is that it indicates spillover effects between sectors that have very few buyer-supplier linkages (the type of linkages that are used to construct input-output tables, which lie at the core of the national accounts measures and much of our traditional thinking about economic development). Unfettered by the limitations of input-output relationships, the trade growth data have revealed subtler and hidden relationships between sectors, whereby skills and tacit knowledge built up in one sector can be applied to other seemingly unrelated sectors. The product space analysis is telling us that a country's investments in skills should gravitate toward sectors in the center, because they tend to grow faster and exhibit greater economic complexity. If we only paid attention to Honduras' "top exports" we would miss this key dynamic.

It is important that Honduras go beyond a "labor-intensive labor market" to one that is economically diverse and supported by the accumulation of skills, innovation and development of necessary production capacities. This transition can be aided by selecting products in the center of the product space, which offer the greatest potential for economic growth and diversification due to spillover effects. Economic diversification in this sense will increase competitiveness and therefore drive exported products in the international market. The assessment team has adapted Hausmann's formula, below, to devise three different strategies for sector support.

$$Score_i = a_{Distance}\left(\frac{Distance_i - \min(Distance)}{\max(Distance) - \min(Distance)}\right) + a_{PCI}\left(\frac{PCI_i - \min(PCI)}{\max(PCI) - \min(PCI)}\right) +$$

$$a_{wtshare}\left(\frac{wtshare_i - \min(wtshare)}{\max(wtshare) - \min(wtshare)}\right) + a_{StratValue}\left(\frac{StratValue_i - \min(StratValue)}{\max(StratValue) - \min(StratValue)}\right)$$

The product space, because it is based on capabilities, indicates where coordinated investments in skills and business could be expected to yield higher returns—towards the center of the product space. But where exactly, and for how many of the dots, should we target investments in skills? Do we just start randomly putting money into a cluster of sectors that are near or associated with a growth sector?

The complexity index, mentioned previously, helps us identify the most strategic (and longer term) moves that can be made. But before we begin evaluating which move we should make at this time, we need to understand where we are on the map, taking into account our industrial structure and stage of evolution.

The product space is a quintessential application of "big data" using detailed export patterns. The products are grouped into "communities," but there are surprisingly strong linkages among products in different communities. For example, there is a strong linkage between "woven fabrics of cotton" and "wire harnesses" because the capabilities they share (*maquiladora*-style production methods) are more important than the specific technologies they employ. Thus, an economy that started with apparel can move into wire harnesses (as Honduras has done), which positions it to expand into higher complexity and higher value-added products such as refrigerators, furniture and construction materials. The relative difficulty of making leaps into these linked products, given our current industrial structure, is known as the "distance" and must be calculated uniquely for each country in the world. And the "opportunity gain" of moving into a new product[27] is the degree to which stronger exports in that new product will increase the overall economic complexity index for Honduras.

[27] Technically, by "moving into a new product" we mean expanding exports to the point that the revealed comparative advantage (RCA) is greater than 1.

Once we have calculated the distance and opportunity gain, we are ready to analyze our next moves, and that is where we sort the product communities into columns—yielding a table with three different policy options, as noted above. The first policy option, "Jobs, jobs, jobs"—the list of sectors a policy maker should prioritize if his or her position is "I need to place as many people, as fast as possible, regardless of their skills, in jobs," even if prioritizing these sectors may actually hurt a country's competitiveness because they will be competing globally based on low wages. The second option is made up of "Strategic Bets"—the list of sectors that over time would create high-skilled jobs and position the country at a much higher level in the value chain(s) related to those products. The third policy option, labelled "Parsimonious Transformation," provides an intermediate solution—a list of sectors that a government strapped for funds can consider, where some of the sectors would offer immediate employment options for a share of the population, while the other sectors would create the foundation for longer-term growth and competitiveness. We have applied the product space formula to the data from Honduras, and a table showing the top sectors for each of these strategic options is presented in Table 4 and Annex II.

TABLE 4. Economic Diversity Index for Selected Sectors in Honduras

Sector	Economic Diversity Index
Coffee	24
Business Services/ICT (Call Centers, BPO, Software)	65
Light Manufacturing (Cables, Auto Parts…)	86
Textiles & Apparel	40
Health Care (services, pharma, devices)	90
Fruits & Vegetables	24
Tourism	30
Machinery	72
Plastics	60
Cacao & All Products Related to Chocolate	42
Articles of Iron & Steel	70
Milk Products	48
Seafood	24
Construction	42
Palm Oil	24
Chemicals	63
Paper & Packaging	58
Furniture & Other Forest Products	66
Logistics (Transport & Storage)	42

Source: FHI 360

If our criteria in this labor market assessment were only economic, there would be no need to go further. This calculation provides an excellent option for sector selection with both jobs and competitiveness in mind. For the purposes of this education project, however, we felt it was important to introduce a number of qualitative criteria, such as the feasibility of addressing the top sectors' challenges with tertiary-level technical degrees and the presence of the sectors in our target regions. Thus, we have used the product

space analysis as only one of the criteria for selecting sectors. Going forward, it would be useful to analyze the difference between the product space matrix as produced, and the sectors we selected. For example, one could use the product space analysis to offer insights into the distance and movement between workers in the informal sector, into the "Jobs, jobs, jobs" sectors (as was done in a similar analysis for Morocco). This would require further research, however.

WHAT CAN WE LEARN FROM MAPPING VALUE CHAINS?

After sector selection, a further analytical tool used to assess the demand for skills is value chain mapping. Value chain mapping helps implementers and policymakers understand industry structure and dynamics by identifying the (approximate) number and type of firms and diagramming their roles and relationships.[28] A value chain map (see Figure 10 as an example) shows how a particular product flows through different market channels at the country level, and helps to identify constraints and opportunities for improving the performance of each channel.[29] Adapted from agricultural economics to broader uses in development, value chain mapping is often the first step for economic growth programs wishing to increase the incomes of a particular group of firms or individuals (for example, smallholder farmers or contract workers). A workforce overlay to a value chain map helps identify employment and entrepreneurship opportunities, where training and skills development are needed and how they can be delivered, such as through general education, technical education, vocational training or on the job learning. It can also help identify career pathways for youth within a sector.

In the value chain figure, the colored arrows are used to signify employment and entrepreneurship opportunities. These entry points have particular skills needs that are identified according to the arrow's patterns and color, indicating the education or training requirements for the opportunity. A gender lens is included: Arrows outlined in dotted lines indicate professions that industry experts consider to be particularly suitable for women as well as men (i.e., based on observed practice rather than traditional stereotypes). Links in the chain that present entrepreneurial or outsourcing opportunities are marked by purple boxes.

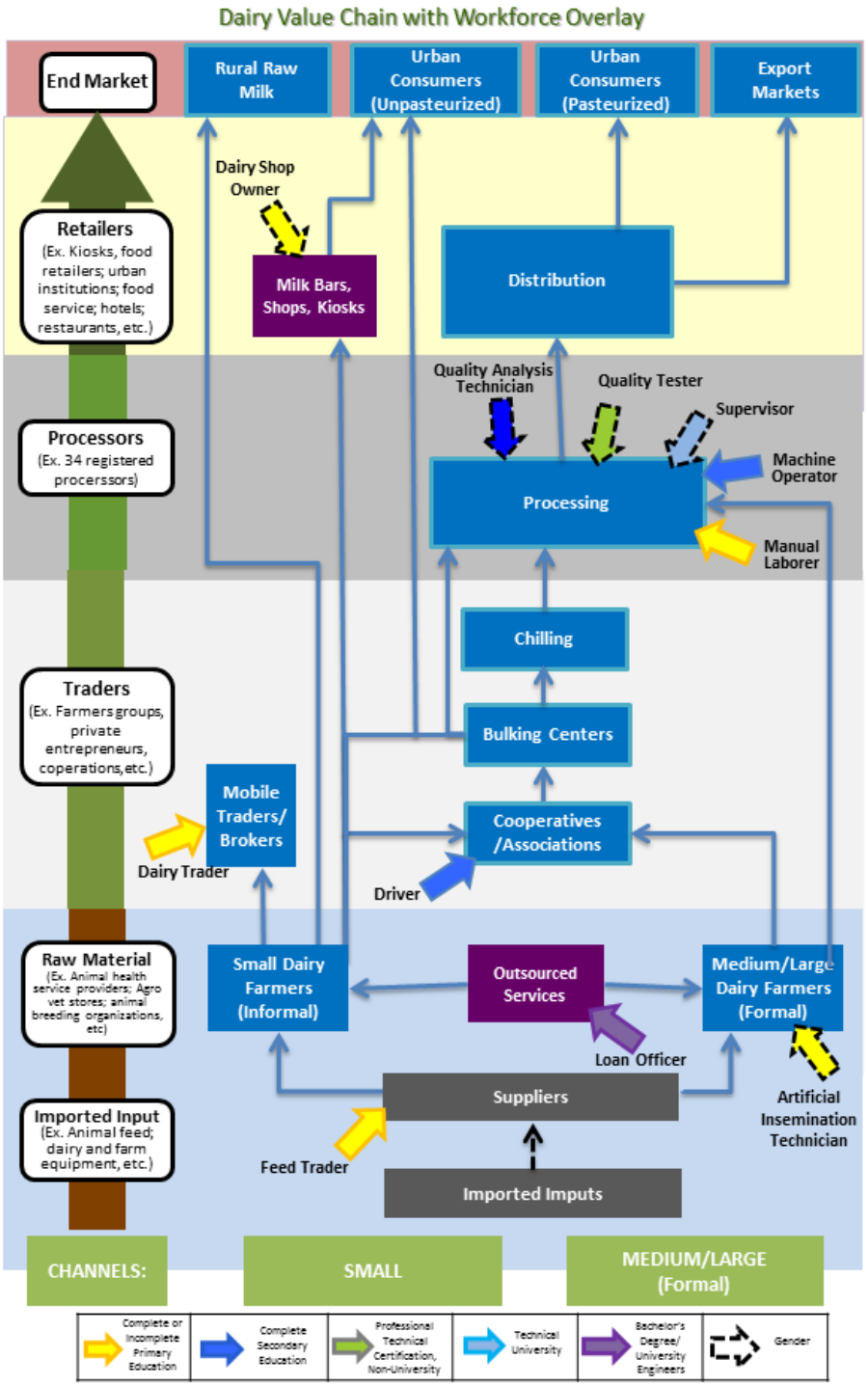
Value chain maps also help us understand industry structure and firm-to-firm relationships. For example, some channels may be vertically integrated (all functions performed by one firm), whereas others may be partially integrated and others completely fragmented (many microenterprises selling products directly in an open market). Industry structure is directly related to value chain governance—that is, whether power is concentrated in the hands of one firm or many firms, and whether chains are buyer- or supplier-driven. Consequently, understanding industry structure is critical when identifying potential employer partners to work with on skill building. For example, a lead firm buying products from hundreds of supplier firms will effectively set quality standards in the market, and these quality standards will have implicit skills requirements throughout the value chain. A lead firm is likely to be interested in bringing the quality (and therefore the skills) of suppliers up to standard, and may be willing to co-invest in skill-building initiatives.

[28] Steen, C., Magnani, R., & Goldmark, L. Competitiveness Strategies for Agriculture-Related MSES: From Seeds to Supermarket Shelves. 2005, 10.
[29] Ibid. 10.

Such a partnership provides what value chain practitioners call “leverage”—a point of entry that allows your intervention to impact large numbers of firms and/or workers.

On the other hand, where lead buyers are located overseas (as with textiles), this relationship changes; the lead buyer may not be interested in investing in quality and skills improvements in its suppliers as it may be more cost-effective to source from countries where quality is already high. In these situations, as is the case in the Honduras apparel export chain, industry may work with the government and educational system to develop their own training programs to improve the quality of suppliers, but the investments and quality improvements may not trickle down to the small and medium enterprise (SME) level.

FIGURE 10. Stylized Value Chain Map



Source: FHI 360

OVERVIEW OF FINDINGS

In order to understand the structure of value chains within our selected sectors, and also employers' specific existing and future skills needs and the obstacles they face to meeting those needs, we conducted a series of interviews with stakeholders, largely employers and business associations.

Using this process, we mapped value chains for coffee; eco-tourism, business tourism and beach tourism; textiles; and pharmaceuticals, health services and medical devices. Additionally, we created overlays on these value chains to highlight current and future in-demand positions at each point on the chain indicating required preparation. The chains also illustrate positions identified by sector actors that tend to be associated with women due to soft skills requirements (such as attention to detail). Actors note that this is not mutually exclusive, but may offer a comparative advantage in the workplace for efficiency and productivity.

We found that employers and business associations echoed a number of the same needs and priorities across sectors. In general, employers said they had no shortage of job applicants, but indicated that Honduras' secondary education system has left many jobseekers unprepared for success in the workplace, particularly in management and administrative roles. Workers with higher levels of education were often seen as having unrealistic expectations regarding salary, duties and level of effort, leading some employers to prefer hiring jobseekers with just a secondary degrees (*bachillerato*) who demonstrated attitudes and soft skills such as a desire to learn, clear communication skills and creativity. This preference for candidates with secondary degrees was seen most often in the area of tourism, where businesses have been gravely affected by decreased business due to the perceived security threat and therefore look beyond university graduates—who demand a higher salary—to fill vacancies.

The textile (*maquila*) industry also noted dissatisfaction with current education and training arrangements not managed directly within the sector, excluding highly technical positions such as industrial chemical technicians, though deficiencies were still noted there. Due to the nature of the *maquila* industry model, companies have a highly standardized production structure, and as a result, training is often managed internally to respond to specific production needs.

Across the sectors studied, many employers report conducting significant in-house training in order to get their new hires up to speed. A recent Inter-American Development Bank (IDB) study found that while most training for managers and skilled workers in the country relates to specific skills (30 percent and 46 percent, respectively), for unskilled workers most training (45 percent) concentrated on behavioral skills, which is high compared to other countries in the region.[30] Particularly in the tourism sector, employers noted a need for modern accounting and finance skills, especially for knowledge of accounting software, as public schools teach accounting by hand. In all sectors, most particularly in tourism and health, English was seen as a need, though in coffee and textiles it was more likely to be seen as a "bonus" for customer-facing positions.

Furthermore, employers in all sectors saw the need for skills relating to use of technology: computers, medical, laboratory and imaging equipment (in the health sector) and other specific software, depending

[30] Baptista, D., Lima, F., & Roberto, J. G. Prácticas de capacitación y reclutamiento de personal de los establecimientos en Honduras. Inter-American Development Bank, 2014. https://publications.iadb.org/bitstream/handle/11319/6766/Honduras.pdf?sequence=1

on the industry. Some employers see young people who are familiar with social media platforms as having an advantage in terms of technological skills.

COFFEE

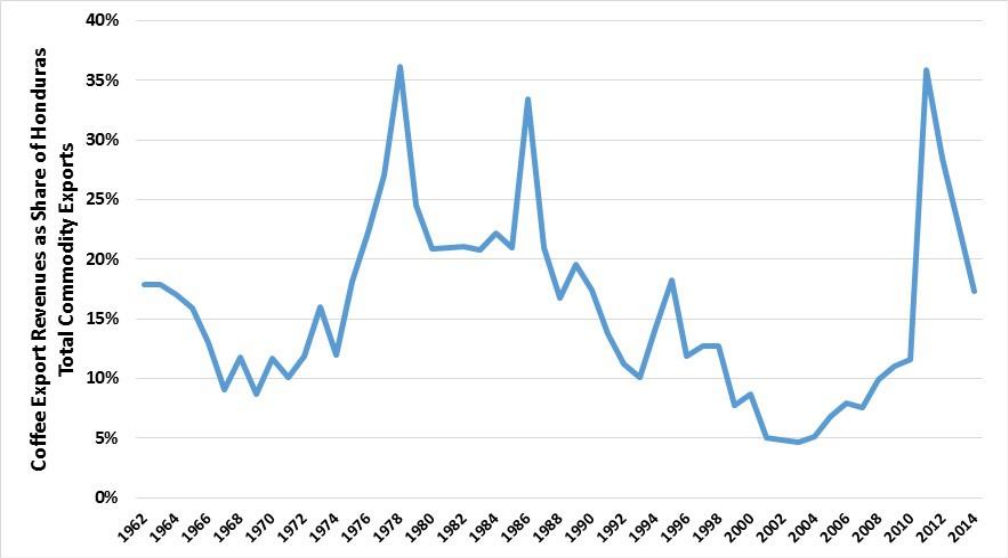
In the coffee sector, among other ongoing changes, large international retailers are increasingly bypassing intermediaries and directly certifying producers, an adjustment which will require both soft skills (e.g., negotiation and communications) and technical skills (e.g., quality control) at the producer level. As market demand shifts to organic and shade-grown products, quality production is key in order for producers to sell at competitive prices and also move into new markets domestically and abroad. Producers who do not shift their mindset to consider the needs and benefits of cleaner production methods will find it increasingly difficult to find markets for lower quality beans. The needs of this newer market in Honduras require an upgrade in skills on both the technical and non-technical level, for both temporary workers during harvest season and those responsible for the export of goods.

The coffee sector in Honduras is of vital strategic economic importance. Honduras has been producing and exporting coffee since the early 19th century and is globally competitive in the sector with a current RCA of 63. Despite this high degree of specialization, coffee's share of Honduras' export revenues fluctuated sharply, from a high of 36 percent of all commodity export revenues to a low of 5 percent (see Figure 11). From the mid-1980s to the mid-2000s, the overall trend was downward, but around 2005 Honduras managed to simultaneously improve quality and quantity while world demand was experiencing an upsurge. While Honduras cannot control international prices, policies and programs inside the country can sharply improve average revenues over time.

An estimated 112,000 families are engaged in the cultivation, processing and transformation of the sector. Coffee's value added to the agricultural sector was 25 percent in 2012, and some analysts estimate that the sector generates as many as 1 million direct and indirect jobs, representing 22 percent of jobs in rural areas.[31] Coffee is also linked to tourism and specifically eco-tourism, as some producers (such as several in Santa Rosa de Copán) offer tours and provide visitors (international, Central American and Honduran) the chance to sample traditional local cuisine. Several current and/or recent IDB, World Bank and USAID competitiveness projects focus on this connection. Renewed investment and interest in the coffee sector in Honduras has earned the country's production international recognition from the Specialty Coffee Association of America, where specialty coffee fairs promote the unique values and flavors of the Honduran bean.

[31] Consejo Hondureño de la Empresa Privada (COHEP). Situación Actual y Perspectivas: Perfil Sectorial del Café de Honduras. Mayo 2013. http://www.cohep.com/.

FIGURE 11. Coffee revenues have declined as a share of Honduras' commodity exports



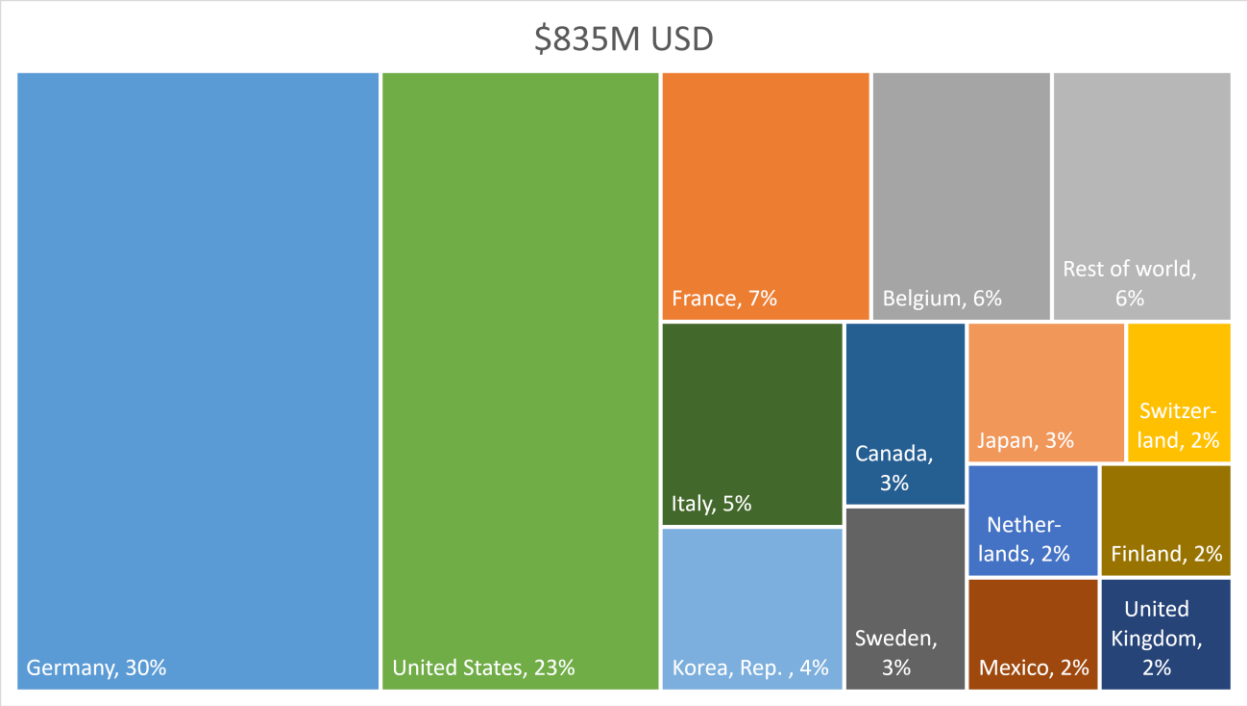
Source: UN Comtrade

During the 2012–13 and 2013–14 harvests, *la roya* (coffee leaf rust) significantly affected coffee production, reducing it by about 25 percent. This impacted not only the harvest and external revenues of the country, but also the poor families dedicated exclusively to this activity. After a successful program to combat *la roya*, through technical training and financial support to producers, Honduras recovered and increased its production by 18.2 percent during the 2014–15 production year, and remains the largest coffee producer in Central America.[32]

As seen in Figure 12, in 2014 Honduras' main coffee markets were Germany, USA, France, Belgium, Italy, and Korea.

[32] Instituto del Café de Costa Rica. Informe Sobre la Actividad Cafetalera de Costa Rica. 2016.http://www.icafe.cr/wp-content/uploads/informacion_mercado/informes_actividad/actual/InformeActividadCafetalera.pdf.pdf

FIGURE 12. Countries Honduras to which exported coffee in 2014



Source: Atlas of Economic Complexity

According to a study of the Honduran Council of Private Enterprise,[33] in 2011–12 five companies accounted for 63 percent of total coffee exports, or 7.14 million quintals. Compañia Hondureña del Café exported the most volume with 1.65 million quintals, representing 23 percent of total exports, followed by Beneficio de Café Montecristo (1.1 million quintals, 15 percent of exports); Sogimex (700 thousand quintals, 10 percent of exports); Comercial Internacional de Granos de Honduras (535 thousand quintals, 8 percent); and Olan and Honduras (516 thousand quintals, 7 percent). Forty-five percent of the country's coffee is produced in the West, 25 percent in the East, 20 percent in the South-Central region, and 10 percent in the North.[34] As detailed in Box 2, Honduras has six main geographical regions where coffee is grown and produced, providing direct employment to around 300,000 people nationwide.[35]

[33] COHEP, 2013.

[34] Instituto Hondureño de Café (IHCAFE). Estadísticas y generalidades del café de Honduras. 2014.

[35] COHEP, 2013.

Box 2. Coffee Growing Regions of Honduras

Occidente. Coffee production is one of the most important socioeconomic activities in the region, which is considered to produce the best coffee in the country. Copán coffees have consistently received very high ratings by international juries in competitions and events like the Cup of Excellence. It includes the geographical locations of Copán, Ocotepeque and Santa Barbara.

Opalaca. Opalaca Region is located in the departments of Santa Barbara, Lempira and Intibucá. This area is home to the largest indigenous population of Honduras. The people of Opalaca maintain their traditions, which have been passed down through generations, including the planting of coffee. The region is located in the Opalaca Mountain range which is in the Montaña Verde Wildlife Refuge.

Montecillos. Honduras harvested some of its first high-quality coffees from this region in the early 19th century. The Márcala-Montecillos designation is known as one of the best protected designations of coffee from Central America. Thanks to this excellent coffee, there is a particularly high demand for Honduran coffee in international markets. Márcala-Montecillos produces more coffee than any other region in the country. The Montecillos region is located in the departments of La Paz, Comayagua, south of Santa Barbara and Intibucá.

Comayagua. Comayagua Region, located in the central part of the country, features tropical rainforest, pine trees and cloud forests. The Comayagua region has fertile soil and steep hills, and coffee here is shade grown. The region comprises Comayagua and Francisco Morazán.

El Paraiso. This region is mostly formed by the department of El Paraíso and parts of the departments of Choluteca and Francisco Morazán. It features Dipilto Mountain, Yuscarán Mountain and other areas that provide the optimum conditions for producing high-quality coffee.

Agalta. Agalta Mountain is one of the largest protected areas in Honduras. A very important activity in the region is eco-tourism; here tourists can walk through the forest, view the wide variety of wildlife, and taste coffee. The biodiversity of flora in this region gives the coffee produced here its unique flavors. The geographic location comprises Olancho, Yoro, Atlántida and Colon.

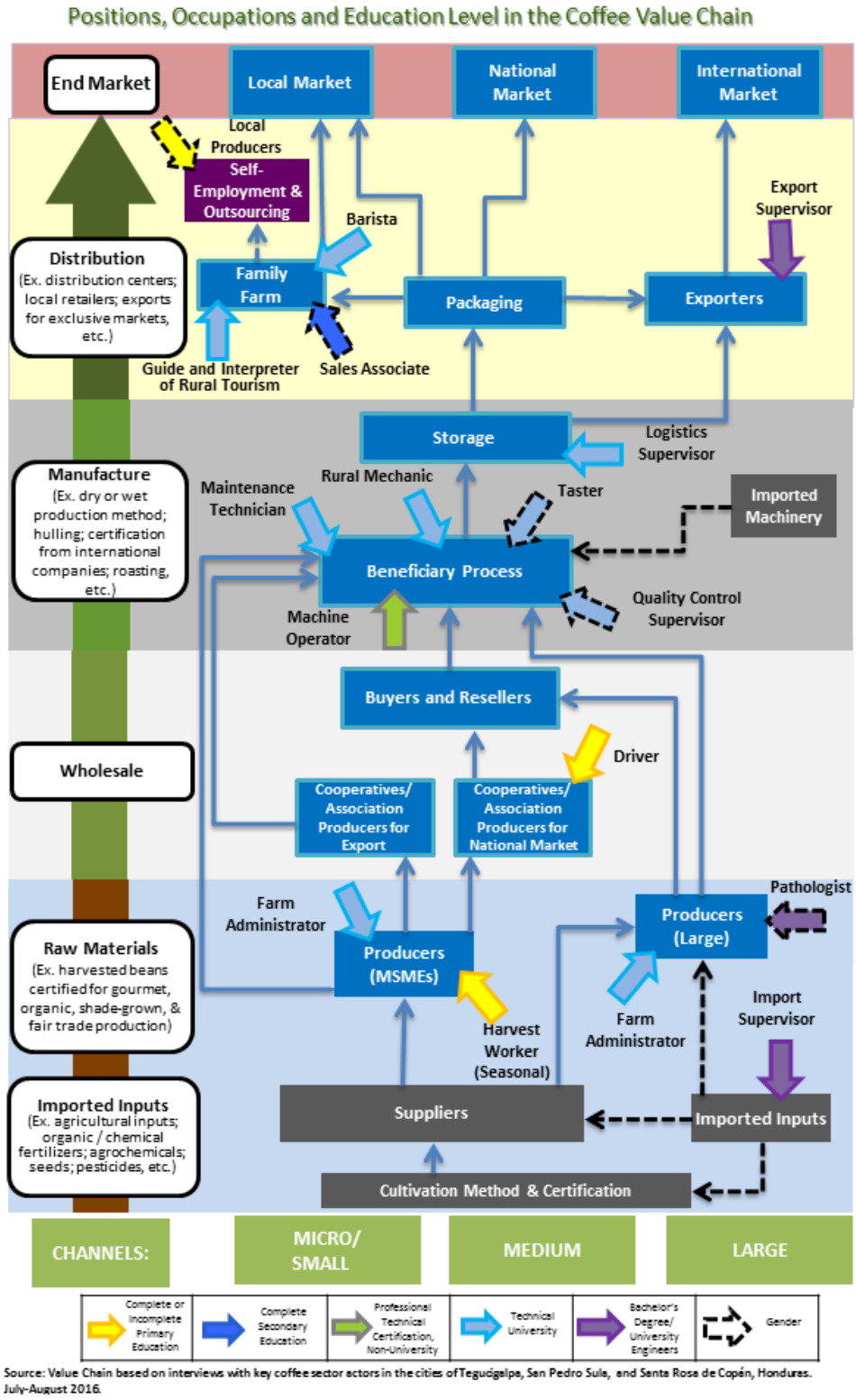
COFFEE: KEY POSITIONS AND SKILLS NEEDS

Figure 13 shows the coffee value chain in Honduras, which beneath its surface tells an important story relating to skills and technology more recently demanded by the sector. In recent years, an increased interest in coffee culture in international markets has both changed consumer awareness of how coffee is produced and driven demand for quality products internationally certified by organic, gourmet, shade grown and fair trade market standards. Demand from Honduras' main export markets, including Germany, the United States and Belgium, along with contributions of nongovernment organizations (NGOs) to support sustainable development, have diversified coffee cultivation and production, from small family farms with products in the local market to large producers who exclusively export.[36] As a result, new imported machinery, certified organic fertilizers and additional agricultural inputs contribute to the desired shift in the coffee sector to move from quantity to quality of coffee produced and exported.

This change has an important relationship with the cacao sector. In lower altitude areas that once produced lower quality coffee, environmental and soil qualities are well suited to cacao, and the rising international demand for chocolate has made cacao cultivation more attractive. Thus, the economic loss felt by smaller producers as the transformation to higher quality coffee gains momentum may be offset by shifting to cacao.

[36] IHCAFE. Información Estadística: Cosecha 2015-2016. 2016. http://www.ihcafe.hn/images/Boletin% 2010-08-16.pdf IHCAFE.

FIGURE 13. Honduras Coffee Value Chain with Workforce Overlay



Source: Value Chain based on interviews with key coffee sector actors in the cities of Tegucigalpa, San Pedro Sula, and Santa Rosa de Copán, Honduras. July-August 2016.

As noted above, the coffee value chain describes the structural relationships between actors and firms and important positions that add value throughout the chain. The key technical positions in coffee production are quality control field technicians, tasters, farm equipment maintenance technicians and farm technical managers. Entry points into the value chain include both employment opportunities within firms as well as entrepreneurship opportunities such as local producers (marked with a purple box) and tourist guides.

As the coffee value chain in Honduras has been upgrading to meet the demands of existing and emerging markets (including the national market) in terms of quality control and certifications, among other aspects, this also implies new and more advanced skills for employees. For example, the value chain shows that while some large producers sell their product to buyers and resellers (intermediaries), others move their product directly to the *beneficiado* (production) process, where harvested beans are processed (dry or wet method), hulled and then moved to storage, packaged and finally exported. Producers in the latter group, whose product does not pass through the hands of powerful intermediaries, are often certified by large international coffee giants, such as Starbucks or Dunkin' Donuts, who set quality standards for coffee farms throughout production. These quality standards will have implicit skills requirements throughout the value chain that will create necessary investments in human capital, such as the need for negotiation and communication skills. While this need to educate and upgrade skills is understood throughout the value chain, this is of particular importance in the production process, where many small producers cultivate based on generations-old farming methods due to a lack of available training and familial connection to the land itself. For example, large producers as described here would also be more likely than smaller operations to have trained agronomists (acting as farm administrators) and/or pathologists on staff, regulating inputs and controlling for diseases such as *la roya*. Honduras' movement toward quality production according to organic, shade grown and other practices, however, requires that trained agronomists are also working with smaller producers in order for farmers to ensure their goods are produced and sold to these emerging markets.

A second way to understand the distinction in production across channels is through the lens of micro, small and medium enterprises (producer MSMEs). Micro and small producers, representing approximately 112,000 families, participate in the coffee sector in a variety of ways.[37] Once coffee is harvested, micro, small, and medium producers sell it to cooperatives and association producers for either the national market or export.[38] These actors are responsible for transporting coffee produced in rural areas where access is otherwise very difficult. The yellow arrow labeled as "driver" verifies the importance of transportation during this stage. Without these cooperatives, many micro and small producers who are responsible for the cultivation of the coffee bean itself would not have access to greater markets. Buyers and resellers (intermediaries) then purchase coffee from these cooperatives to resell to companies responsible for production for national and international markets (beneficiary process). Quality control supervisors, tasters, rural mechanics and maintenance technicians were among those technical positions noted by sector actors to be of particular importance to the beneficiary process based on the current structure of internal labor markets within the sector. Gender plays a role in terms of skills often desired and found in women, as many employed in quality control positions and as tasters have the precise attention to detail necessary to perform at a high level in these positions. Sector actors noted that this is not exclusive, but they do often see distinctions with women in these roles.

[37] Instituto Hondureño de Café (IHCAFE). Información Estadística: Cosecha 2015-2016. http://www.ihcafe.hn/images/Boletin%2010-08-16.pdf.
[38] Ibid.

Contributing to the growing interest in local coffee culture and production is the role of the **family farm** and the growing role of **coffee tourism**. While Honduras is not known for its rural tourism, micro producers located outside of Santa Rosa de Copán are beginning to grow in their recognition and popularity with national and international visitors alike. Micro and small producers whose facilities and machinery produce coffee for self-production purposes and local sales, create an added dimension and growing need for **guides and interpreters for rural tourism**, as illustrated by the light blue arrow. These guides have particular expertise not only in understanding the technical functions of the coffee production process, but also in having the soft skills necessary (such as ability to transfer knowledge; described in Annex V) in order to relay complex information and create an enjoyable and memorable experience for guests. Family farm producers additionally create the opportunity for **self-employment and outsourcing** as they work with local communities and other small producers of goods like honey and candles to share and promote rural artisan goods.

The sector requires skills in managing core processes, from inputs and services (tertiary education in coffee growing, economics, rural construction, aspects of agribusiness and production management), coffee production (technicians in coffee production), harvesting (technicians in quality control and agribusiness, guides and interpreters), post-harvest (technicians in marketing and sales, logistics management, process control and social economy), storage and transport (technicians in insurance, process control and logistics management) and in export processes (technicians in insurance, process control and software development).

In one sense, increasing automation of basic systems in coffee production is gradually demanding higher skills in both manual and semi-automated basic production processes. However, the majority of individuals in this sector are small producers who lack basic skills and resources, and often face difficulty in participating in global value chains. The stimulus for these producers to upgrade their technical processes comes not only from organizations such as Instituto Hondureño de Café (Honduran Institute of Coffee; IHCAFE) and agricultural extension services, but also from other actors in the chain, namely commercial input providers and international buyers. Upgrading technology creates a higher use of automated labor, thus reducing the number of jobs necessary in more advanced stages of production such as that which occurs during the beneficiary process. On the other hand, as noted by a sector expert in Tegucigalpa, companies and producers interested in moving toward organic and high-quality coffee production are aware that the use of technology can damage the value of their crop, and therefore must weigh and examine the cost and benefit of upgrading technology throughout the value chain. A recent study analyzing social networks in Honduras' coffee value chain concluded that it is a "combination of support from public and private agents, together with the information from peers in the own community, that ultimately trigger the producer's decision" to innovate,[39] allowing them easier access to the global chains.

Employers and sector experts have identified the need for certification and undergraduate-level (*licenciatura*) programs in coffee production, as well as health and environmental safety. Additional specific education and skills-related needs mentioned by actors in the sector include:

- Basic administration, finance, management and negotiation skills
- English language
- Pest and climate change risk management
- Quality control

[39] Fromm, I., Hartwich, F., & Romero, G. Innovation Trajectories in Honduras' Coffee Value Chain: Public and the Private Influence on the Use of new Knowledge and Technology among Coffee Growers. Proceedings in Food System Dynamics. 2010, 274-291.

- Logistics and storage
- Marketing
- Trademark, patent and license management
- Mentoring and coaching for empowerment of local and family businesses
- Continuing education for small farmers and their families
- Strengthening of tertiary education provided on site and in higher education institutions

COFFEE: HOW CAN EDUCATIONAL INSTITUTIONS SERVE THE SECTOR?

IHCAFE is one of the principal sources of formal education in the coffee sector in Honduras. In 2008, the Institute created a department called the Escuela Superior de Café (Advanced School for Coffee Production) to professionalize the knowledge and skills of those working in the industry. Training programs have since educated the "next generation" of producers, as many of its students come from rural families where coffee is tradition. IHCAFE's programs include farm administration, coffee tasting, quality promotion, and rural mechanics.

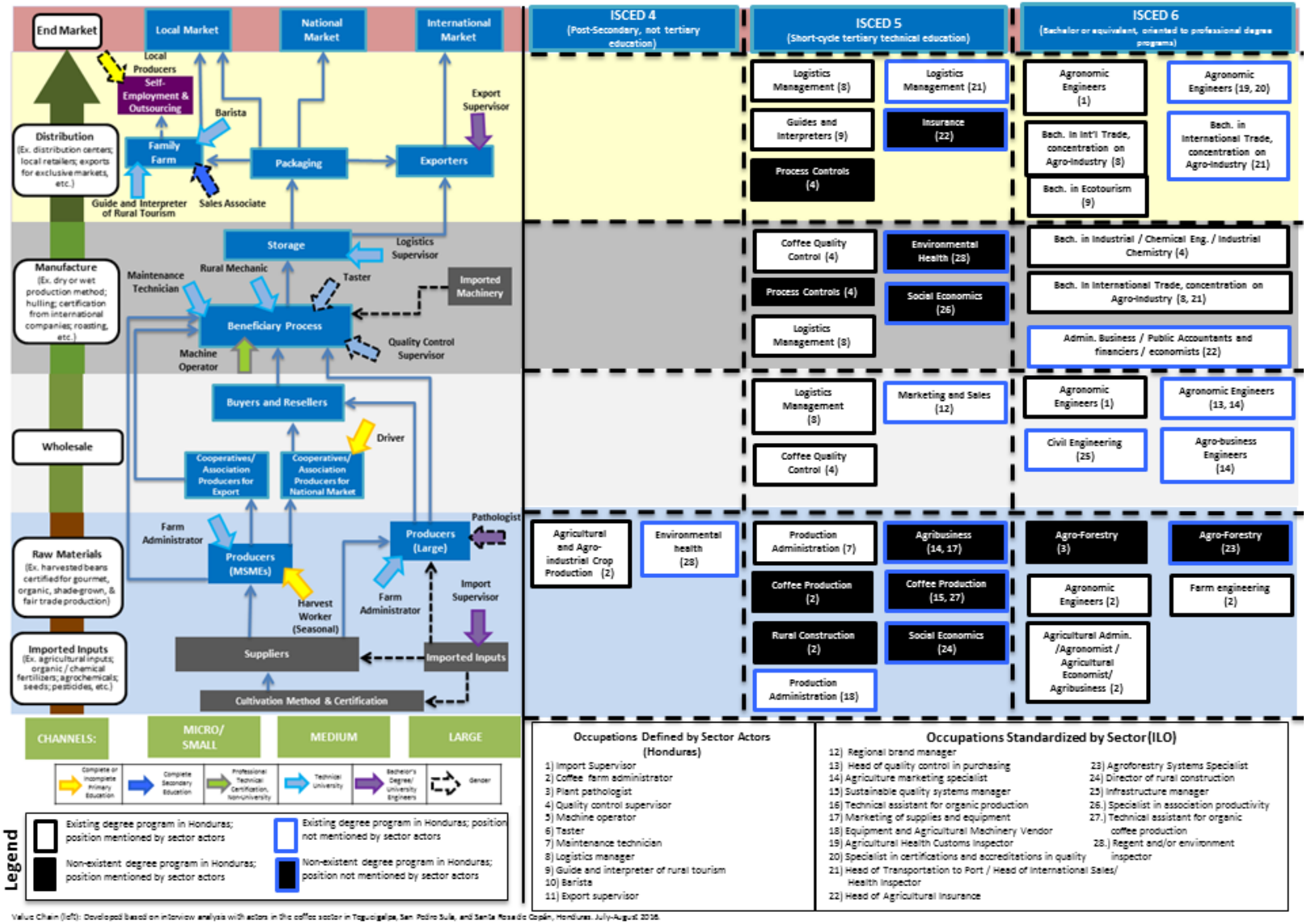
Strengthening IHCAFE's relevance and coverage in Honduras is their alliance with the National Autonomous University of Honduras (UNAH), which offers programs in technical quality control in coffee and technical agricultural production. UNAH also offers four related *licenciatura* degrees in agricultural engineering, agronomy, agriculture and food engineering and environmental engineering. While these programs were developed by UNAH and IHCAFE, geographic location of programs is key to their success. As a result, the Regional University Center of the West (CUROC), located in Santa Rosa de Copán, and Distance Education Centers (CRAED) in Santa Barbara manage program logistics. UNAH also runs agronomy engineering programs through the Regional Center on the Atlantic Coast, the El Zamorano Pan-American Agricultural School, University of José Cecilio del Valle (UJCV), National Agriculture University, and the University of San Pedro Sula (USAP). These locations allow students to combine theoretical study with internships and field experience at the Experimental Station, located in the department of Santa Barbara.

Despite IHCAFE's relationship with UNAH and its geographic coverage in coffee-producing regions, sector informants noted the continued weaknesses of training programs available in Honduras and the need for external training and education. It is for this reason, and in order to compete internationally, that IHCAFE has scholarship programs for its students, who often study in countries such as France, Brazil, the United States and Colombia in order to attain necessary knowledge not available in Honduras. The lack of available programs that are both directly and indirectly involved in production is most noticeable on the technical level, strongly affecting small producers who are comparatively limited in their access to training programs.

In order to understand these gaps in knowledge and education opportunity, and the effect on productivity and quality in coffee production in Honduras, the following "sister" or parallel diagram (Figure 14) has been developed. This diagram, building on the value chain analysis as it was developed with sector actors and experts themselves, can be used as a bridge between technical occupations considered by sector actors as contributing a particular value in the production process (see value chain, left), together with an understanding of the current offering (and lack thereof) of technical programs in Honduras (see adjoined "sister" diagram, right). This novel way of gathering and analyzing information explains where universities currently prioritize their educational offering and, as a result, how technical positions function within the limitations of the private sector. This methodology is applied to analyze each of the value chains explored in this assessment.

FIGURE 14. Honduras Coffee Sector: Positions and Existing and Potential Career Offerings

Position, Occupation, and Education Level in the Coffee Value Chain vs. Existing/Non-existent Degree Programs in Honduras



Value Chain (left): Developed based on interview analysis with actors in the coffee sector in Tegucigalpa, San Pedro Sula, and Santa Rosa de Copán, Honduras. July-August 2016.

"Pain-Diagram:" UNESCO. Campos de Educación y Capacitación 2013 de la CINE (ISCED-F 2013). http://www.uis.unesco.org/Education/Documents/isced-fields-of-education-training-201305.pdf ; OIT . La Normalización Internacional de las Ocupaciones: Estructura, las Definiciones de Grupo, y Tablas de Correspondencia. 2012. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf

The above diagram illustrates the following results, specific to the coffee value chain:

1) **Positions, Occupations, and Educational Level in the Coffee Value Chain vs. Existent and Non-existent Degrees in Honduras:** The placement of the value chain aligned with the accompanying "sister" diagram by industry function allows for an understanding of current (existent) and potential (non-existent) technical positions and educational programming. This diagram is intended to create a dialogue between universities and the private sector. Blue boxes in the "sister" diagram indicate technical programs and corresponding positions that exist in international contexts, which may make the value chain in Honduras more competitive. These programs and positions were compiled though a comparative study analyzing programs in each sector in Spain, Chile and Argentina.

2) **Occupations in the Sector in Honduras:** These are the existing technical positions identified by sector actors during interviews and considered important to the production process. Positions and occupation titles are standardized according to the International Standard Classification of Occupations (ISCO) developed by the International Labor Organization (ILO).[40] By analyzing ILO occupation standards, gaps in the specialization and expertise of technical positions in Honduras are highlighted.

3) **Standardized Occupations by Sector (ILO):** The addition of these positions, standardized by the ILO, supplements our understanding of technical functions within a given sector on a global scale. These positions are those *not* specifically mentioned by interviewed sector actors, for various reasons. The reason may be, for example, that coffee producers in Honduras either function without the named position; or the functions of a position not mentioned exist as part of the responsibilities of another position based on the size and capacity of a given business. However, producers may lose a certain amount of quality, efficiency or expertise by not employing a certain technical position, and through an international understanding of technical positions in a given sector, actors can compare and consider the value added of new or updated technical occupations to meet the needs of an industry. This may include a specific focus on technology, thus increasing productivity.

4) **Technical Educational Offering (Legend):** Based on the professional profile described by those interviewed, technical positions were analyzed and matched with corresponding programs, both existing and non-existent in Honduras using information from the National Education System. In order to understand the educational offerings in other countries that correspond with the skills needs of the selected sectors in Honduras, a comparative study was developed that looked at technical education on the tertiary level in Spain, Chile and Argentina. This analysis was used to show how new programs within universities could strengthen the productivity and competitiveness of the value chain.

In Honduras, only UNAH (partnering with CUROC and CRAED) currently has a coffee sector–specific training program, for technicians in coffee quality control and business administration (concentrated in coffee production). Here, we see that at the university technical level, there is an identified or a potential need for programs in process control (tasters); agribusiness (import supervisors, specialists in agricultural marketing and in marketing of equipment and supplies); and coffee cultivation (coffee farm administrators, quality and sustainability system managers and technical assistants in organic production).

[40] International Labor Organization, http://www.ilo.org/public/english/bureau/stat/isco/

TOURISM

Market conditions for tourism are difficult because of security issues; however, business tourism remains relatively strong. In this sector, employers mentioned the importance of English, unsurprisingly, but also familiarity with software (including social media platforms and accounting software) and web design. Because of the dominance of business tourism, particularly in San Pedro Sula, the tourism industry in Tela and La Ceiba must overcome security challenges to create a leisure and beach tourism environment connected to the needs of business tourists. For example, many business owners in Tela and La Ceiba noted that people "don't see a reason to stay" while citing the perspective of insecurity. However, the proximity of Tela and La Ceiba to San Pedro and the array of beach and eco-tourism activities have the potential to draw business tourists for an extended stay. This means the aforementioned knowledge and skills in technology (particularly necessary in online marketing for local tourism agencies) and language are necessary to create enjoyable experiences for international guests. Employees with these skills and knowledge will help drive demand and increase employment opportunities in the future.

Home to the archeological site of the Mayas at the Copán Ruins, over 400 miles of white-sand beaches on the Caribbean Sea and Garifuna ethnic communities, considered by UNESCO an "Intangible Cultural Heritage," Honduras has been an ideal place for travelers from Guatemala, El Salvador and North America for many years. However, following the 2009 global economic crisis, the presidential coup, and a sharp rise in violent crime due to increased gang activity, tourism, particularly leisure travel, has suffered greatly. "Everyone forgot that Honduras existed in 2009, and investors quickly picked up and left," notes a hotel owner in La Ceiba. With images of violence and insecurity being exported to every corner of the world, the perception of Honduras as a country of opportunity for leisure-based tourism soon disappeared. Seven years later, this abandonment continues to be felt by many who work in tourism, particularly in coastal towns such as La Ceiba and Tela in the department of Atlántida.

Despite the noticeable lack of tourists in towns like La Ceiba, urban centers such as Tegucigalpa and San Pedro Sula where business tourism predominates have felt the aftermath of the 2009 crisis and coup differently. Prestigious international hotel chains have a presence in major cities, catering to the needs of business travelers and large national and international public and private sector conventions, a segment which remains relatively strong. This is not to say companies catering to business tourists remain untouched, but rather that those outside of large urban centers such as Tegucigalpa and San Pedro Sula encounter a distinct set of challenges when it comes to future growth.

Honduras has 949 accommodation establishments with approximately 20,000 rooms and 33,000 beds.[41] Approximately 80 of these businesses belong to the Association of Small Hotels of Honduras (Asociación de Pequeños Hoteles de Honduras; HOPEH).[42] Tegucigalpa, San Pedro Sula, La Ceiba, the Bay Islands and Copán account for 70 percent of accommodation establishments in the country, with approximately 22,000 beds available.

[41] Instituto Hondureño de Turismo (IHT). Catálogo de Proyectos del Sector Turismo de Honduras. Tegucigalpa, Honduras. 2015. http://www.iht.hn/wp-content/uploads/2015/10/CatalagodeProyectosIHT2015.pdf.
[42] Interview with HOPEH/CANATURH in Tegucigalpa. 12 July 2016.

Honduras' assets include:

- More than 650 km (404 miles) of white-sand beaches with lush nature in the Caribbean
- Part of the Mesoamerican Reef, the second largest in the world
- The UNESCO World Heritage sites Copán Ruins and the Rio Platano Biosphere as well as the potential discovery of the legendary lost "White City" in the Mosquitia[43]
- More than 100 protected areas (27 percent of the country)
- Presence of nine "living cultures," including the Garifuna ethnic group considered by UNESCO an "Intangible Cultural Heritage."

While growth has been slow since 2009, recent figures indicate that various efforts to show the best Honduras has to offer may be having a positive effect. For example, during 2013, foreign exchange earnings reached $618.3 million lempiras, representing 6 percent of the national GDP.[44] Preliminary statistics projected by the Ministry of Tourism for 2014 reflect potential growth of 11.4 percent in the number of visitors to the country.[45] Currently, tourism accounts for 208,365 direct jobs in the country, and it was estimated that 5,000 jobs were to be created in 2016. However, stronger, more concerted efforts are needed to strengthen connections between primary and indirect beneficiaries of tourism activities in areas like Tela. "People who don't work directly with hotels or restaurants don't feel tourism as part of their identity in Tela. We need to drive the idea that 'this is what Tela is' in order to bring the community together around what tourism could be."

There are four main tourism segments in Honduras: beach tourism, eco-tourism, cultural tourism and business tourism. Business tourism and visits to friends and family account for significant expenditures in Honduras. International arrivals are dominated by visitors on leisure travel. These segments are described below.

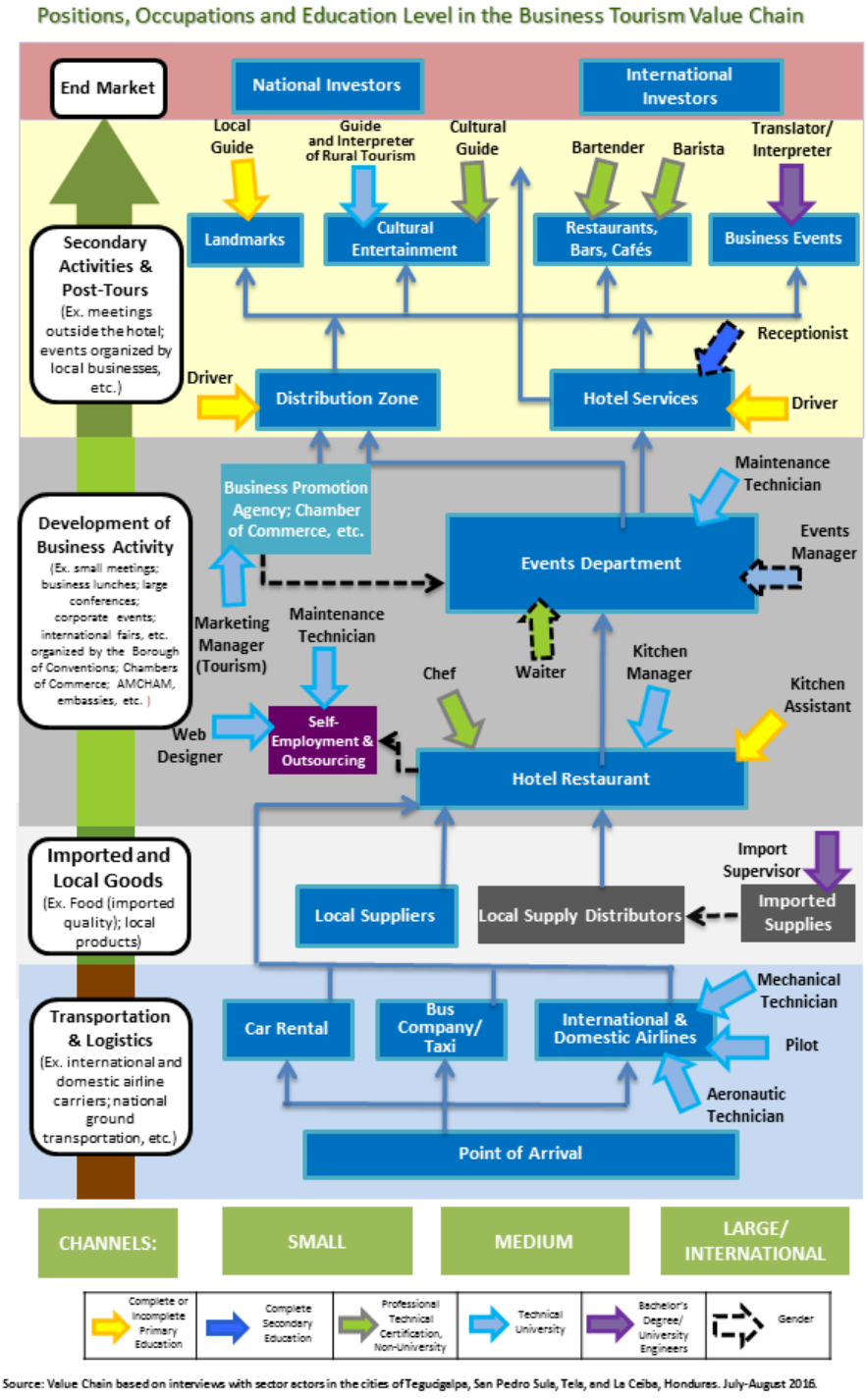
- **Beach Tourism**: This is a well-established market, which traditionally involves regional, international and domestic tourists traveling as couples and families, staying at high-end hotels and resorts and often engaging in a variety of water-related activities, such as diving, swimming, surfing and sailing.
- **Eco-tourism**: This growing segment includes the adventure traveler and is a mixture of nature lovers and thrill seekers. These eco-adventure tourists are a relatively new market. Such travelers value sustainability and often choose a company or lodging depending on its environmental impact. It is not clear at this stage of market development of eco-tourism how much travelers are willing to pay for green-certified tour operators or hotels. At this point, the green certification movement has largely been driven by the supply side.
- **Cultural Tourism**: Cultural tourists have interests spanning urban and rural landscapes, looking to experience a connection to a destination on a personal level. The cultural tourist is cost-conscious and generally comes from the United States or Europe. This market is diverse in culture and age.
- **Business Tourism**: These visitors are entrepreneurs, executives, traders and other professionals who come to finalize deals, attract customers or provide services, and they have significant purchasing power. This is fundamentally urban tourism, and the infrastructure needs

[43] National Geographic. Honduras: La Ciudad Blanca o la Ciudad Perdida del Dios Mono. In Lure of the Lost City. 2015. http://www.ciudadblanca.hn/.
[44] IHT, 2015.
[45] IHT, 2014

are very specific. Business tourism is one of the most important to the industry as, in addition to the resources provided directly by visitors, it can attract companies to invest in the country.

A map of the business tourism value chain follows; additional tourism value chains can be found in Annex III.

FIGURE 15. Honduras Business Tourism Value Chain with Workforce Overlay



Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa, San Pedro Sula, Tela, and La Ceiba, Honduras. July-August 2016.

One way that strategy has changed for businesses as a result of low numbers of tourists is that tour operators are broadening the products they have traditionally provided to focus more on the domestic market. Traditionally, companies have catered to North Americans and European groups who come for anywhere from a day to a several-month tour within Honduras and regionally. However, recently more companies have begun to rent cars, vans and bikes; providing transportation to groups (with a driver); and advertising in hotels in Honduras and in the region (where they would be paid a commission), just to keep in business. This is a necessary service, not just for the financial benefit of the company, but for business and leisure tourists alike, to be able to organize secure and reliable transportation options within Honduras.

Hotel owners in La Ceiba also noted that the marketing strategy within the department of Atlántida has recently changed. Traditionally, there had been competition between La Ceiba and Tela due to the historic presence of the United and Standard Fruit Companies, but Cámara Nacional de Turismo de Honduras (National Chamber of Tourism of Honduras; CANATURH) in La Ceiba and Tela are now working together to promote Atlántida as a destination. “Atlántida sounds like a kind of whimsical place, and we want tourists to come here and stay more than a night before they go to Roatán. Most people coming through here don’t even stay over one night, and that’s a problem,” the interviewee noted. Part of this effort has been developing a “tour destination management” network to strengthen how businesses and organizations in the area work together to promote Atlántida and not just Tela or La Ceiba. This involves several committees that have been established not only to promote tourism, but to ensure quality, develop training and, ultimately, change the negative international perception of Honduras. Tourism associations in Tegucigalpa are focusing on enhancing the quality and standardization of skills training in particularly small hotels in Honduras through the use of training manuals; however, they are seeking additional funding to make this material available through an online platform, which they hope will strengthen small businesses not only in Atlántida, but also across Honduras.

Some companies have also capitalized on coffee production in the region by connecting tourists who are in the department of Copán to see the ruins with locally owned and operated coffee producers. Here there is a focus on “rural tourism” that is relatively new and small in Honduras, but may have the potential for further development and exploration. Several of these specialized coffee producers, for instance, take tourists through the whole production process, from bean to cup, and are led by a trained agronomist, an expert in the process. Similar tours are also available on tobacco farms in Copán department.

Smaller, family-owned coffee producers have also adapted to the decrease in tourists by targeting nationals not only for traditional tours of the region, but for events such as weddings (“amor, boda, cafe” is the concept, promoting local coffee and resources at weddings), corporate events and university tours. One operator also produces a magazine to promote their products and services.

In order to understand the potential of Honduras’ tourism sector, it is necessary to examine several key limitations to growth:

- **Insecurity.** As previously noted, fewer visitors are coming from elsewhere in Central America as a result of violence, particularly in terms of leisure tourism. There is a large perception of insecurity due to narco-trafficking in regions like La Mosquitia in the department of Gracias a Dios on the border of Nicaragua, where many tourism companies operate adventure tours in rafting, hiking, bird watching and kayaking. The “most dangerous city in the world” title awarded to San Pedro Sula is a reflection of the influence and presence of youth gangs, who pose a real threat to international investment and future growth, particularly for business tourism and conventions in a city that is defined by its industry. Honduras’ insecurity perception is strong, even by neighboring

countries such as El Salvador, which also experiences high rates of violence. A hotel in La Ceiba underscored the perception particularly in leisure tourism, stating, “We used to get a lot of people from El Salvador, but in the last 7 years or so, even they won’t come.”

- **Size.** The majority of hotels, restaurants and tourism agencies are considered small and medium-sized enterprises, and most lack the structure, expertise and advantage in training staff that large international chain hotels come with. For SMEs, there is no clear centralization or understanding of management, training and best business and service practices. Instead, much of what goes on in smaller businesses is learned over years of experience, which often means profit loss from ill-informed business practices.

  Tourism associations note that it is challenging to create a system standardization of quality service and business practices for SMEs in their industry because small businesses are scattered throughout the country and are not necessarily near tourism association offices where they could receive additional services, trainings and platforms for marketing. SMEs often “don’t believe in training,” as it is expensive, staff turnover is high, and many believe that if they do train, competing hotels in particular will steal talent.

  Locally owned restaurants have a similar limitation for the growth of their industry. A gastronomy association in Tegucigalpa notes that while they see a generational change in consciousness in how customers, both Honduran and international, experiment with food practices, this consciousness of how to eat better, eat locally and value the many natural fruit, vegetable, and seafood resources that Honduras has is limited by what information exists of both food production and consumption. Safe food practices, such as proper refrigeration, transport and storage, that are demanded by chain restaurants and international chains to ensure quality and standardization are not possible for smaller restaurants as they often buy informally from local producers who do not have the structural capacity to provide this level of quality. Industry actors in La Ceiba noted that they are limited in supplying seafood in particular to cruise ships that come into Roatán because they do not have the facilities to match the standards demanded. Instead, cruise ships often import their seafood from places like Japan, despite passing through an area rich in natural seafood resources.

- **Informality.** Informality can be a hindrance in the tourism sector given that small and medium sized hotels, tour operators, restaurants and other businesses often buy from informal producers, which reduces the quality and consistency of products and customer expectations. Industry leaders and business associations noted that entrepreneurship programs for return migrants from the United States (former gang members and others) are often at odds with external social conditions and reality of gang influence that many participants feel when they try to formalize a business. Many young people who would try and start up small businesses in their neighborhoods were extorted by gang members looking to take advantage of the fear and desire to survive that are characteristic of many individuals living in gang-controlled areas. As a result, business and industry organizations have had to set up special local police protections for youth participating in entrepreneurship programs. One industry leader noted that it is very hard to convince a young person to formalize a business given this reality.

TOURISM: KEY POSITIONS AND SKILLS NEEDS

"Success in tourism comes from doing things consistently well. We only have moments, and each moment might be the one our guest is going to remember. If we did something right one hundred times and one time wrong, the guest is only going to remember the one wrong." – Hotel owner, Tegucigalpa

The above quote illustrates how crucial it is for industry leaders, business owners, and all levels of staff within the tourism industry to "get it right." From the time travelers first seek out information about a destination until they sign the check and walk out the door, they are creating a memory of the experience for a guest. Thus, hotels, restaurants, tourism agencies, transportation companies and artisans of handcrafted goods must strive to consistent, high-quality service; innovation in style; and often the element of surprise. Education, additional training and interpersonal soft skills are essential to meeting—and surpassing—these goals.

Interviewees in the sector noted emerging needs for tourist guides and interpreters; taxi and tourism transport drivers (vans, buses); specialists in administration, marketing and sales, and maintenance and restoration of heritage; and support in general maintenance, as well as in *haute cuisine* (where Honduran professionals with international experience are already teaching virtually and via television programs). (See Annex IV for more details.) Entrepreneurship opportunities exist in web design and maintenance.

However, the education system has created a structural limitation when it comes to potential growth in the tourism sector. Public schools lack the capacity to teach basic computer skills such as Microsoft Office (Excel and Word being most important), let alone how to use the latest technology. The low quality of education that students receive impacts their ability to communicate clearly and with confidence to guests of hotels restaurants and tourism agencies, and it is generally addressed internally within a business, if not through a short program offered by tourism associations or the Instituto Nacional de Formación Professional (National Institute of Vocational Training; INFOP). Employers note that staff also often lack motivation and are inhibited by "the culture," meaning that it is challenging for people to make quick decisions. Other employers added that quality and efficient service delivery are inhibited by the lack of English fluency; lack of standardizations in the eco-tourism industry, particularly in rafting where most certifications are on the international level; and lack of training and capacity in the area of marketing, particularly in small businesses where staff is limited.

Technological skills are seen as key for the sector's growth. Tourism institutions working nationally are beginning to look beyond social media and understand the need to develop applications, including a virtual reality platform, to promote Honduras as a tourist destination. The tourism sector is implementing a strategy that allows users to view facilities via Livestreaming (a streaming video platform that allows its users to play and stream videos) and to display local experiences. This is demanding new ICT skills on the part of government sector operators and service providers, mainly on free platforms such as Facebook, Instagram and Twitter, which involves the development of basic and professional content for tourism promotion.

Recently, the most significant changes have been in the necessity for hotels, restaurants and tour operators to hire people with at least a basic understanding of how to use programs like Microsoft Word and Excel, particularly for staff working in administrative roles. These individuals are also often responsible for SMEs' social media marketing and basic website maintenance, as there is not necessarily the capacity for someone to be hired for this function by itself. Large hotels are an exception, as they have dedicated public relations managers. Restaurants, hotels and tour operators in Tela noted that

young people have an advantage when it comes to fulfilling this function in a small business because they use this technology daily; it is not something they need to learn on the job.

English is a skill in increasing demand for both business and leisure tourism. Several eco-tourism companies in La Ceiba have an advantage in this regard, as they often employ English-speaking foreigners who work for short periods as raft guides or bar/restaurant servers. This is not only valuable as rafting guides learn from one another, but English-speaking guides are crucial as they are in charge of the safety of those on their boats. Tourism operators mentioned that INFOP and CANATURH in Tela have offered English classes and trainings for those working in the tourism industry, but this also comes with challenges: INFOP courses are often cancelled, are inconsistent, don't provide the depth of information or learning needed and are seen as a waste of time. Furthermore, it is hard to send employees to trainings depending on what time of the day trainings are offered (e.g., employees in restaurants that are busier at nights or during lunchtime would be limited).

The push for English and some of the recent marketing strategies in the Atlántida regions are not a response to huge demand of foreigners coming into the country (because that is not occurring), but rather an attempt to appeal to travelers and re-create the demand seen before 2009.

Attitudes

Actors such as those working in industry (Tegucigalpa), as tour operators (Tela) and in hotels (La Ceiba) mentioned that employees who graduate from the universities often have unrealistic expectations about what type of job they will receive and how much they will be paid. For example, tourism companies in Tegucigalpa noted that students who graduate from private universities do not want jobs in restaurants. However, students who leave public universities, who have a greater need to secure a steady income, are more willing to start at an entry-level job and advance within a company. A manager at a hotel in Tela also noted that those who apply often have "unrealistic expectations about salary"; the hotel's capacity to hire new and particularly fulltime staff is limited due to the lower number of tourists staying there. The owner and human resources manager at a tourism operator in Tela echoed this sentiment saying, "We once hired someone who had just finished the university to work with us in administration, but it didn't work out because he never completed his work and did not contribute to the team effort. He felt entitled to sit there in the office just because he had a degree." As a result, many businesses across regions and sectors prefer to hire staff who have finished high school with a concentration in tourism, and train them internally because they see them as better, more reliable workers due to their financial situations.

TOURISM: HOW CAN EDUCATIONAL INSTITUTIONS SERVE THE SECTOR?

The interest in formal education to serve tourism is evident. Up to 50 public and private schools in urban centers offer an upper secondary track in Hotel and Tourism. However, only two university-level hotel/tourism programs are offered, by three different universities:

- University Technician (*técnico universitario*) in Tourism Business Administration that is offered by the University of San Pedro Sula (USAP) and University of José Cecilio del Valle University (UJCV) offered in San Pedro Sula and Tegucigalpa, respectively.
- University Technician in Food and Beverages is only offered by the National Autonomous University of Honduras (UNAH) in Tela.

Other university technical programs offered in Honduras related to the sector are:

- Technician in Management offered by USAP and Central American Technological University (UNITEC) in San Pedro Sula, Tegucigalpa and La Ceiba

- Technician in Marketing and Sales, offered by UNITEC (Tegucigalpa, San Pedro Sula and La Ceiba)
- Technician in Sales Management, offered by the USAP in San Pedro Sula.

University *licenciatura* degrees, equivalent of a bachelor's degree, include:

- Eco-tourism, offered by UNAH and the Metropolitan University of Honduras (UMH)
- Hotel Industry and Tourism, offered by the National Pedagogical University, Francisco Morazan
- Tourism Business Administration, offered by USAP and UNITEC
- Tourism Management, offered by the Polytechnic University of Honduras

On the master's degree level, two programs exist in the area of tourism:

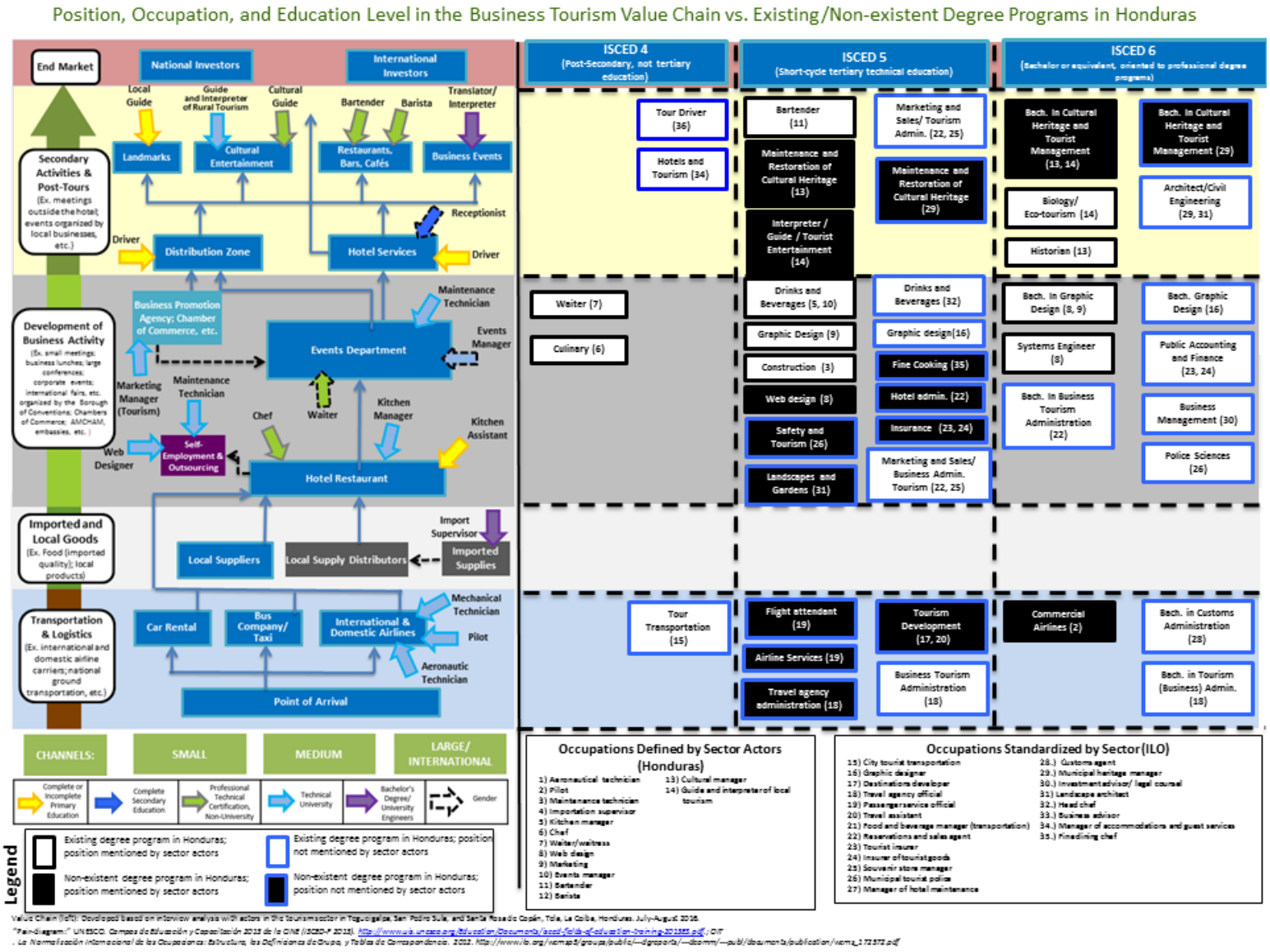
- Master's in Tourism and Local Development, offered by UMH
- Master's in Tourism Management, offered by UMH

INFOP and CANATURH also offer informal training and education on tourism topics such as technical courses in accounting and sales. Other courses support the development of interpersonal and communication skills recognized by sector actors as limitations. These include short courses on teamwork, self-esteem, professional ethics and coaching, to name a few.[46]

The "sister" or parallel diagram below depicts information on existing and potential tourism-related educational offerings matched to the key positions in the business tourism value chain. Here we note a potential need for the following university technical training programs (with potential occupations): maintenance and restoration of cultural heritage (cultural managers); tourist guiding and entertainment (rural tourism guides and interpreters); web design (web designers); haute cuisine (chefs); insurance (co-insurers of tourists and tourist goods); tourist security (municipal tourist police); tourism development (destination developers and trip assistants); and commercial airline services (flight attendants and customer service assistants).

[46] INFOP. Instituto Nacional de Formación Profesional. Departamento Desarrollo Empresarial. Programación de Cursos, Julio – Septiembre 2016. Tegucigalpa, Honduras. http://infop.hn/wp-content/uploads/2014/07/cursos_desarrollo-empresarial_2016-03_jul-sep.pdf

FIGURE 16. Business Tourism: Positions and Existing and Potential Career Offerings



Many businesses tend to hire by word of mouth, and social capital often limits the skills and knowledge of those hired. For example, if someone with a low skill set refers another person with a low skill set and the individual is hired based on having this relationship, growth in the business will continue to be limited, as mentioned by hotels in Tela and in San Pedro Sula. A representative of a hotel in Santa Rosa de Copán stated their general hiring practice is similar, but they are even more limited because their location limits their pool of labor. Many cannot afford to pay someone with a technical education as they tend to ask for more money and have different expectations, and therefore do most of the technical training in-house, also taking on the cost of training to deliver a quality product. Chain restaurants and franchises run through industry associations prefer those with little experience to those who have done courses through INFOP because the chain restaurants want employees who can execute corporate standards, rather than being innovative or creative. Many employers look to high schools that offer *bachilleratos* in tourism to hire workers who are willing to learn and work hard from the bottom up. In general, across the sector, opinions differ about which education and training institutions produce good employees that are ready for the work.

Currently, because individual businesses are more interested in training their own personnel, there is some flexibility with regards to requiring formal education, particularly with entry-level jobs. If a manager or owner sees that someone is capable of a leadership opportunity and/or receiving additional training because of their potential, formal education often seems unnecessary, even for tasks in administration and accounting. These types of positions may require training from an institution such as CANATURH or INFOP to fulfill the demands of the role, but may not require a university degree. Although this is encouraging for the many Honduran workers who do not have tertiary education, employers in the sector —particularly SMEs—may require some convincing when it comes to the value of technical tertiary education in tourism. Moreover, it is worth noting that those working in the sector may be vastly under-qualified to perform the technical duties of a position (for example, in accounting, where the financial stability of a business is reliant on accurate numbers) or overqualified (for example, a recent graduate searching for employment who has attained technical knowledge, but cannot demonstrate necessary attitudes or soft skills). It is crucial for associations, business owners and universities alike reexamine the value of technical education and shorter course offerings through INFOP and CANATURH to redirect the tourism industry in the positive direction necessary to make significant changes.

Although tourism associations in Tegucigalpa noted that many SMEs in tourism do not like to do their own training because it is expensive and time-consuming, and talent is often stolen by competitors, every business and organization interviewed mentioned that they have a need to do their own training. This is often supported by CANATURH or INFOP, but many things are taught internally based on needs and demands that arise spontaneously instead of on standards set by the industry.

TEXTILES

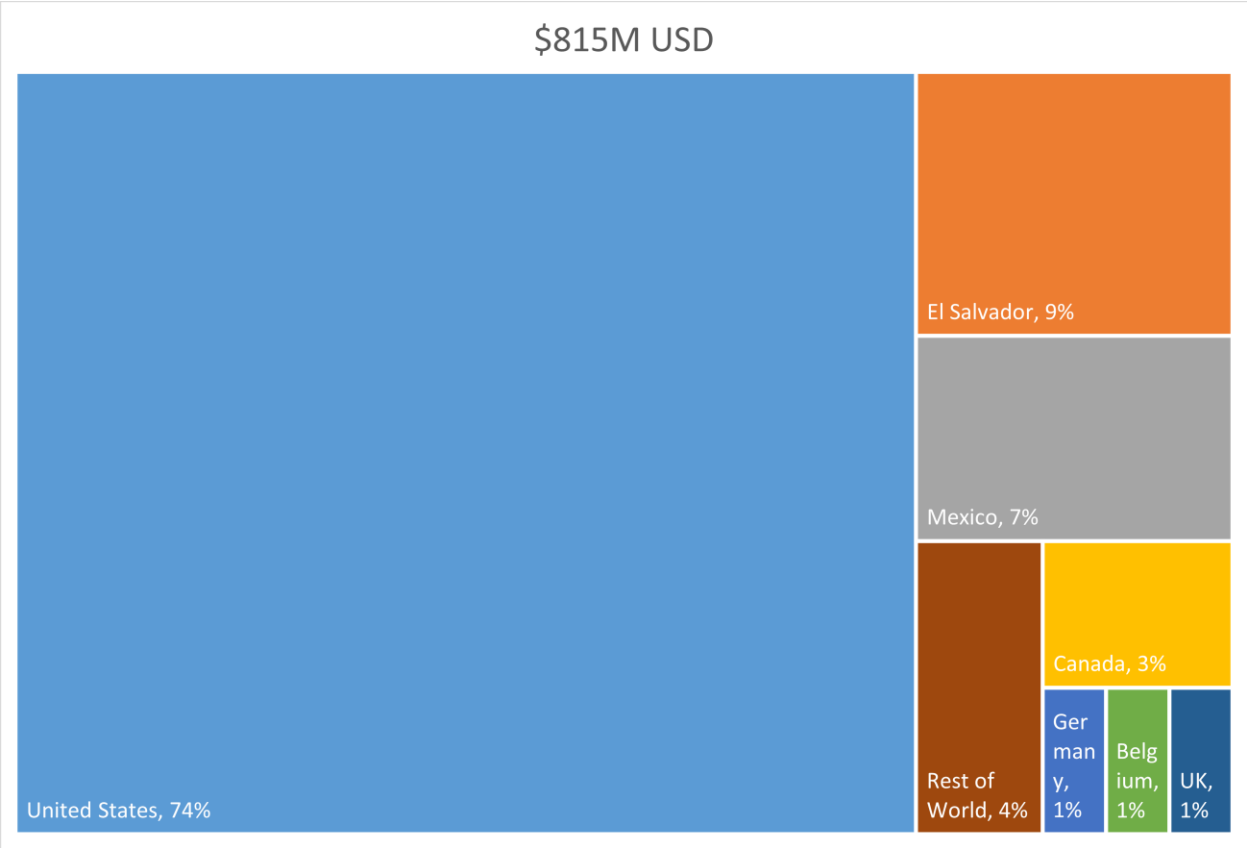
Textile producers are under pressure to respond to demand for their products at an increasing pace and scale, but as technological needs have changed in production and maintenance, employers reported a need for computer and software skills, and also—as many employees have lower levels of education—for a number of specific soft skills, as well as higher-order thinking skills. Access to newer technology and personnel trained in the operation and maintenance of machinery are current limitations in the sector, but crucial to respond to market demand in the future. Companies that are able to use this technology will drive competition, particularly in export markets where quality and efficiency define the needs of international clients. As these changes occur in the textile sector, technical positions that can satisfy technological needs will be more valuable to both *maquilas* and local producers.

From 1976 to 1999, a series of laws creating free-trade export processing zones helped to establish and promote the country's textile manufacturing (*maquila*) industry. However, the industry was transformed in 2002 with the introduction of the *paquete completo* or complete package model that provided the infrastructure and necessity for higher skilled professionals in the areas of dyeing, cutting, screen printing, embroidery, laundry services, packing, and storage. Today, Honduras' *maquila* sector is the most important in Central America, and textile manufacturing is one of the main sources of employment in the domestic manufacturing industry, with a share of about 41 percent of total employment in manufacturing, or about 125,000 jobs, in 2014.[47] Additionally, according to business association managers, the increasing flow of both local and international investment has caused the sector to experience rapid growth, generating considerable income and boosting economic development. Success in the textile sector and the increase in skilled labor have created the opportunity for other more complex products to be introduced. These include such products as automotive harnesses, electronics, and higher tech apparel, but also have spurred the need for investments in call centers and renewable energy. Today, apparel manufacturing and aforementioned harnesses are the most important categories in this industry. Honduras exported more textiles than any other Central American country, holding 34 percent of exports in 2014; Honduran companies also exported 16 percent of harnesses in Central America in 2014, second only to Costa Rica.[48] The majority of apparel is exported to the United States; Figure 17 illustrates that 74% of t-shirts -- the apparel product with the second-highest level of exports in 2014 -- were exported to the United States.

[47] Banco Nacional de Honduras. Bienes para Transformación y Actividades Conexas 2014. Expectativas 2015-2016. http://www.bch.hn/download/maquila/informe_bienest2014.pdf, 3.

[48] Banco Nacional de Honduras. Bienes para Transformación y Actividades Conexas 2014. Expectativas 2015-2016, 7.

FIGURE 17. Countries to which Honduras exported t-shirts in 2014



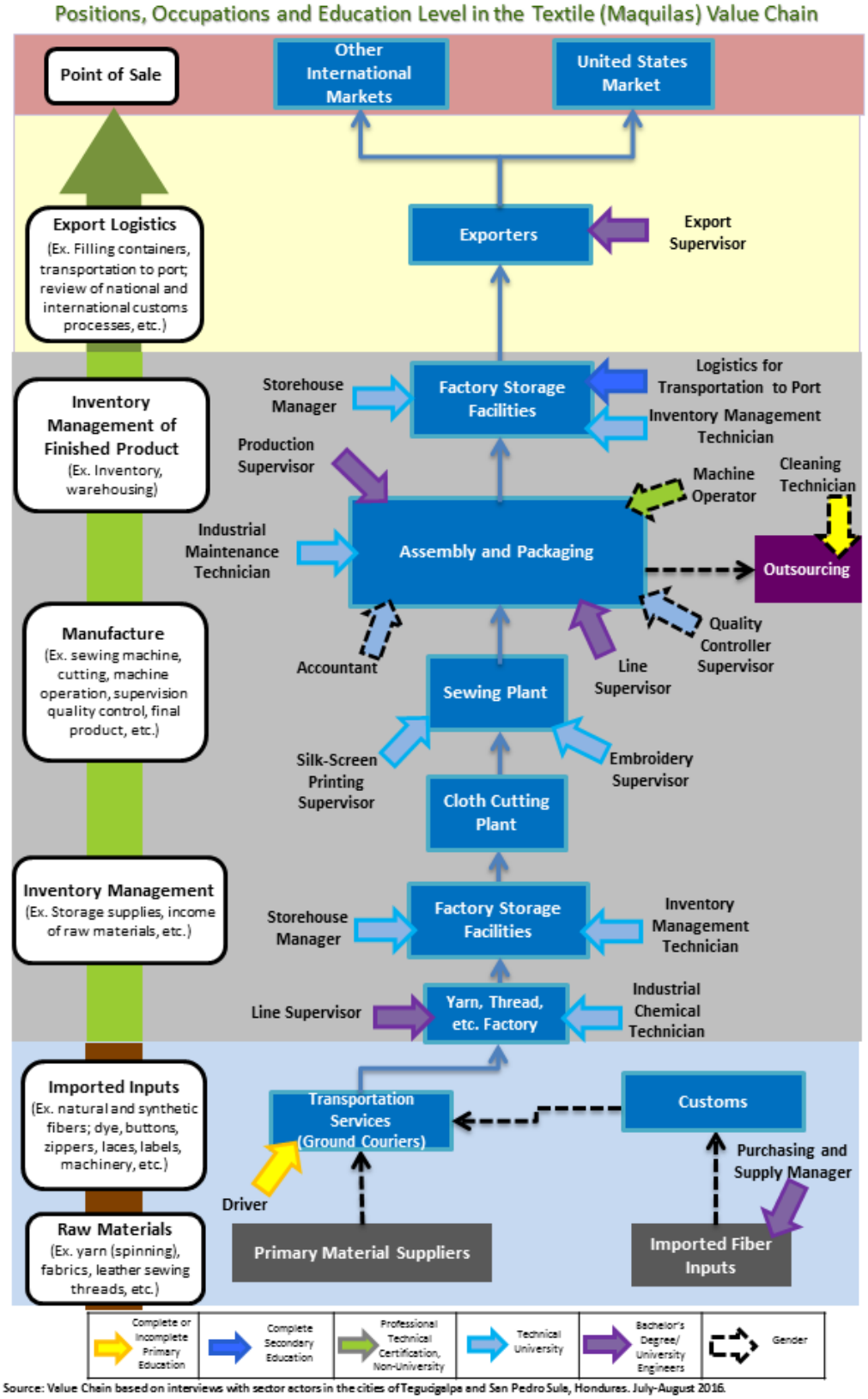
Source: Atlas of Economic Complexity

More than 80 percent of the manufacturing and textile industry in Honduras is concentrated in the area around San Pedro Sula, constituting a very recognizable and mature cluster.[49] About 55 percent of Honduras' GDP is generated in the Sula Valley, representing about 40 percent of Honduran exports. The area contains approximately 25 percent of the country's population, with the largest labor force in both urban centers and rural areas. It is also the main source of goods and services for the country. Externally, the Sula Valley is not only important for Honduras, but also for Central America, because Puerto Cortés is used by other countries in the region, and it links Central America to the Caribbean Gulf coast and the east coast of the United States.

This strength and socioeconomic dynamism of the Sula Valley, reflected in many indices, has generated a phenomenon of mass immigration that has made this area the most densely populated in Honduras. The population of the Sula Valley has quintupled in the last three decades, driven by the economic boom. A value chain map of the export apparel sector with workforce overlay is shown in Figure 18.

[49] Universidad Nacional Autónoma de Honduras. El Ordenamiento Territorial en Honduras: Una Mirada Inicial desde la perspectiva de 13 indicadores. 2012. http://faces.unah.edu.hn/catedraot/images/stories/Documentos/OUOT/INFORME_OUOT.pdf

FIGURE 18. Honduras Textile Value Chain with Workforce Overlay



Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa and San Pedro Sula, Honduras. July-August 2016.

TEXTILES: KEY POSITIONS AND SKILLS NEEDS

The industry is highly structured and competitive, and its representatives are guarded about the information they share regarding both production and recruitment processes. While both chambers of commerce and industry associations have databases with profiles of thousands of individuals that employers may use to recruit workers, sector actors see the internal training program—Programa de Capacitación Integral para la Productividad (Program of Integral Training for Productivity; PROCINCO)—as sufficient to cover technical needs of personnel. Because of the weight and importance that PROCINCO represents for the *maquila* industry, even representatives of large *maquilas* who mentioned that they need to hire 1,000 people (of which 500 are technical positions such as operators, maintenance and engineering) stressed that they give priority to these posts first to staff within the company and prefer to hire internally. However, another association leader noted this projection as an anomaly, as most companies do not plan ahead or consider future employment needs. Instead, due to the large number of unemployed individuals looking for work and the internal effectiveness of PROCINCO's training, the *maquilas* are not concerned about filling future labor needs. Moreover, actors in Tegucigalpa described the flow of workers in and out of *maquila* factories as replacing those who leave, as employment growth remains low across the sector. Opportunities for entrepreneurship, however, may be found in outsourced services, such as cleaning.

Despite strong internal technical training, employers and sector actors described interpersonal and soft skills deficiencies that have not necessarily been addressed by PROCINCO or businesses themselves. Instead, these deficiencies may relate to the low level of formal education that categorizes many in the *maquila* industry. Skills that are lacking include conflict management, leadership skills, emotional intelligence, stress management and time management. Others noted the complicated nature of decision making, being proactive and practicing analytical skills for many of their employees.

In terms of technical skills, *maquila* business owners and exporters noted the growing necessity of basic skills in mathematics, ability to manage software and basic computer programs, and accounting and finance skills in order to manage costs and pricing of materials. Computer skills were of particular importance in areas of silkscreen printing, embroidery, inventories, cutting, production control and preventive and corrective maintenance as these areas have seen the most significant upgrades in technology in recent years. As a result of changes in technology, experts stated that individuals in these positions would have to receive additional training and upgrade their skill levels to meet the demands of the industry. Additionally, given the nature of the *maquila* model as imported to Honduras from other countries, English becomes a necessary skill at certain levels of production for training purposes and machinery maintenance. While many of these learned skills are described as weak across sectors, particularly in terms of mathematics, computer and English language skills, these weaknesses may be particularly concerning for the textile industry as their training centers and internal operations are largely divorced from secondary schools, technical programs and universities. Annex IV provides a list of specific skills defined by informants as demanded by the sector.

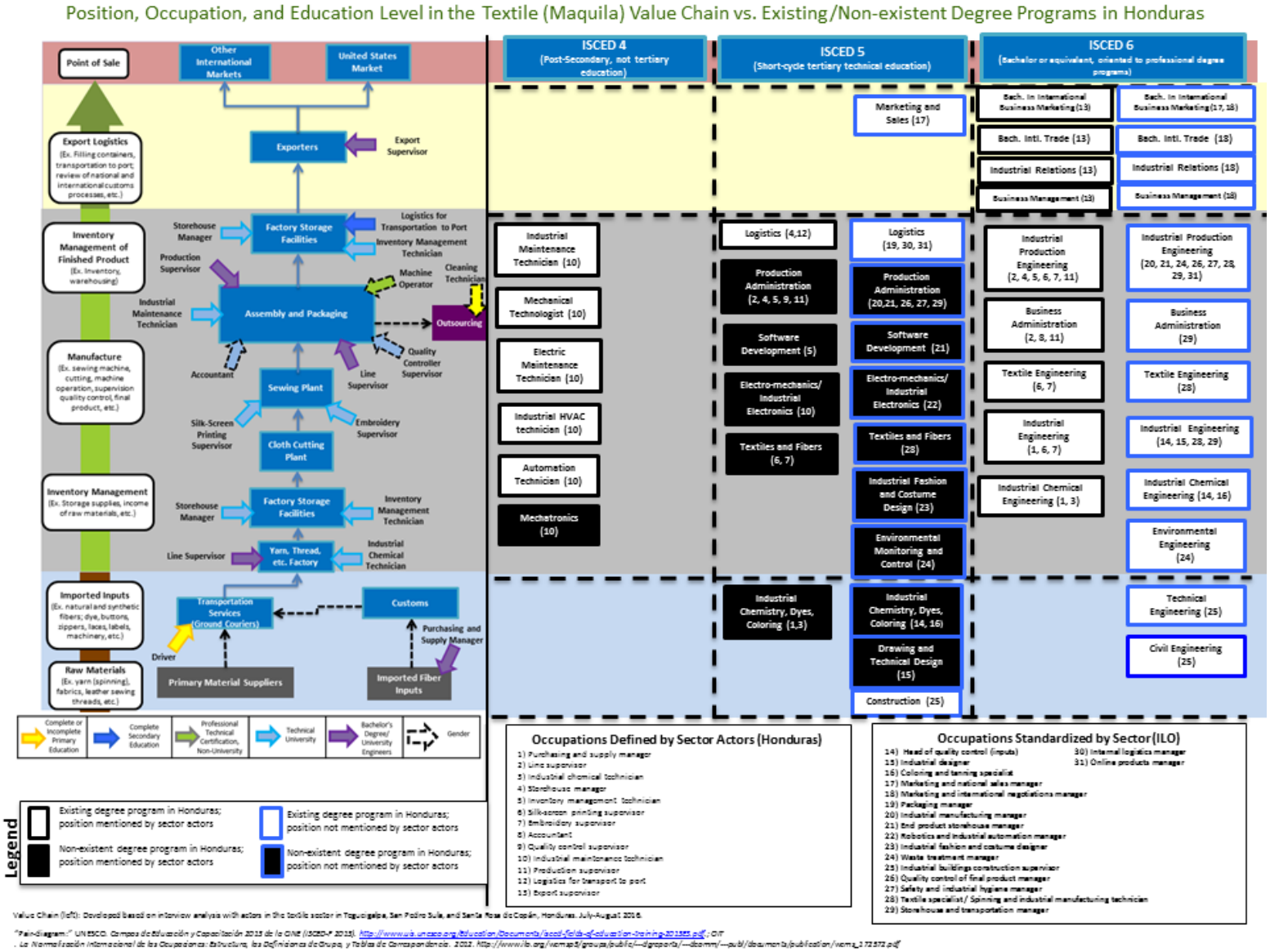
TEXTILES: HOW CAN EDUCATIONAL INSTITUTIONS SERVE THE SECTOR?

The PROCINCO program began in 2001 under the auspices of the Multilateral Investment Fund-IDB. The program initially focused on trainings in the areas of Health and Safety Productive Training. Today, this technical unit serves as a decentralized division of the Honduran Maquila Association, merging efforts of the Ministry of Health, Honduran Institute of Social Security, INFOP and trade unions. PROCINCO helps to improve quality, efficiency and employee productivity through its trainings, and thus the competitiveness of the companies it serves.

USAP offers a technical degree in Production Administration. *Licenciaturas* in the area include Industrial Engineering and are available at the following universities: UNAH, Catholic University of Honduras (UNICAH), UNITEC, USAP, UJCV, Technological University of Honduras (UTH), Polytechnic University of Honduras and Universidad Jesús de Nazaret. UNAH also offers *licenciatura* degrees in Industrial Chemical Engineering, Industrial Mechanical Engineering, and Industrial Electrical Engineering. Despite these formal offerings, need for the knowledge and skills at the *licenciatura* level is limited in the sector, and even more limited for smaller businesses that are less likely to have this level of expertise inside their operations. Instituto Politécnico de Centroamérica has identified programs for Industrial Maintenance Technicians and Automatization Technologists to fill skills needs between PROCINCO offerings and *licenciatura* offerings, but it has not yet implemented them.

In Figure 19, we note a potential need for university technical-level training in production management (warehouse heads, quality control, production supervisors, heads of industrial manufacturing, heads of end product storage); textiles and fibers (embroidery supervisors); software development; electromechanics/industrial electronics (technicians in industrial maintenance, heads of robotics and industrial automation); industrial fashion and apparel design (industrial designers); industrial chemistry (technicians in industrial chemistry, head of input quality control); and drawing and technical drafting (industrial designers).

FIGURE 19. Textiles: Positions and Existing and Potential Career Offerings



HEALTH

In the health sector, reduced investment combined with increasing demand for services, particularly specialized care and treatment that includes use of advanced medical technology, creates pressure on the system. Honduras faces a similar situation to many developing countries, with a dearth of specialists at all levels; nurses who may not be patient-focused and who are trained to perform auxiliary rather than professional functions; and a lack of maintenance technicians trained in the repair of hospital and laboratory equipment, which play a particularly critical role because the sector is highly reliant on machines and equipment that provide accurate results. Hospitals and laboratories cannot assess a patient's health and provide appropriate care without accurately functioning equipment, the absence of which reduces the quality of care for patients across the country. Similarly, pharmacy technicians, who often play the role of a diagnosing practitioner to disadvantaged populations, do not have technical training and instead rely on the internal training processes of businesses to provide treatment to patients who cannot afford formal medical attention. Even private hospitals, which have more rigid internal training systems, are limited in the quality of care they can provide their patients because of the lack of patient-centered attitudes seen in those graduating from the health education system. In the immediate future, businesses and hospitals that can respond to these needs will only be for those who can afford them.

The limited financial resources allocated to the Honduras health care system largely define the capacity of those who work within the sector itself. In 2014, per capita spending on health care services in Honduras was $212 (U.S. dollars) in contrast to per capita spending in the United States of $9,403.[50] As a result of low expenditure by the Secretary of Health, about 30–40 percent of the population lack access to quality health care.[51] For every 10,000 inhabitants, Honduras has 3.3 generalist doctors and 2.1 specialists. There are 28 hospitals nationally with a total of 4,093 beds; 57 maternal and child clinics; 380 health care centers providing medical and dental care; and 1,097 rural health clinics and 4 emergency clinics, operated by the Secretary of Health. While the government provides 50–60 percent of health care coverage, an additional 16 percent is provided by the IHSS, and 10–15 percent by the private sector.[52]

A 2015 assessment by the IDB of human resources within the Secretariat of Health noted that between 2006 and 2010, the largest increase in health care personnel was a 34 percent increase in administrative positions. Indeed, a dramatic change appears to have taken place between 2009 and 2010, when generalist doctors also increased significantly and the number of technicians fell by nearly half. Comparatively and over the same time period, general physicians, nurses and nursing assistant positions grew insignificantly as noted in Table 5.[53] This has resulted in an over-worked and under-paid system, thus promoting external migration for trained nurses and doctors in order to receive better pay.[54]

[50] World Health Organization Global Health Expenditure database, http://apps.who.int/nha/database

[51] Inter-American Development Bank. Estudio de Gasto Público en Salud en Honduras en el Marco de la Iniciativa de Salud Mesoamérica 2015. http://www.iadb.org/WMSfiles/products/SM2015/Documents/website/Honduras%20SM2015%20-%20Estudio%20Gasto%20P%C3%BAblico%20en%20Salud.pdf

[52] Secretary of Health. Plan Nacional de Salud: 2014-2018.

[53] IDB, 2015.

[54] Tremethick, M. J., 52.

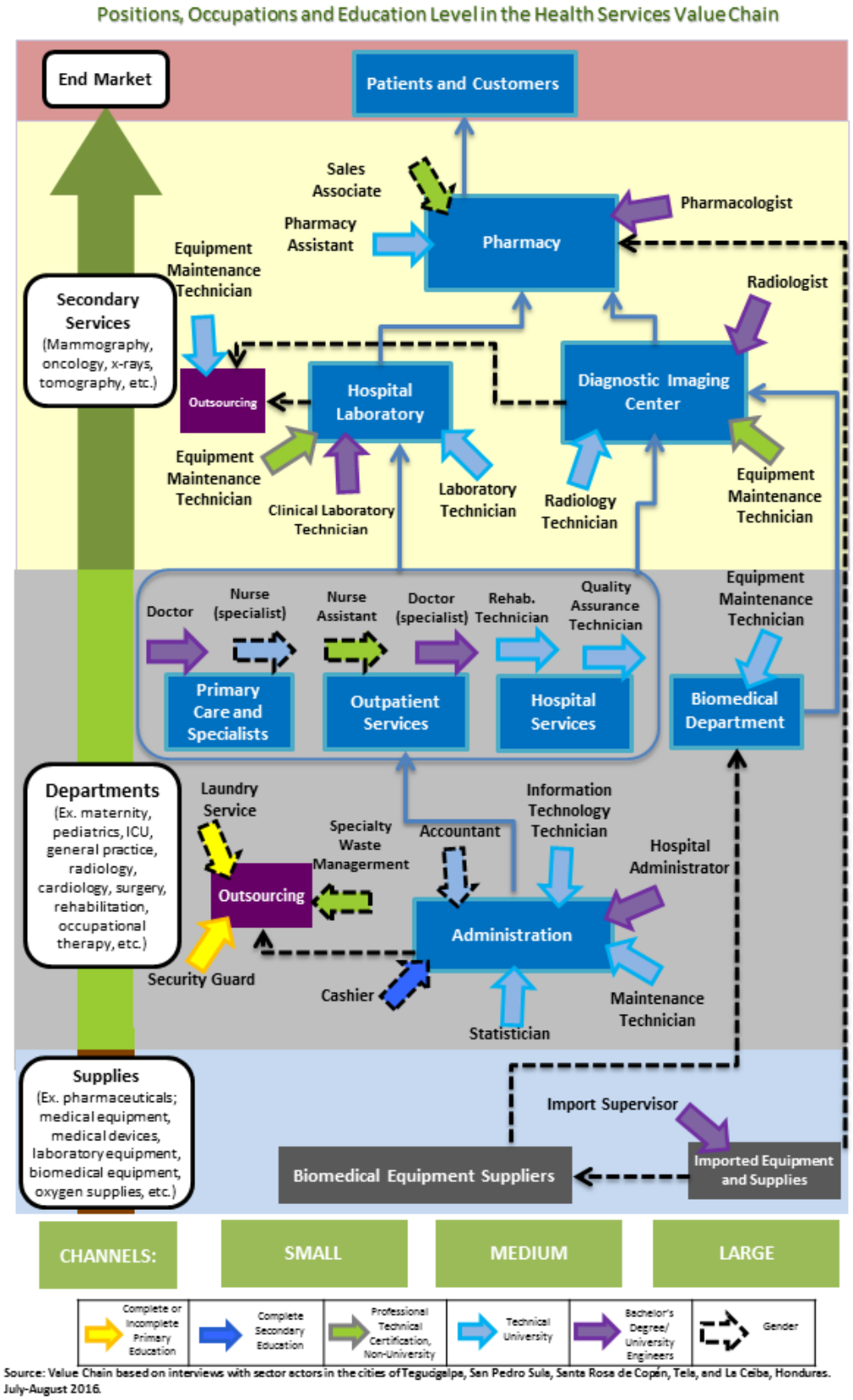
TABLE 5. Honduras: Human Resources in the Secretariat of Health

Year	Doctor (Specialist)	Doctor (General)	Nurse	Nursing Assistant	Technicians	Technicians (Environmental Health)	Service Technicians	Admin. and Office
2006	1,037	1,146	1,003	5,515	817	858	3,230	2,300
2007	1,100	1,150	1,068	5,572	891	1,383	2,664	3,090
2008	1,129	1,194	1,242	5,975	1,001	1,299	2,781	2,834
2009	1,179	1,244	1,295	6,323	1,075	1,299	2,848	2,838
2010	1,176	1,684	1,348	6,408	573	1,347	3,130	5,908

Source: IDB, 2015

A value chain map of health services is shown in Figure 20. Additional health sector value chains appear in Annex III.

FIGURE 20. Honduras Health Services Value Chain with Workforce Overlay



Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa, San Pedro Sula, Santa Rosa de Copán, Tela, and La Ceiba, Honduras. July-August 2016.

HEALTH: KEY POSITIONS AND SKILLS NEEDS

The health sector in Honduras is laden by structural problems of governance and administration from the Secretary of Health to universities and training institutions, and as a result, quality of care and service is poor and available only to those who can afford private care. A technical officer on FHI 360's LINKAGES project notes that much of what goes on in public institutions comes down to an attitude of defeat felt by doctors, nurses, and health administrators due to lack of supplies, training, personnel, knowledge sharing and support on both the government and institution side. In general, there is a lack of technical training within hospitals to use various machines and instruments, and no process for knowledge sharing and maintenance of teams and machines in public institutions. However, entrepreneurship opportunities may potentially be present in activities which are outsourced by the health sector, including security, laundry, waste management and laboratory and diagnostic equipment maintenance. Annex IV lists specific skills needs in the sector.

Doctors

Representatives of hospitals and medical centers in Santa Rosa de Copán, Tegucigalpa and La Ceiba all note that there are no values and ethics taught in universities and "no sense of vocation." Additionally, doctors are not trained to handle the unique needs of populations, particularly those of low socioeconomic status, thus affecting the quality of care. Doctors often do not know how to operate high-tech machines to attend to patients. There is a shortage of many specialists in the country, including medical pathologists (who develop and apply knowledge of tissue and laboratory analyses to assist in the diagnosis and treatment of patients; there are only 17 in the country) and respiratory physicians (as well as other respiratory specialists who would be able to, for example, treat pneumonia and have knowledge of mechanical ventilation techniques). One organization exists in Honduras that is registered and certified to perform open-heart surgeries.

Nurses

There are two levels of nursing in the country: 1) professional/university and 2) nursing assistant (auxiliaries). Existing nursing school programs are out of date, and nurses need to be retrained as many don't understand how to care for a patient when they leave school, but rather mostly understand how to take orders. Even within professional nursing programs, there's no specialization, a fact lamented by medical teams in La Ceiba. In terms of specific deficiencies, the representative in Tegucigalpa noted the following mix of skills, knowledge and attitudes:

- Not attentive to patient's and family's needs
- Lack of "service" attitude
- Lack of dedication to the profession (don't necessarily see nursing as a vocation)
- Lack of regard for patient safety
- Lack of quality control
- Lack of technical processes
- Lack of security training

Technical Staff

The need for formal education for technical staff in the health sector is evident, as the sector faces deeply rooted financial and social challenges that burden both patients and staff. While limited, the sector relies on the following technical programs for the country's health care:

Non-University, Technical Programs:

- Nursing Assistant (technical, non-university), offered by Nursing Training Center (CAE) and the Regional Human Resources Training Center.

University Technical Programs:

- Radiology Technician, offered by CAE
- Radio Technology and Radio Imagining, offered by UNAH
- Therapy Technician, offered by UNAH
- Clinical Laboratory Technicians, offered by the New Millennium Evangelical Christian University (UCENM) and the Christian University of Honduras (UCRISH)
- Nursing Operating Room Technician, offered by CAE

University *Licenciatura* Bachelor Programs:

- Community Health, offered by UCENM and UCRISH
- Nursing Degree, offered by UNAH; UNICAH
- Medicine and Surgery offered by UNICAH, UNAH, UNITEC
- Occupational Therapy, offered by UNITEC
- Nutrition, offered by UNAH, UCENM, UNITEC
- Speech Therapy, offered by UNAH
- Psychology, offered by UNAH, UNICAH, UCENM, UCRISH

Because of the limited number of technician training programs in the sector in general, pharmacies, hospitals, laboratories, and clinics have learned to rely on internal training programs to meet their needs, particularly in terms of specialized programs. For those programs that do exist, equipment is limited and technology often outdated. Employers such as medical laboratories must generally train internally, and also must contract from a limited number of machine maintenance technicians in the country, who often must travel across the country to perform repairs, based on the need of the client and expertise of the closest technician. A private hospital in Tegucigalpa also noted the lack of pharmacy technicians, so assistants, or would be techs, are also trained in-house and the challenges that arise in pharmacies as a result.

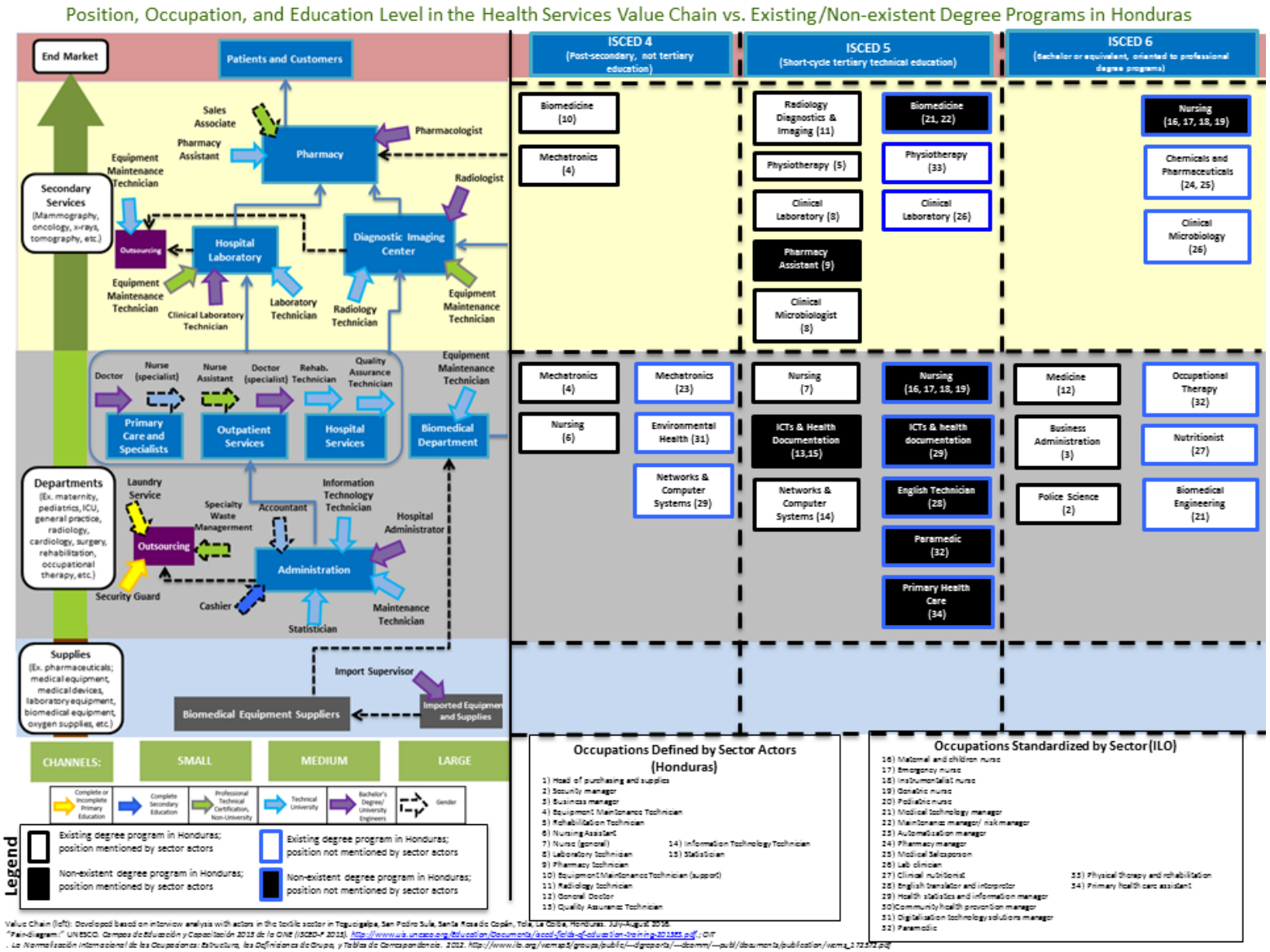
A medical supply distributor of largely imported products notes that they must send their technical staff to other countries for training. There is no association to support this need nationally, but these actors stated that there are other medical distributors in the country that would face this same problem.

HEALTH: HOW CAN EDUCATIONAL INSTITUTIONS SERVE THE SECTOR?

Figure 21, illustrating career and training options in the health service sector, is indicative of the structural problems that exist in the country's health system. Limited options on the technical level in a sector that receives scarce investment from the government is concerning, most notably for positions in nursing and in data information services. A lack of training for these two professions is reflected in the quality of service received by patients (nursing) and from the quantity of investment made by the government, which may be best understood now and in the future through additional statistical research and more effective training on this level. Additionally, pharmacy technicians often play an important role in health care for more economically disadvantaged populations, and therefore need formal training that does not currently exist in order to meet the needs of customers. For example, a pharmacy in La Ceiba noted that because many with acute pains simply go to the pharmacy to address their needs for immediate relief, as they cannot afford to go to a doctor. Pharmacy technicians, who have the most direct relationship with

customers due to the focus in sales, are essentially responsible for basic diagnosis for this population, which in some cases may be more serious.

FIGURE 21. Health: Positions and Existing and Potential Career Offerings



Value Chain (left): Developed based on interview analysis with actors in the textile sector in Tegucigalpa, San Pedro Sula, Santa Rosa de Copán, Tela, La Ceiba, Honduras. July-August 2018.
"Pain-diagram." UNESCO. Campos de Educación y Capacitación 2013 de la CINE (ISCED-F 2013). http://www.uis.unesco.org/Education/Documents/isced-fields-of-education-training-2013SS.pdf ; OIT
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CONCLUSIONS

It is a moment of rare opportunity in Honduras of steady economic growth, rising educational attainment and increasing investment. Investments in education that both align with the current needs of employers and anticipate future demand can help businesses and individuals meet their full potential, for the betterment of the country as a whole. By working backwards from current and projected market demand—as opposed to focusing on occupational mapping as is done in a traditional labor market assessment—FHI 360 has identified a number of transversal skills needs including both soft (e.g., communication) and technical (e.g., financial management) skills, as well as specific skills needs in the coffee, tourism, textiles and health sectors. Additionally, we have identified those occupations and potential occupations in the sectors for which there are currently no technical training programs at the university level.

The market requirements in each of the sectors examined here are shaping employment growth and the demand for skills.

- In the coffee sector, large international retailers are increasingly bypassing intermediaries and directly certifying producers, a change which will require both soft skills (e.g., negotiation and communications) and technical skills (e.g., quality control) at the producer level.

- Market conditions for tourism are difficult because of security issues; however, business tourism remains relatively strong. Employers mentioned the importance of English, unsurprisingly, but also familiarity with software (including social media platforms and accounting software) and web design.

- Textile producers are under pressure to respond to demand for their products at an increasing pace and scale, but as technological needs have changed in production and maintenance, employers reported a need for computer and software skills, and also—as many employees have lower levels of education—for a number of specific soft skills and higher-order thinking skills.

- In the health sector, reduced investment combined with increasing demand for services, particularly specialized care and treatment that includes use of advanced medical technology, creates pressure on the system. Honduras faces a similar situation to many developing countries, with a dearth of specialists at all levels; nurses who may not be patient-focused and who are trained to perform auxiliary rather than professional functions; and a lack of trained technicians, which are particularly critical because the sector is highly reliant on equipment and because, for example, pharmacy technicians often play the role of diagnosing practitioner to disadvantaged populations.

The four sectors detailed in this report were selected as a starting point. Our rigorous selection process also identified a number of additional promising growth sectors, laying the groundwork for local institutions to carry out analysis using the methodologies presented in this report, in order to update their knowledge on skills demand in these additional sectors and how educational offerings might be better aligned with employer needs. The Sistema de Educación Superior (SES), along with the country's technical training institutions, are some of the key stakeholders that will benefit from these findings and methodologies. Joint exercises with the SES and employers will build on the findings of this labor market

assessment, using tools including value chain mapping, to identify and develop curricula for existing and new two- and three-year technical degrees.

FHI 360's goal with this assessment is not only to help technical training institutions in Honduras revamp their offerings in the selected growth sectors, but also, more generally, to help decision makers learn how to identify and take advantage of economic opportunities by developing human capital, and to understand what the demand for skills might look like in the future. Ultimately, this process will serve to build local capacity for analysis and action that will reach far beyond the findings of this document.

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ANNEX I. HONDURAS COUNTRY DASHBOARD

HONDURAS

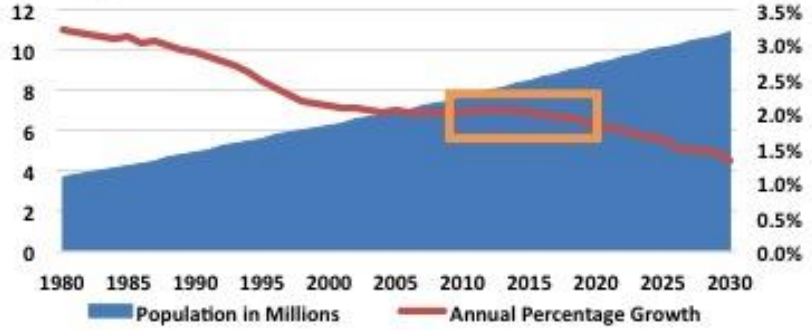
A DASHBOARD ANALYSIS OF DEMOGRAPHIC, ECONOMIC, EMPLOYMENT, EDUCATION AND LABOR MARKET

Honduras

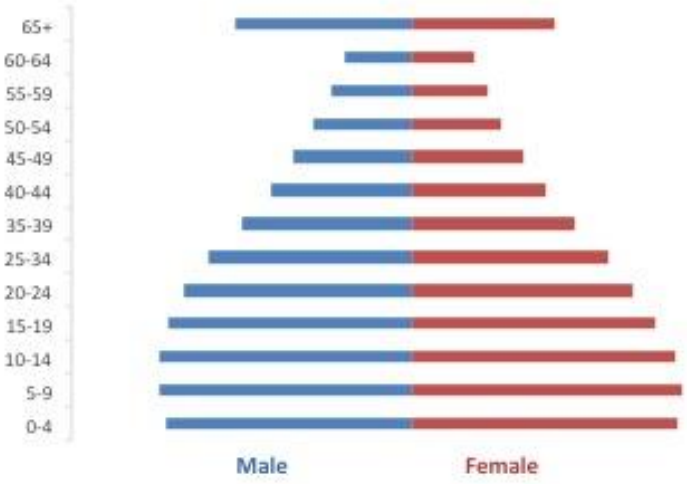
What are the major demographic trends?

53% of the 8.6 M 2015 population live in urban areas (INE).

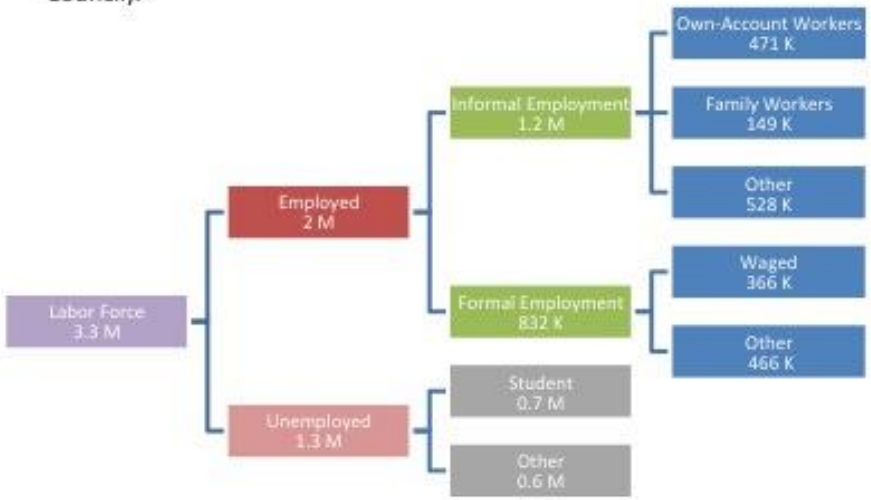
The population growth rate is estimated to remain stable around 2% for the coming years (IFS).



Working age youth (15-29) represent 29.5% of the total population, and 30.5% of the working age population (15-69) (INE).



Of the total employed population, 58% work in the informal sector, and only 44% of those who work in the formal sector receive wages (LO/FTF Council).

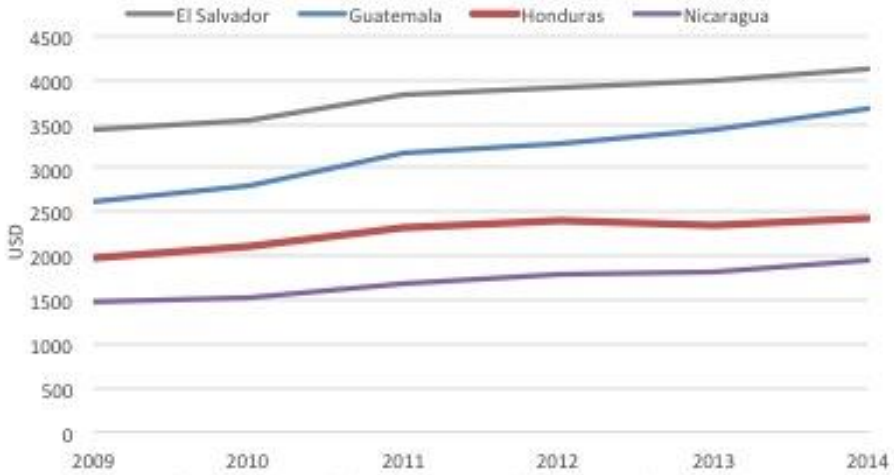


Honduras

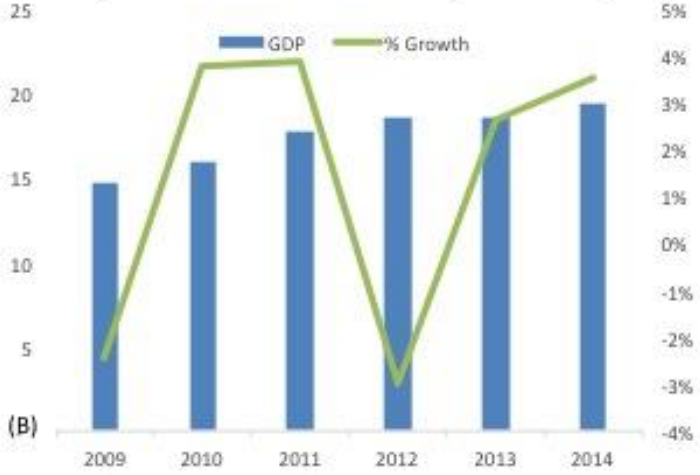
What are the major economic trends?

Economics	Human capital	Policy
Growth		

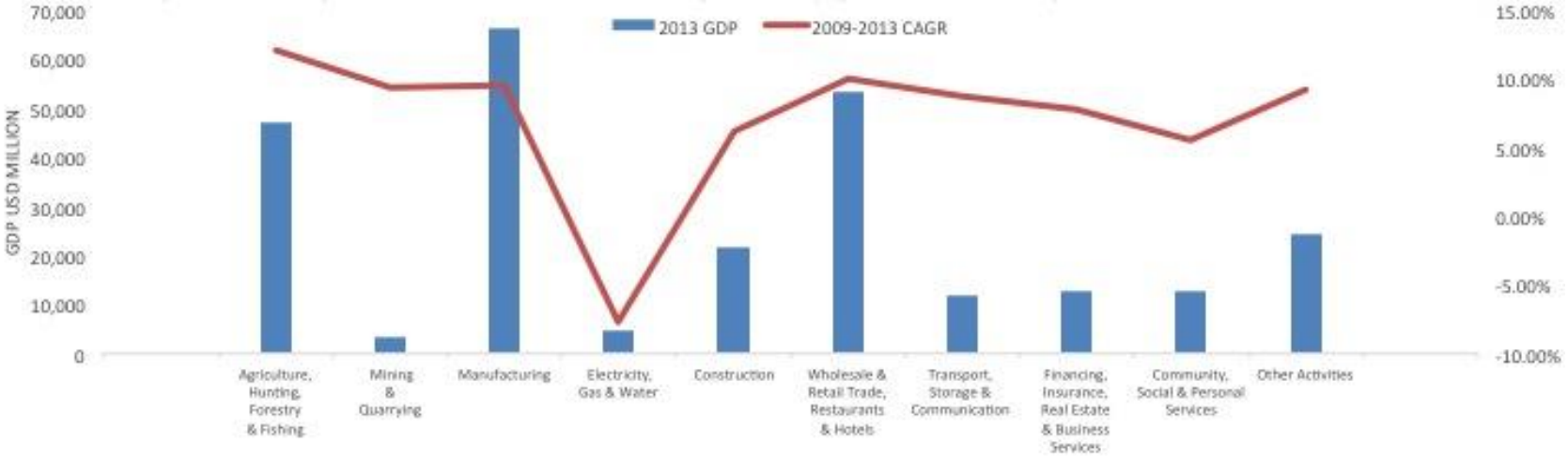
Honduras' GDP per capita is low for the region, with minimal growth since 2011 (WDI).



Honduras' GDP has experienced volatile growth patterns, but has grown more than 2.5% annually since 2013 (WDI).



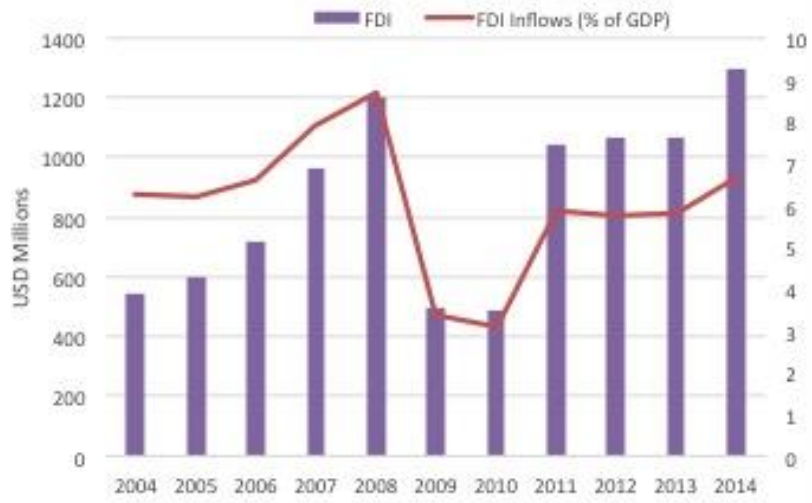
In 2013, Manufacturing, Wholesale & Retail Trade, and Agriculture were the highest contributors to GDP. The average annual growth rate (CAGR or compound annual growth rate) of all sectors excluding electricity, gas and water, was positive between 2009-2013. (WDI/INE).



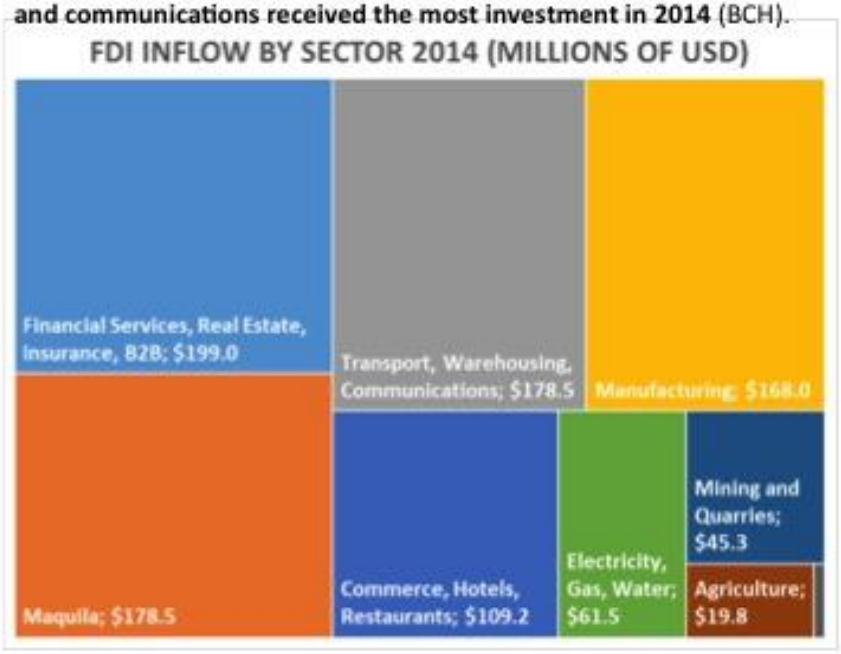
Honduras

What are the investment trends?

Despite a drop in 2009-2010, foreign direct investment in Honduras has regained its upward trajectory (WDI).

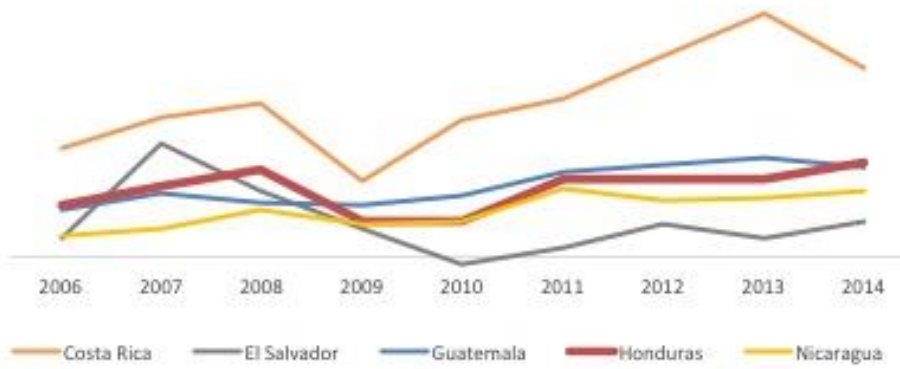


Financial services/real estate, maquilas, and transport, warehousing and communications received the most investment in 2014 (BCH).



The US is Honduras' primary foreign investor. While flows from North America and Europe have recently decreased, flows from Latin America and other countries have increased (BCH).

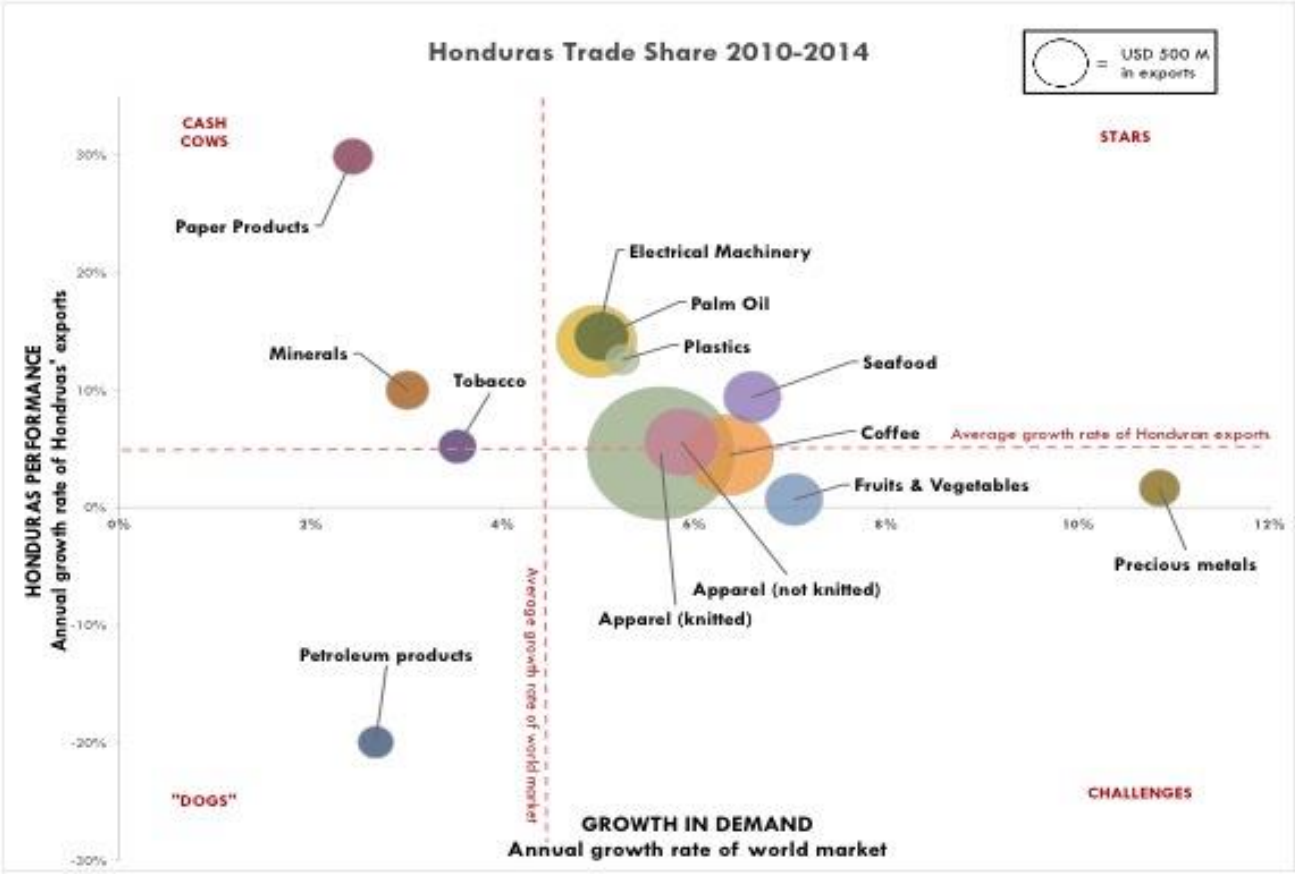
FDI in Honduras (comparable to Guatemala) has been steadily increasing since 2010. (WDI).



Honduras

What are the trends in relative market share and market size of exports?

The Growth-Share Matrix compares the growth rate of individual markets within Honduras to the size and growth of global market shares. Apparel and coffee remain staple exports to the world market, while dynamism is seen in articles of iron and steel, where Honduras is gaining market share in growing markets. (GTA)



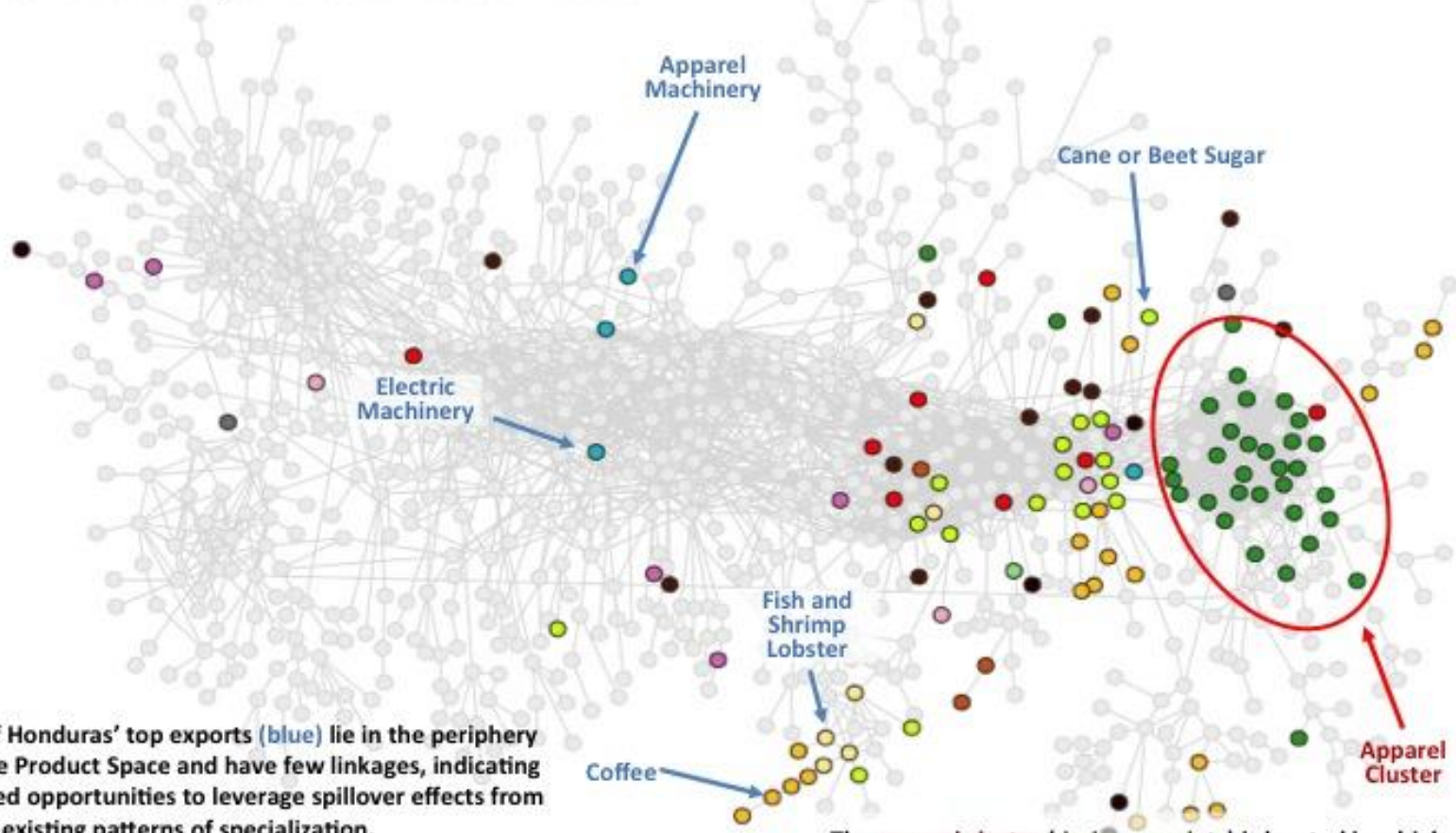
Honduras

How can Product Space analysis improve sector selection?

Economics	Human capital	Policy
Diversification		

$7.59B USD

Product Space analysis indicates that products in the central, dense portion of the space offer the greatest potential for growth and diversification due to spillover effects into related industries.



All of Honduras' top exports (blue) lie in the periphery of the Product Space and have few linkages, indicating limited opportunities to leverage spillover effects from their existing patterns of specialization.

The apparel cluster (dark green dots) is located in a high-density location. Expansion of the apparel sector may therefore have wider implications for growth.

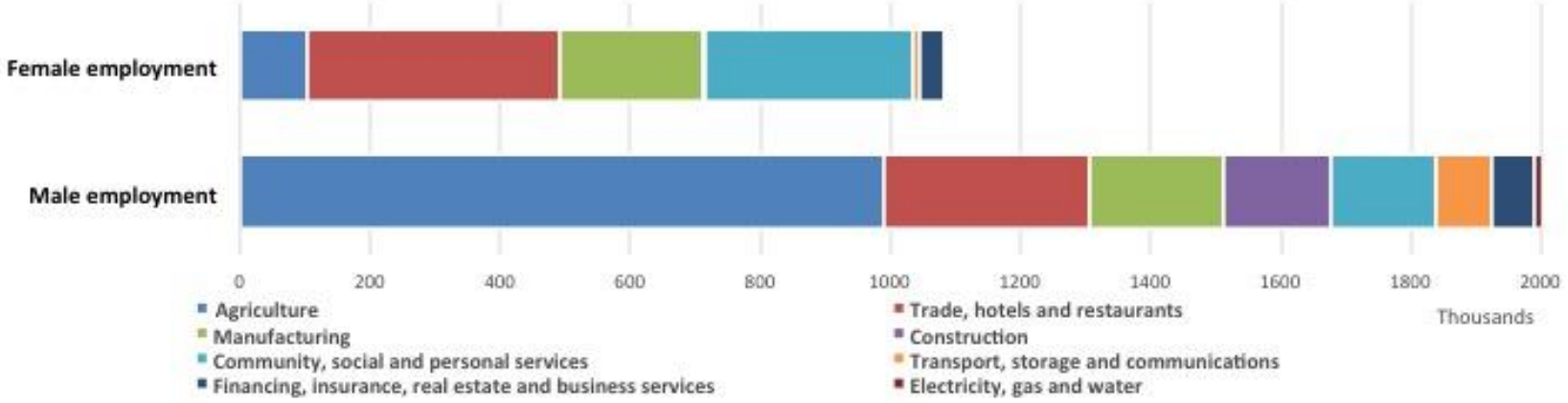
MIT Observatory of Economic Complexity

Honduras
Where is employment/unemployment highest?

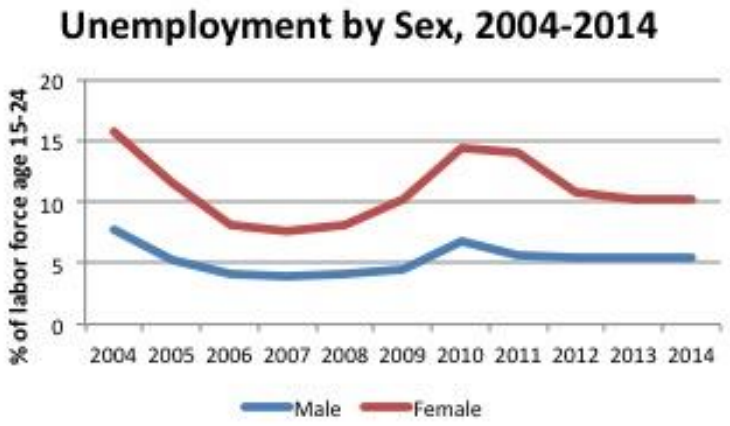
Economics | Human capital | Policy

Employment

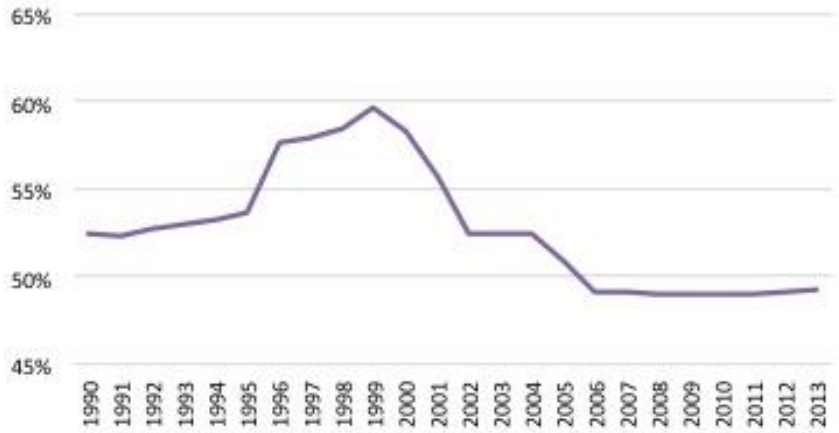
In 2011, male employment was greatest in agriculture, while female employment was greatest in wholesale/retail trade, restaurants, and hotels (LO/FTF).



Female youth are about twice as likely to be unemployed as males, and this gap increased during the 2009-10 recession (ILO).

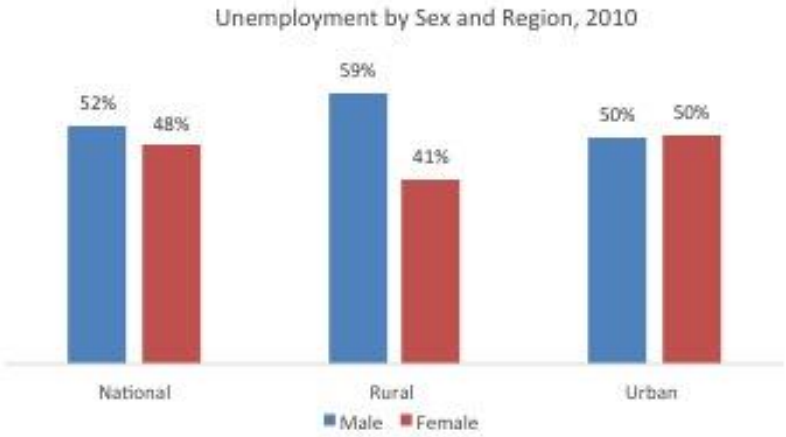


The labor force participation of youth (15-24) is the lowest in 25 years (WDI).

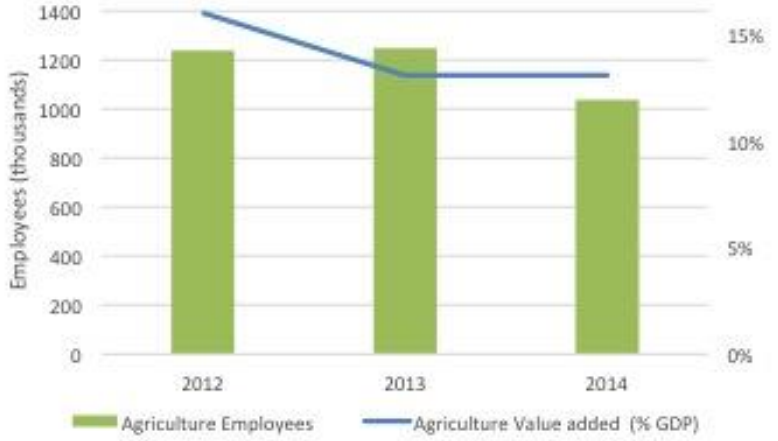


Honduras
Where is employment/unemployment highest?

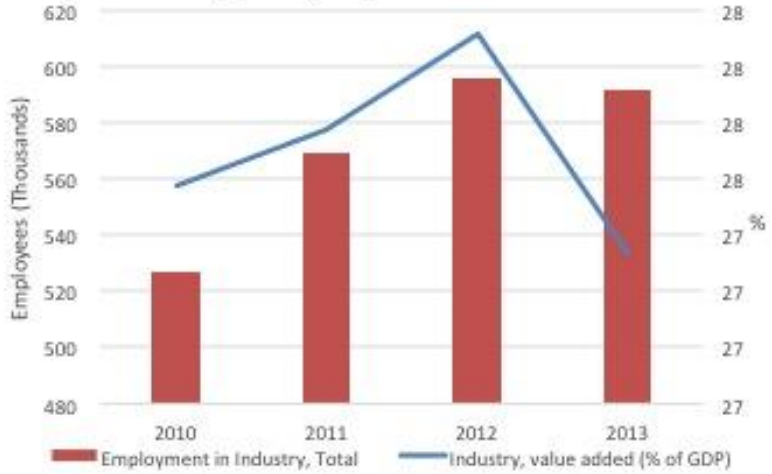
Males make up nearly 60% of the rural unemployed, whereas males and females are equally likely to be unemployed in urban areas (ILO).



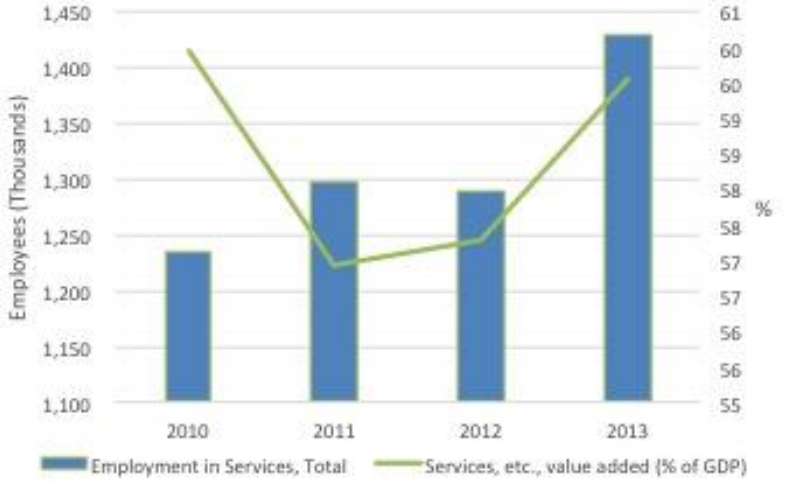
Employment fell and value add as % of GDP stagnated for the agriculture sector during 2014, plausible effects of the El Niño drought and Roya (coffee leaf rust).



Employment and value add as % of GDP fell slightly for the industry sector during 2013 (WDI).



Employment and value added as a % of GDP increased in 2013 in the service sector, after falling in 2011-2012 (WDI).



Honduras

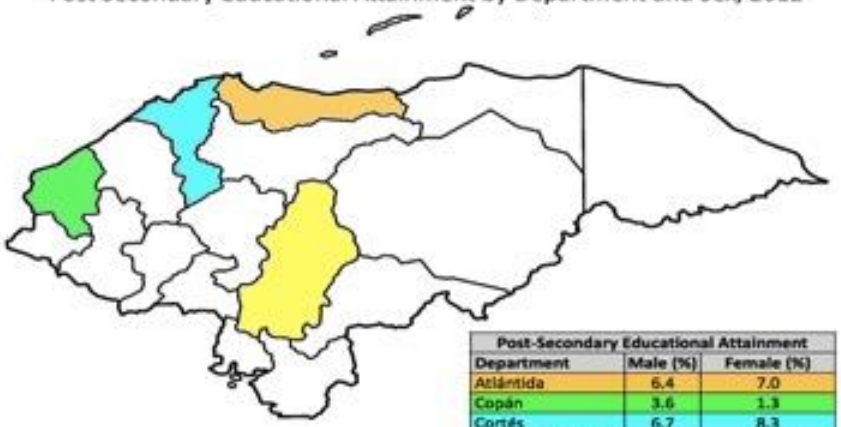
What level of education is attained nationally?

Economics | Human capital | Policy

Education

Post-Secondary Educational Attainment remains low in areas of high poverty and high violence (EPDC).

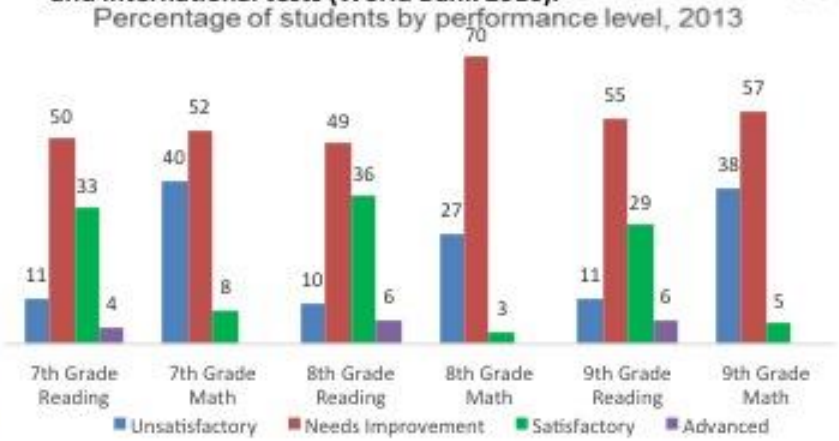
Post Secondary Educational Attainment by Department and Sex, 2012



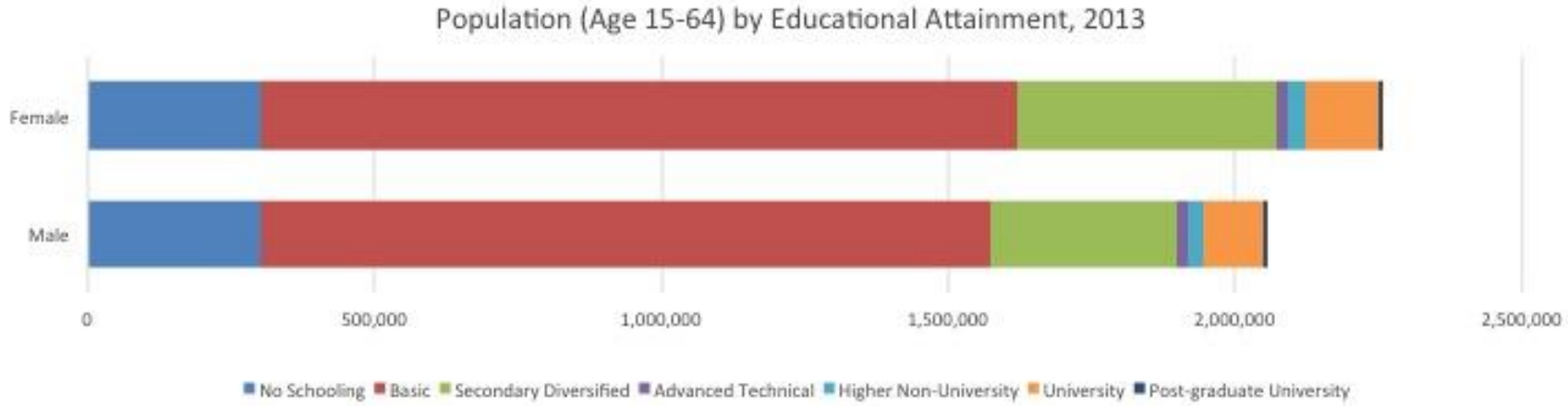
Post-Secondary Educational Attainment		
Department	Male (%)	Female (%)
Atlántida	6.4	7.0
Copán	3.6	1.3
Cortés	6.7	8.3
Francisco Morazán	14.2	14.1

The majority of Honduran students do not achieve grade-appropriate literacy and numeracy as measured by national and international tests (World Bank 2016).

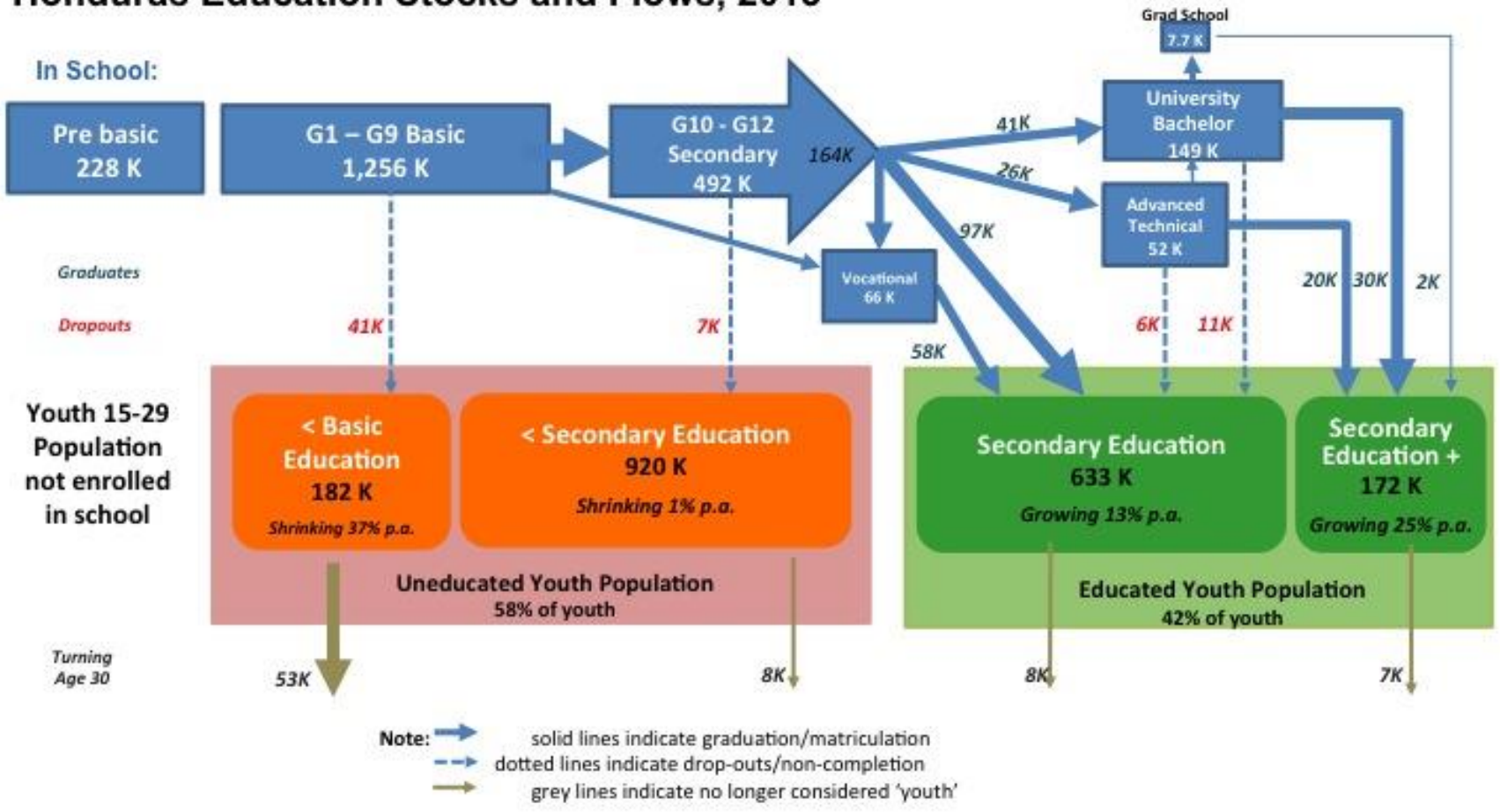
(%)



The majority of the working age population has a basic education or less. (INE 2013).



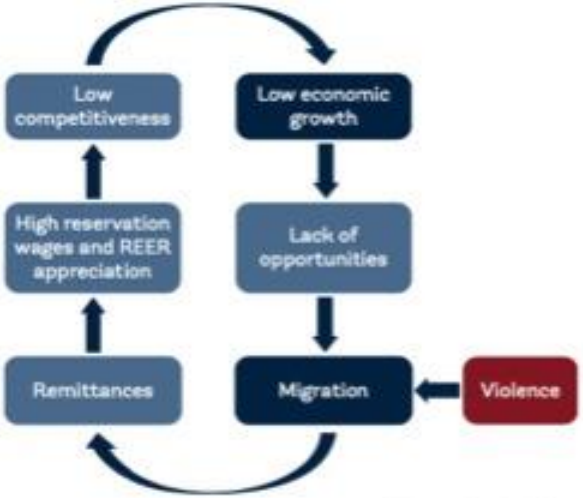
Honduras Education Stocks and Flows, 2013



Honduras

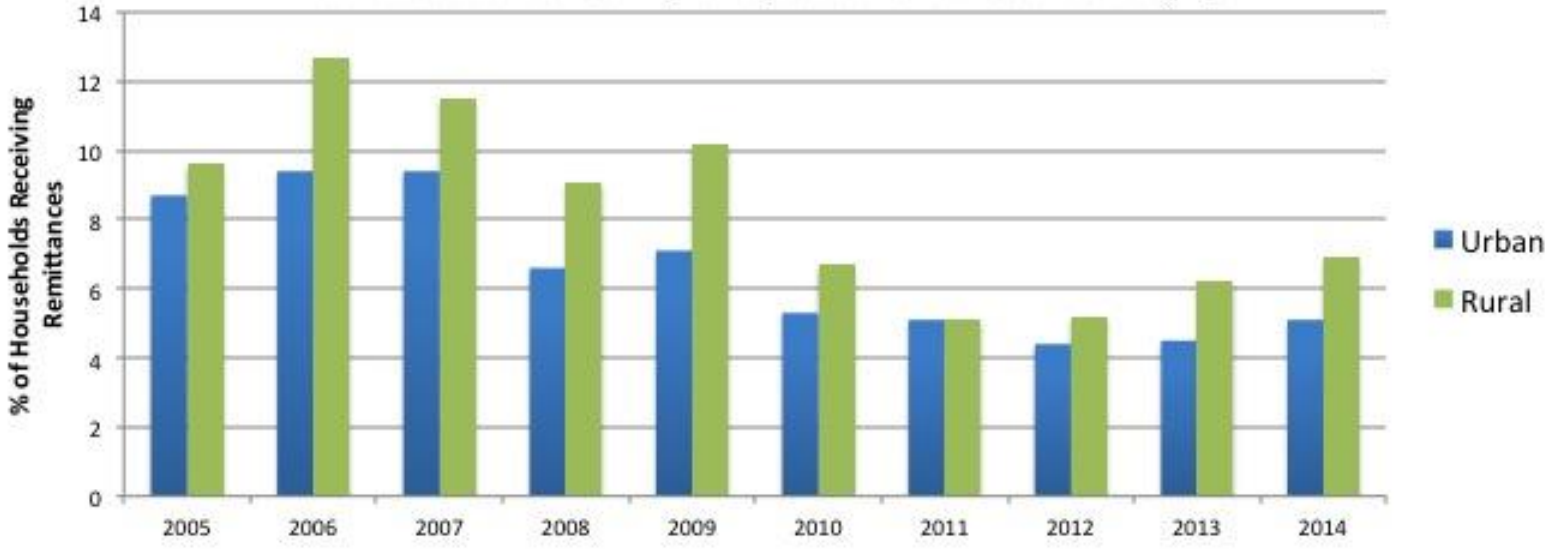
Economics	Human capital	Policy
	Migration	

Low growth and migration leads to a vicious cycle.



24.4% of those with higher education and 3% of Honduran doctors are leaving the country for opportunities elsewhere (WB, 2010).

Rural households have been higher recipients of remittances since 2005 (INE).

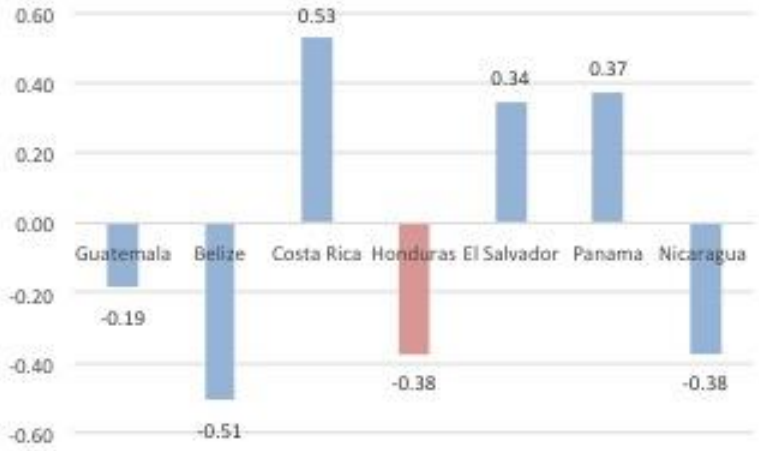


Honduras

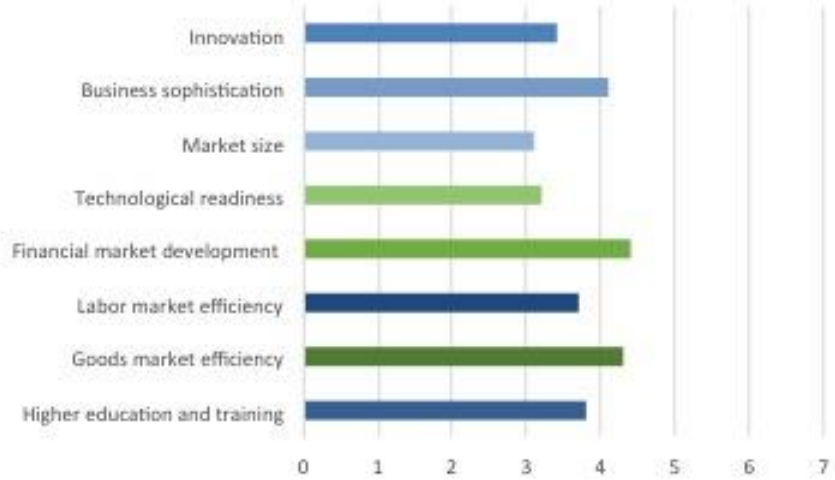
Economics	Human capital	Policy
		Private & Public

How does policy impact opportunities?

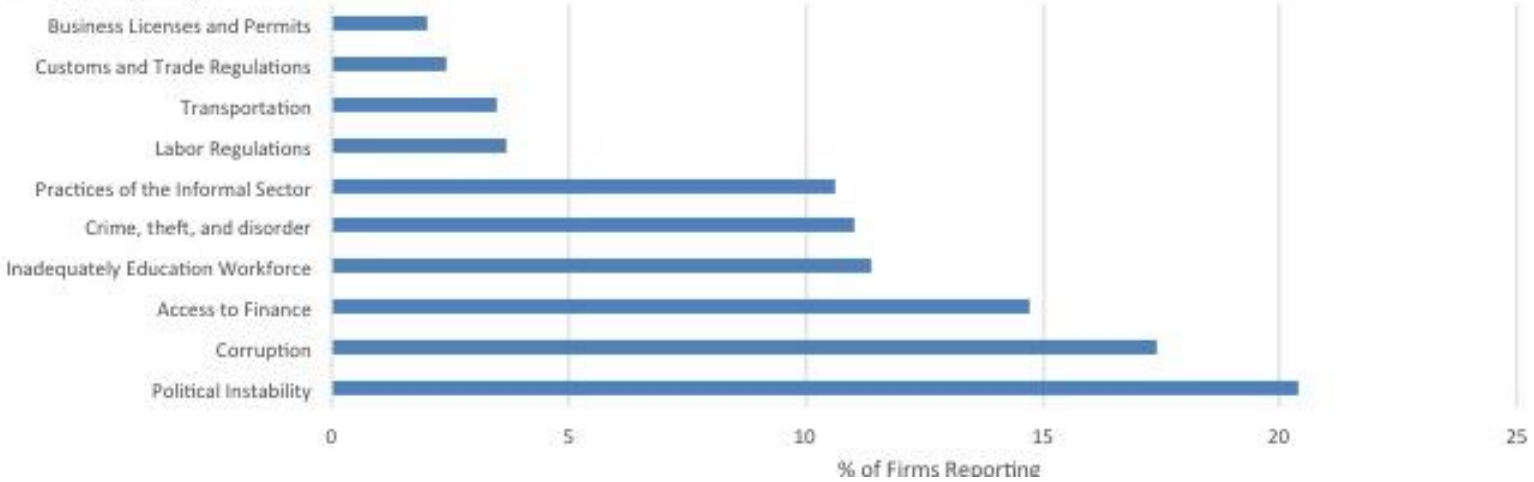
Honduras' government is perceived to be weak in its ability to formulate and implement sound policies and regulations that permit and promote private sector development (WGI 2014).



Honduras ranks 88 out of 140 countries on the Global Competitiveness Index (WEF).



Honduras ranks 110 out of 189 economies on the Ease of Doing Business Scale (WB) due in part to high a reporting of political instability and corruption (WES).

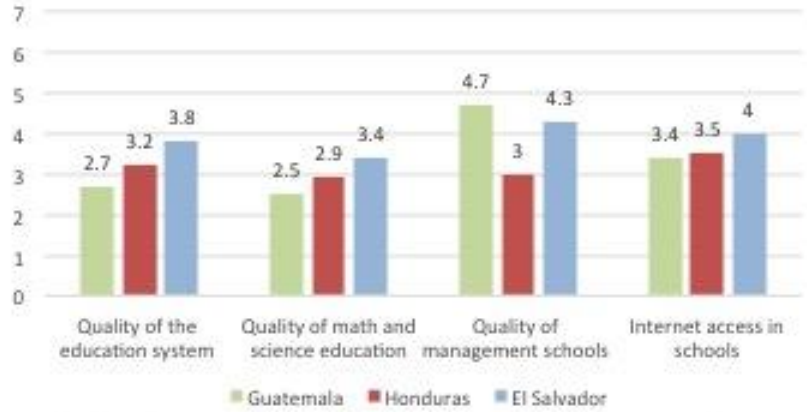


Honduras

Economics | Human capital | Policy | Labor Market

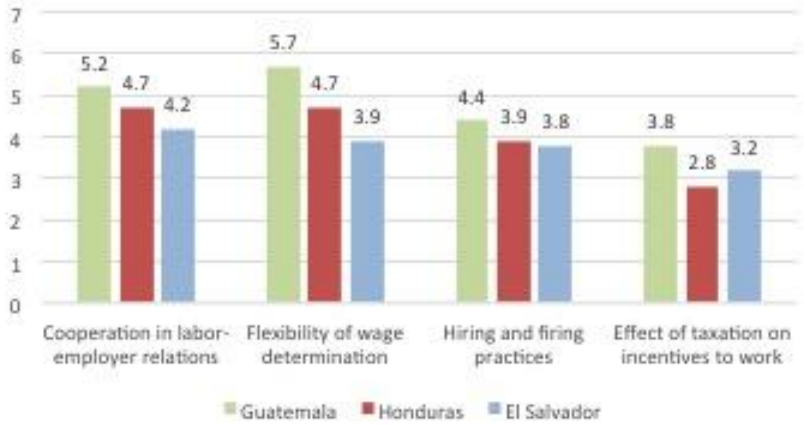
How competitive is Honduras in terms of Education and Training and Labor Market Efficiency?

Under the Higher Education and Training category of the Global Competitiveness Index, Honduras ranks 93 out of 140 countries on the quality of education…

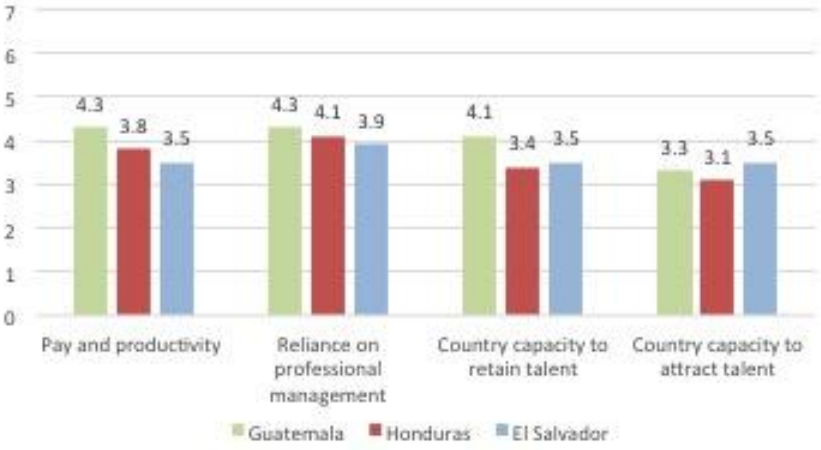


… and 46 out of 144 countries for on-the-job training.

Under the Labor Market Efficiency category, Honduras ranks 98 out of 140 countries in flexibility...



… and 118 out of 140 countries on the efficiency of using talent (WEF).



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ANNEX II. INTERVIEW QUESTIONNAIRE

Guía Final para las Entrevistas de la Cadena de Valor
D= Director; G= Gerente; GRH=Gerente de Recursos Humanos; E=Empleado.

A. *¿Puede brindarnos una breve descripción de la empresa, su propiedad, y las operaciones en el país?*

1.) Datos básicos sobre los departamentos donde trabajan en Honduras, ventas nacional e internacional; cuantos empleados tienen en total, etc. **(D)***
2.) ¿Dónde se ubica la empresa en el mapa de la cadena de valor? (*mostrar mapa*) **(D)***

B. *Productos Principales:*

1.) ¿Cuáles son sus productos y mercados principales? Hay un enfoque en la producción nacional frente a los mercados de exportación? **(D)***
2.) ¿Cuáles son las formas en que usted vende su producto (salidas en los canales de distribución)? ¿A quién le vende? **(D)***

C. *Estructura de producción:*

1.) ¿Cuáles son los componentes principales de producción? **(D)***
2.) ¿Cuáles son los canales de mercado clave?
   a. ¿Cómo fluyen los productos del importador al minorista al usuario final?
   b. ¿Quiénes son actores principales, tales como exportadores, distribuidores, mayoristas, procesadores, proveedores de servicios de alimentos y minoristas? **(D)(G)***
3.) ¿Trabajan con otros servicios de apoyo, técnicos, empresas de logísticos, etc.?
   a. ¿Estos servicios que vienen de afuera incluyen individuos? ¿En qué parte de producción? **(D)(G)***
4.) Basándose en el tamaño de una empresa, ¿cómo cambia el proceso de producción? (productores artesanales vs. PYMEs vs. grandes empresas?) **(G)***
5.) ¿Cuáles son las principales limitaciones que afectan a la productividad (habilidades, los costos de energía, ambiente de negocios, etc.)?
   a. ¿Cómo pueden ser abordadas por la industria y el gobierno? **(D)(G)(E)***

D. Estructura y competencias de la fuerza laboral:

1.) ¿Cuáles son los puestos/posiciones técnicas dentro de su empresa que garantizan el éxito de los productos o servicios? **(G)(GRH)(E)***
   a. ¿Cuántas personas emplean en las posiciones técnicas antes referidas?
   b. ¿En qué parte de la cadena de valor funciona el puesto? **(G)(GRH)***
   c. ¿Cuáles de estos puestos son ocupados por mujeres? **(G)(GRH)***
2.) ¿Qué nivel de educación es necesario para los otros puestos claves para llevar a cabo su trabajo? (Educación Básica completa o incompleta; Educación Secundaria completada; Certificación Técnica Profesional; Técnico Universitario (carreras de 2 a 3 años); Carreras de 4 a 7 años (Licenciaturas) **(G)(GRH)***

3.) ¿Cuáles son las competencias (conocimientos, habilidades, destrezas y valores) requeridas en los puestos técnicos por su función en la cadena de valor? **(G)(E) ***
4.) ¿Cuál a su juicio son las limitaciones en competencias que presenta en la actualidad las personas que están ocupando puestos o posiciones técnicas? **(E)***

E. *Reclutamiento*:

1.) ¿Cómo se desarrolla el proceso de reclutamiento y selección de personal? **(G)(GRH)**
2.) ¿Qué obstáculos existen en el desarrollo del proceso de reclutamiento y selección? **(G)(GRH)***
3.) ¿Cuáles son los criterios que califican a una persona para ingresar a su institución? **(G)(GRH)***
4.) ¿Tiene problemas para encontrar empleados apropiadamente capacitados? Explique. **(G)(GRH)***
5.) ¿Qué competencias técnicas demandan en su empresa en cada puesto? ¿Puede ampliar enfocando en puestos técnicos? **(G)(E)** *
6.) ¿Cuáles son las habilidades interpersonales que demanda su empresa en cada puesto?* **(G)(GRH)(E)***
7.) ¿Qué esfuerzos se están desarrollando para compensar estas debilidades? **(G)(GRH)***
    a. ¿Estos esfuerzos están siendo liderados o abordados por la industria? **(D)***

F. Educación Técnica:

1.) Pensando en los puestos que requieren educación técnica terciaria…
    a. ¿De dónde vienen sus trabajadores que tienen una educación técnica terciaria? ¿Hay una razón por eso? **(G)(GRH)***
2.) ¿Según su percepción, cuáles instituciones son los mejores? ¿Por qué? **(G)(GRH)***
3.) ¿Cuáles son los principales déficits de habilidades de estos trabajadores? (habilidades técnicas y las habilidades blandas). **(G)(GRH)***
4.) ¿Cuál es, en su caso, la interacción que tiene con los institutos de formación locales, universidades / escuelas técnicas? **(D)***

G. Hacia el futuro…

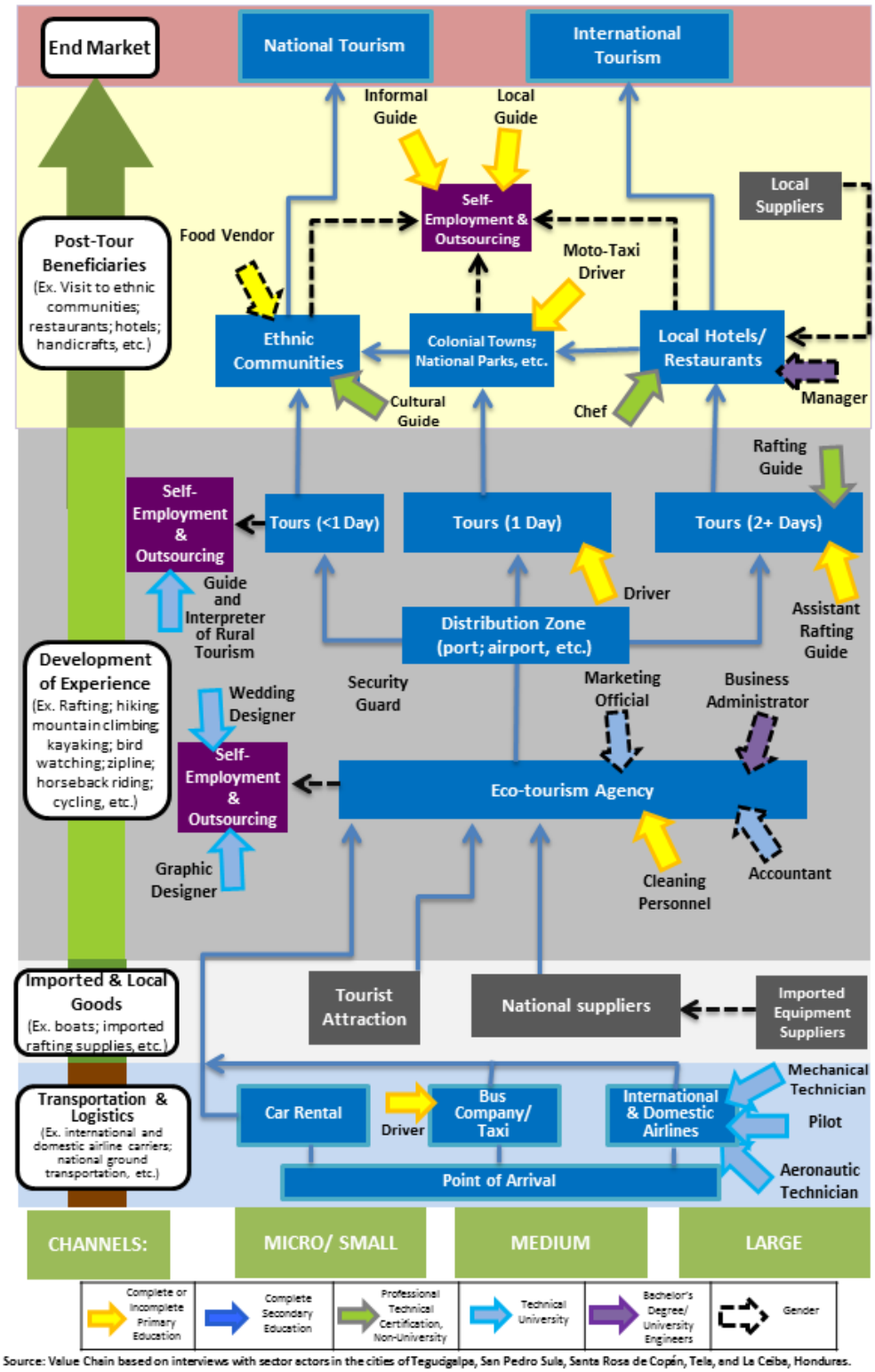
1.) ¿Cuáles puestos técnicos tendrán mayores oportunidades de empleo en su organización en el futuro? **(G)(GRH)(E)** *

H. Para terminar…

1.) ¿Tiene otros comentarios adicionales que no hemos discutido? **(D)(G)(GRH)***
2.) ¿Hay otros actores de esta cadena de valor que considera que deberíamos hablar? ¿Me podría dar referencias? **(D)(G)(GRH)***
3.) ¿Concretamente, me puede recomendar un experto del sector que puede brindar más información? **(D)(G)(GR)**

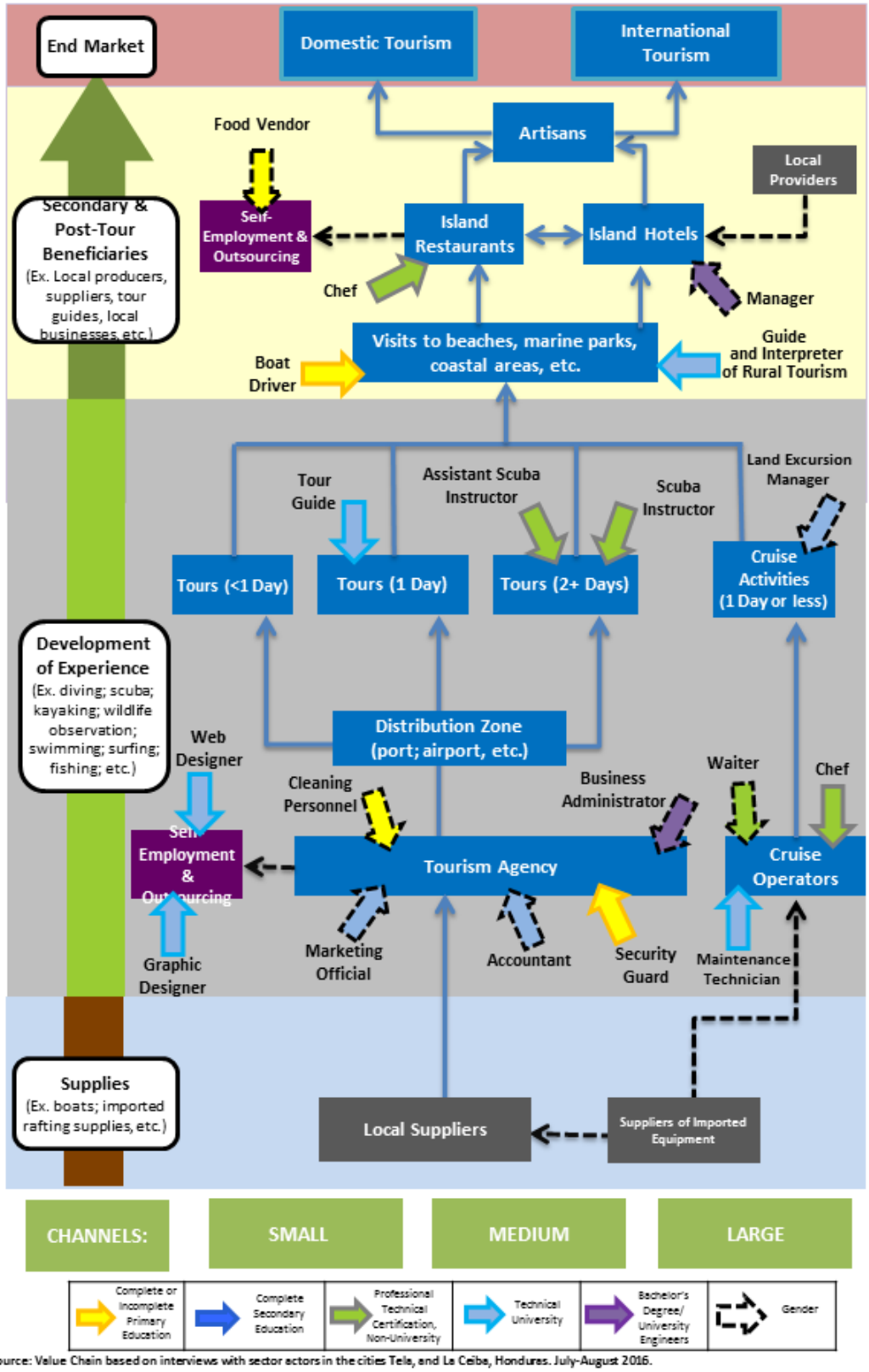
ANNEX III. ADDITIONAL VALUE CHAINS

Positions, Occupations and Education Level in the Eco-Tourism Value Chain



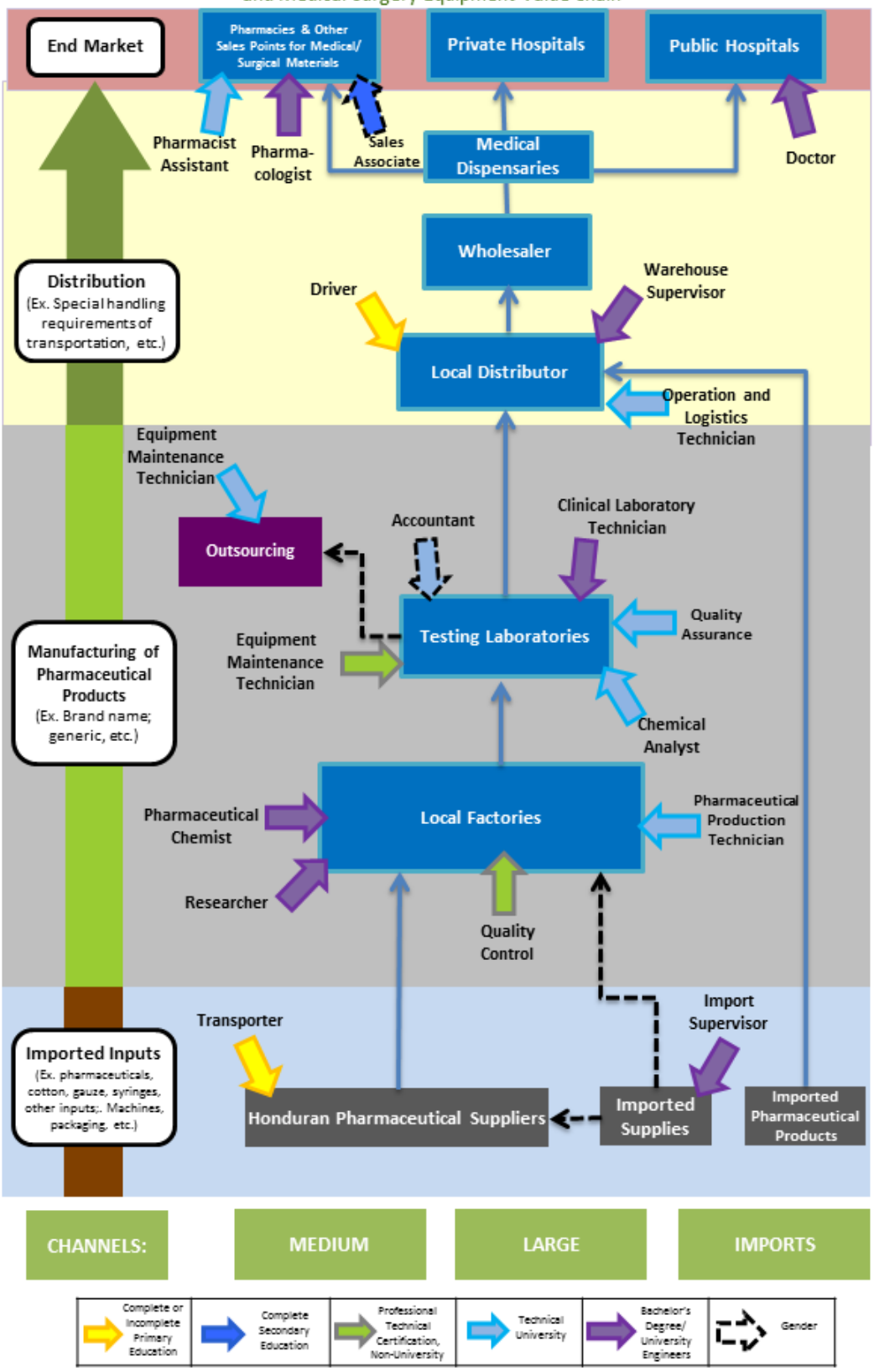
Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa, San Pedro Sula, Santa Rosa de Copán, Tela, and La Ceiba, Honduras. July-August 2016.

Positions, Occupations and Education Level in the Beach Tourism Value Chain



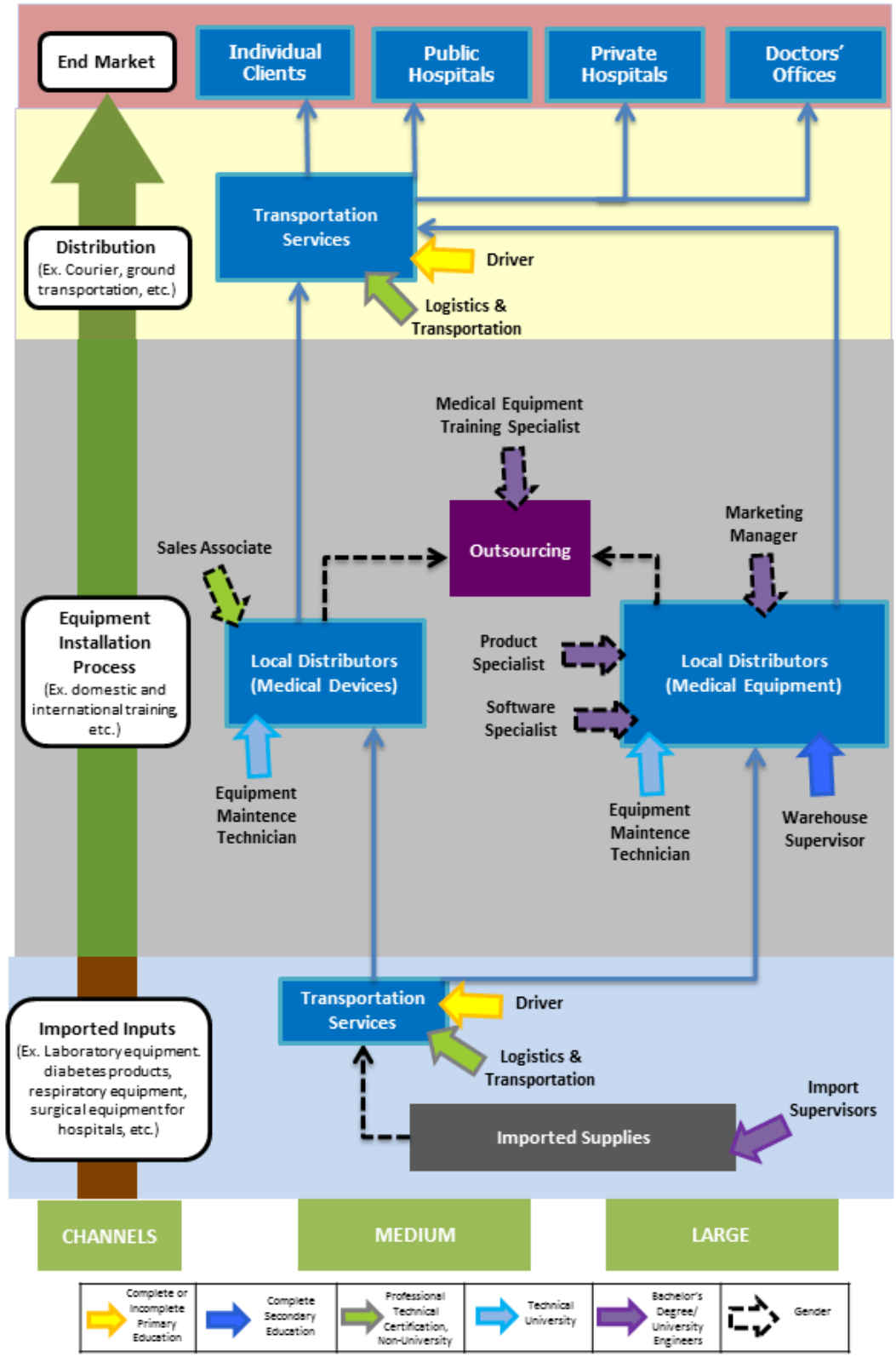
Source: Value Chain based on interviews with sector actors in the cities Tela, and La Ceiba, Honduras. July-August 2016.

Positions, Occupations and Education Level in the Pharmaceutical and Medical Surgery Equipment Value Chain



Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa and La Ceiba, Hondures. July-August 2016.

Positions, Occupations and Education Level in the Medical Devices and Medical Equipment Value Chain



Source: Value Chain based on interviews with sector actors in the cities of Tegucigalpa, San Pedro Sula, Santa Rosa de Copán, Tela, and La Ceiba, Honduras. July-August 2016.

ANNEX IV. THE ECONOMIC DIVERSITY INDEX

The main function of the Economic Diversity Index is to indicate those sectors for which, if Honduras could expand production (exports), the average "economic complexity" of Honduras would grow the most. Hausmann and Hidalgo show that countries that move along that pathway, producing more sophisticated and therefore more valuable, expensive products, have higher growth rates. The index is a much better predictor of future GDP growth than, for example, the Global Competitiveness Index.

Economic Diversity Index for Selected Sectors in Honduras

Sector	Economic Diversity Index
Coffee	24
Business Services/ICT (Call Centers, BPO, Software)	65
Light Manufacturing (Cables, Auto Parts…)	86
Textiles & Apparel	40
Health Care (Services, Pharma, Devices)	90
Fruits & Vegetables	24
Tourism	30
Machinery	72
Plastics	60
Cacao & All Products Related to Chocolate	42
Articles of Iron & Steel	70
Milk Products	48
Seafood	24
Construction	42
Palm Oil	24
Chemicals	63
Paper & Packaging	58
Furniture & Other Forest Products	66
Logistics (Transport & Storage)	42

To make it easy to interpret, the index has been normalized so that lowest score is 0 and the highest score is 100.

In general, the products with the highest scores for Honduras are those that have a high product complexity (PCI) and a low RCA—that is, Honduras does not export very much yet. They also have medium "distance," meaning it is a bit of a stretch to produce it in Honduras, but not an enormous leap—it is a feasible jump given our current portfolio of skills and capabilities. In general, the product increases our diversity in the right direction (in the direction of products that make us wealthier). Simply increasing diversity randomly does not necessarily improve the sophistication or value of products produced.

A score of 100 (which was earned by “Machinery for agricultural processing”) indicates that it would increase our diversity, and it is feasible. The lowest score (of 3) is for coconuts. Our RCA is also low, and it would be easy to produce (distance is low), but the PCI is too low to make it worth it to diversify in that direction. For service sectors such as tourism, logistics and health care, a value was qualitatively estimated.

Note that this does not take into account growth trends in markets. Two other indicators, Growth in Relative Export Market Size for 2010–2014 and Growth in Relative Export Market Share for 2010–2014, provide a perspective on whether export markets in the recent past have grown, and whether Honduras has a growing share of those markets (these are the horizontal and vertical axes of the Trade Share Matrix). And the 5-year Export Growth Potential also focuses on export market trends. The Economic Diversity Index looks exclusively at whether successful production/exports of the product moves Honduras in the direction of a more complex, high value-added industrial structure. Among all of the indicators in the sector selection matrix, this one probably comes closest to a proxy for innovation.

ANNEX V. SKILLS BY SECTOR

Key informants were consulted in the different sectors, subsectors and chains regarding the human resources necessary to carry out the function of various positions identified in the value chain. The results of this analysis are grouped below according to generic competencies that frequently cross and are demanded by employers (e.g., language dominance; basic math; computer science; second language dominance) as well as technical skills or sub-competences that may be more specific to each occupation, but can also be identified as important across sectors. Finally, the analysis identifies leadership skills that are important to interpersonal relationships and management in a work environment.

The analysis is complemented by information regarding limitations and opportunities that exist between labor demand of human resources (competencies, sub-competencies, soft skills) and training institutions that work in this space. This balance allows for an understanding of gaps that should be complemented by a curricular design, redesign, or adaptation.

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
Health Services	Maintenance Technician		1. Installation and repair of electromechanical equipment 2. Electrical installations and repairs 3. Fluid flow installations and repairs	1. Teamwork 2. Professional ethics	Poor qualification of labor, formed in vocational technical education systems
	Accountant		1. Inventory management 2. Accounting catalogue management 3. Management of income statements and balance sheets		The majority of those hired as accountants are mid-level professionals who have been trained in manual and non-computerized accounting.
	Technical Medical Team Assistant	1. Management and dissemination of knowledge with health personnel	1. Knowledge of the equipment and its potentialities of use 2. Biomedical equipment	1. Ethics at work 2. Leadership 3. Communication with different audiences and	The majority of hiring is for those with Biomedical Engineering degrees; there is currently no technical program

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
		2. Promotion and sale of medical equipment 3. English proficiency at conversational level 4. Ability to drive vehicles	maintenance 3. User training for medical equipment	actors 4. Self-Initiative 5. Availability to carry out maintenance activities in customer facilities	at the university level, but it does exist at the technical vocational level.
	Rehabilitation Technician				At present this is not identified as a career, but it is demanded in the cardiology and rehabilitation units of small and medium hospitals.
	Nursing Assistant	1. Management of office registration documentation procedures	1. Management of medical documentation and archives for health systems	1. Effective communication between hospitals and patients	Nursing helpers have been adapted for this task, which requires post-secondary, non-university education.
	Nurse	1. English proficiency (conversational)	1. Epidemiological knowledge 2. Application of family health and community health techniques for the control of disease	1. Service-oriented attitude 2. Proactive	Specialization in nursing is a necessity within hospitals and clinics for specialties such as a technical nurse in instrumentation, pediatrics and rehabilitation.
	Technical Medical Team Assistant		1. Maintenance of biomedical equipment inside the hospital	1. Desire to learn	Position functions as a biomedical assistant, trained by the biomedical engineer.
	Radiology		1. Management of	1. Service-oriented	Devices and technology that

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
	Technician		procedures in radio imaging techniques	attitude	students learn in the classroom are outdated.
	Laboratory Technician	1. Management of office tools	1. Sampling 2. Microscopy, counting and cell identification	1. Service-oriented attitude	Most of the skills training is provided by clinical analysis services.
	Pharmacy Assistant	1. Management of office tools	1. Knowledge of pharmaceuticals 2. Retail sale of medicines	1. Effective communication with clients 2. Service-oriented attitude	Currently this position is not covered; there is no specific training at the technical level.
	Clinical Biochemist	1. Management of office tools	1. Testing 2. Protocol management for biochemical testing of body fluids	1. Service-oriented attitude	Currently this position is not covered; there is no specific training at the technical level.
Textile (maquila)	Industrial Maintenance Technician	1. English proficiency (conversational)	1. Management of automation software 2. Understanding the electromechanical principles of embroidery equipment, serigraphy, cutting, confection 3. Planning of preventive and corrective measures in the maintenance of industrial equipment	1. Service-oriented attitude 2. Professional ethics 3. Conflict management 4. Time management 5. Effective communication 6. Stress management	Processes of nonformal education and technical vocational education meet the demand.
	Warehouse Manager	1. Management of office tools	2. Administration of operating costs in warehouses	1. Responsible 2. Ethics at work 3. Creativity 4. Positive attitude	Processes of secondary and higher education meet the demand.
	Industrial		1. Knowledge of mathematical	1. Decision making 2. Responsibility	There is training at the higher

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
	Chemical Technician		calculations applied to industrial chemistry 2. Principles of unitary operations 3. Dyes and colorings 4. Management of reaction mechanisms	3. Proactive	education level in industrial chemistry, but there are weaknesses in graduates regarding dyeing processes, with a lack of specific knowledge of dyes and colorings.
	Inventory Administration Technician	1. Management of office tools	1. Inventory management 2. Management of cost structures	1. Decision making 2. Responsibility 3. Proactive	Currently, this demand is met with graduates of middle and higher levels of education.
	Quality Control	1. Management of office tools	1. Management of computer tools for quality control and detection of nonconformities.	1. Decision making 2. Attention to detail 3. Responsibility 4. Creativity 5. Innovation	There is no current educational offering that meets the need for technicians in quality control. Instead, employers make use of administrators and industrial engineers.
Coffee	Farm Administrator		1. Agronomic management of coffee cultivation 2. Knowledge of costs 3. Personnel management	1. Leadership 2. Commercial negotiation 3. Management of socio-environmental conflicts 4. Effective communication	A graduate degree in Business Administration of Coffee Companies was created in 2016 at UNAH, and the first graduates will finish in 2019.
	Quality Control Technician	1. Management of office tools	1. Management of records system 2. Attitude toward continuous improvement of quality 3. Heavy vehicle handling		Continuing education programs have filled demand. Recently UNAH and IHCAFE have promoted the Technician in Quality Control of Coffee; however, the supply of graduates is reduced and does not meet the high demand.
	Taster		1. Organoleptic detection	1. Positive attitude	Continuing education programs

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
			of flavors, odors, colors	2. Attention to detail	have filled demand. Recently UNAH and IHCAFE have promoted the Technician in Quality Control of Coffee; however, the supply of graduates is reduced and does not meet the high demand.
	Marketing Manager	1. Management of office tools	1. Strategic and operational planning 2. Knowledge of market segments 3. Digital marketing through the use of social networks and instant messaging systems	1. Leadership 2. Conflict management 3. Effective communication	
	Rural Mechanic		1. Knowledge of mechanical principles 2. Maintenance of agricultural mechanical equipment 3. Repair of agricultural mechanical equipment and its hydropneumatic components	1. Decision making 2. Time management 3. Leadership	There is currently no training in rural mechanics; agricultural engineers trained to drive and operate vehicles and rural equipment are not trained for mechanical maintenance and repair.
Tourism	Accountant	1. Management of office tools	1. Management of purchases 2. Cost analysis 3. Organization and administration of inventories and warehouses		Those graduating from secondary education are hired; it is often the case that what is taught is manual accounting and what is demanded is computerized accounting.
	Web Designer		1. Design of web templates	1. Effective	Positions are contracted by

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
			2. Server administration 3. News feed 4. Web messaging 5. Web page programming	communication, to train and transfer content on web page to users	professional freelance services.
	Graphic Designer		1. Design of printed and digital promotional materials 2. Identification of appropriate corporate image with the behavior of consumers	1. Time management	Positions are contracted by professional freelance services.
	Marketing Manager	1. English proficiency (conversational)	1. Digital marketing through the use of social networks and instant messaging systems 2. Knowledge of tourist attractions 3. Destination promotions	1. Desire to learn 2. Effective communication 3. Creativity	Part-time positions occupied by professionals with a bachelor's degree in economics, administration or accounting sciences, or in their absence by those with secondary education with a focus in tourism.
	Rural Tourism Guide	1. English proficiency (conversational)	1. Knowledge of natural and cultural heritage 2. Techniques for visitor guides 3. Ability to interpret heritage and transmit knowledge to visitors 4. Naturalistic observation techniques such as bird watching 5. Tourist safety	1. Effective communication 2. Ability to lead groups	Currently developed empirically by amateur local guides with the desire to learn.
	Rafting Guide		1. Management of security protocols 2. First aid	1. Trust 2. Tolerance 3. Ability to lead groups	Learning takes place in nonformal settings and through oral transmission, starting as

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
			3. Driving heavy vehicles 4. Establishment of camps in forested areas		assistant guides.
	Chef		1. Selection and purchase of ingredients and supplies 2. Costing 3. Safe and safe handling of food 4. Food preparation techniques	1. Creativity 2. Innovation	Demand is filled through vocational technical education and higher education.
	Kitchen Administrator		1. Cost Analysis 2. Pricing 3. Purchase of supplies 4. Safe food storage 5. Labor legislation 6. Health, safety and occupational health	1. Leadership 2. Effective communication 3. Decision making	There are no established educational trainings in restaurant management in Honduras.
	Maintenance Technician		1. Expansion and reconstruction of civil constructions 2. Installation and repair of electromechanical equipment 3. Electrical installations and repairs 4. Fluid flow installations and repairs	1. Willingness to learn. 2. Effective communication 3. Service-oriented attitude 4. Self-awareness and self-esteem	Demand is filled through vocational technical education.
	Event Organizer	1. Grammatically correct writing in mother tongue 2. English proficiency	1. Management of suppliers 2. Interior and exterior decoration 3. Analysis of cost structure	1. Decision making 2. Time management 3. Creativity 4. Leadership 5. Service-oriented	University graduates meet this need.

Sector, Subsector, Chain	Position	General Competencies	Technical Skills or Sub-Competencies	Soft Skills	Limitations and Opportunities
		(conversational) 3. Management of office tools	4. Preparation and execution of budgets	attitude	
	Bartender	1. English proficiency (conversational)	1. Hygienic and safe handling of beverages 2. Preparation of beverages and combinations 3. Knowledge of the tourist attractions of the area, to promote with customers	1. Creativity 2. Service-oriented attitude 3. Attention to and respect for difference.	Demand is filled through vocational technical education.
	Waiter/ Waitress	1. English proficiency (conversational)	1. Cleaning techniques 2. Knowledge of drinks offered in the restaurant in order to make correct suggestions	1. Self-awareness and motivation 2. Willingness to learn 3. Positive attitude 4. Kindnes. 5. Service-oriented attitude	Demand is filled through vocational technical education.
	Hotel Manager	1. English proficiency (conversational) 2. Management of office tools	1. Operational strategic planning 2. Management of personnel 3. Financial management of income and expenses	1. Service-oriented attitude	Demand is filled through higher education.
	Receptionist	1. English proficiency (conversational) 2. Management of office tools	1. Management of reservations and confirmations by phone and email.	1. Effective communication 2. Service oriented attitude	Demand is filled through secondary and higher education offerings, with the weakness of not finding enough bilingual staff.

ANNEX VI. LIST OF INTERVIEWS

Name	Title	Organization	Sector	Location
Emilio Medina; Ramón Medina	President of the Admissions Board; Business Manager	Beneficio de Café Monticristo	Coffee	San Pedro Sula, Cortés
Douglas Urquía	Manager	Beneficio Santa Rosa	Coffee	Santa Rosa de Copán, Copán
Luis Orlando Valle	Manager	Cafè Rural Seis Valles	Coffee	Santa Rosa de Copán, Copán
Cesar Maradiaga	General Manager	Consorcio AgroComercial de Honduras	Coffee	Tegucigalpa, Francisco Morazán
Donaldo Gonzales	General Manager	Empresa Aruco	Coffee	Santa Rosa de Copán, Copán
Lic. Nelson Funez	Technical Director	IHCAFE	Coffee	Tegucigalpa, Francisco Morazán
Carlos Turcios; Leonardo Martínez; Graciela López	Director; Co-Coordinator; Assistant Executive Director	Instituto Politécnico Centroamericano	Education	San Pedro Sula, Cortés
Pedro Antonio Quiel	Director	UNAH-Centro Regional Universitario de Occidente (CUROC)	Education	Santa Rosa de Copán, Copán
Javier Mejía	Academic Vice Rector	Universidad Tecnología de Honduras	Education	San Pedro Sula, Cortés
Osman Oziel Ordoñez	General Manager	ADELSAR	Government	Santa Rosa de Copán, Copán

Name	Title	Organization	Sector	Location
José Ramón Ávila; Margarita García; Daysi Mejía; Andrés Antonio Pinto; Edgardo Chávez; Leidy Waldina Soriano	Executive Director/ASONOG; Executive Director PILARH; Technical Assistance Coordinator/PILARH; Member of the Menonita Social Action Commission/CASM; Member of the Integrated Christian Development Organization/OCDIH; Coordinator of the Development Agency of the Department of Ocotepeque – Valle de Sensenti/ADEVAS	ASONOG	Government/NGO	Santa Rosa de Copán, Copán
Bertha Liliam Gutiérrez	Regional Director	Secretaría de la Presidencia de la República, Plan de Nación	Government	Tegucigalpa, Francisco Morazán
Roberto Reyes	Public Relations	United Nations Development Program	Government	San Pedro Sula, Cortés
Alex Martinez	General Operations Manager	Farmacia del Ahorros	Health	Tegucigalpa, Francisco Morazán
Iris Diaz	Owner and Pharmacist	Farmacia Cebieña	Health	Tela, Atlántida
Sergio Flores	Technical Advisor/LINKAGES in Atlántida and La Ceiba	FHI 360	Health	Tegucigalpa, Francisco Morazán

Name	Title	Organization	Sector	Location
Josè Bautista; Kathryn Tshiegg; German Bárcenas; Gerardo Pineda	Director; Executive Director; Biomedical Director; Biomedical Engineer	Fundación Central American Medical Outreach	Health	Santa Rosa de Copán, Copán
Delmi Torres, Luis Talavera, Karen Santos	Talent Coordinator; Quality Control Manager; General Manager	Grupo Meyko	Health	Tegucigalpa, Francisco Morazán
Gabriel E. Delgado; Dr. Ricardo R. Aguilar	General Manager; Medical Director/Hospital	Honduras Medical Center	Health	Tegucigalpa, Francisco Morazán
Fredal Merlo	Administrator	Hospital Escuela Universitario	Health	Tegucigalpa, Francisco Morazán
Dra. Cecelia Almendares	General Manager	Medicentro	Health	La Ceiba, Atlántida
Fernando Garcia	Executive President	Asociación Nacional de Industriales	Industry	Tegucigalpa, Francisco Morazán
Franscisco Villatoro; Jimi Benitez; Carlos Guillermo Rosales	President CCIA; Executive Office; Assistant Technical Director	Cámara de Comercio e Industrias de Atlántida	Industry	La Ceiba, Atlántida
Pedro Barquero; Elvia Suazo	Executive Director; Director of Human Resources	Cámara de Comercio e Industrias de Cortés	Industry	San Pedro Sula, Cortés

Name	Title	Organization	Sector	Location
Karla Ruiz; Blanca Azucena Salgado Velasquez	General Manager; Human Talent Coordinator	Cámara de Comercio e Industrias de Tegucigalpa	Industry	Tegucigalpa, Francisco Morazán
Marco Bautisto; Oscar Posas; Karen Aguilar; Saloman Goday; Silvia Moneada	Executive Team	Cámara de Comercio e Industrias de Tela	Industry	Tela, Atlántida
Arnoldo Solís; Celenia Medina	General Director of the Honduran Association of Maquilas; Employment Office Official	Asociación Hondureña de Maquiladores	Textiles	San Pedro Sula, Cortés
Carlos Cruz	General Manager	Confecciones SOLRAC	Textiles	San Pedro Sula, Cortés
Claudia Sandoval	Vice president of Corporate Citizenship in Central America and the Caribbean	Gildan	Textiles	Choloma, Cortés
Walquiria Ochoa; Tesla Callejas	General Coordinator of PROCINCO; Director of Communications and Marketing of Honduran Association of Maquilas	PROCINCO	Textiles	San Pedro Sula, Cortés
Julio Martinez		UNITEC	Textiles	Tegucigalpa, Francisco Morazán
Armando Funes	Institutional Development and Legal Issues; Hotel Owner in San Pedro Sula	Avianca Airlines	Tourism	Tegucigalpa, Francisco Morazán
Guillermo Orellana	Executive Director	Bureau of Conventions	Tourism	San Pedro Sula, Cortés
John Dupuis	Owner of La Villa de Soledad / CANATURH board member	CANATURH	Tourism	La Ceiba, Atlántida
Nicole Marrder	Member of the CANATURH Directive Board; Member of Association of Small Hotels (HOPEH); Owner of Minister Business Hotel, Tegucigalpa	CANATURH/ HOPEH	Tourism	Tegucigalpa, Francisco Morazán

Name	Title	Organization	Sector	Location
Marcela Reyes	Human Resource Manager; Front Desk Manager	Cesar Mariscos Hotel and Restaurant	Tourism	Tela, Atlántida
Aura D'Agostino	Owner; Human Resource Manager	Garifuna Tours	Tourism	Tela, Atlántida
Vilma Carranza	Reservations Manager	Hotel Copantl	Tourism	San Pedro Sula, Cortés
Patrick Oerichon	Manager	Hotel Elvir	Tourism	Santa Rosa de Copán, Copán
Sue Yen Madrid	Training Coordinator	Hilton Hotel	Tourism	San Pedro Sula, Cortés
Gunther Echenique	Director of Human Capital	INTUR	Tourism	Tegucigalpa, Francisco Morazán
Martha Martinez	Director of Human Resources	Marriott, Tegucigalpa	Tourism	Tegucigalpa, Francisco Morazán
Jorge Salaverri	Owner/Operator	La Moskitia Ecoaventuras	Tourism	La Ceiba, Atlántida
Amanda Bermudez	Restaurant Owner and Coordinator of Nucleo Gastronómico	Nucleo Gastronómico	Tourism	Tegucigalpa, Francisco Morazán
Silvia Stern	Owner/General Manager	Omega Tours Adventure Company	Tourism	La Ceiba, Atlántida
Franklin Navas	Reception and Reservations Manager	Quinta Real Hotel	Tourism	La Ceiba, Atlántida
Karina Peña	Manager	Vaya Pues Tourism	Tourism	Santa Rosa de Copán, Copán

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