SKILLS FOR UPGRADING:
Workforce Development and Global Value Chains in Developing Countries

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"Skills for Upgrading: Workforce Development and Global Value Chains in Developing Countries"

This research project examines workforce development strategies in developing countries in the context of the shifting upgrading dynamics of global value chains. Funded by RTI International and carried out by Duke CGGC, this research addresses policymakers, donors and development practitioners to improve our understanding of how workforce development strategies can enhance the upgrading efforts and competitiveness of developing countries in global industries.

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None of the opinions or comments expressed in this study are endorsed by the companies mentioned or individuals interviewed. Errors of fact or interpretation remain exclusively with the authors.

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Workforce Development in the Global Economy: Linking Skills and Capabilities to Upgrading

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"Penetrating global markets, even in sectors that traditionally use unskilled labor, requires more skills than the poor in developing countries typically possess."

Ann Harrison, 2007, *Globalization and Poverty*

In 2009, RTI International and the Duke University Center on Globalization, Governance & Competitiveness (Duke CGGC) convened a joint research program to help donors and developing country governments better understand the role and dynamics of workforce development in the context of global value chain (GVC) upgrading. Over the next two years, Duke CGGC led the exploratory research program in collaboration with RTI International on the role of workforce development policies and initiatives in the upgrading trajectories of key value chains. Our focus was on four industry value chains of high interest to developing country governments and international donors: fruit and vegetables, apparel, offshore services and tourism.

The research agenda was developed in response to increasing interest from developing country governments and donors alike, in effective methods to address poverty, unemployment and underemployment and upgrading the workforce skills and institutional capabilities needed for developing countries to participate and grow in a sustainable fashion in the global economy. Workforce training and development initiatives for the formal and informal sectors are often considered essential methods to provide expanded employment opportunities for targeted populations in economically relevant industries (Gill et al., 2000; Lall, 1999). There is also growing demand for national and sub-national institutions to formulate strategies for the alleviation of poverty and unemployment (especially among women and youth), and to improve access to economic opportunities and decent work for their populations (Altenburg & von Drachenfels, 2006; Marchese & Sakamoto, 2008).

In the context of the World Bank's Skills Toward Employability and Productivity framework, workforce development refers to "building and upgrading job-relevant skills." It refers to "a national,

regional, provincial or sector-based system that serves a dual function: enabling individuals to acquire technical knowledge, practical skills and attitudes for gainful employment or improved work performance in a particular trade or occupation; and providing employers with an effective means to communicate and meet their demand for skills…The former function is often associated with technical and vocational education and training (TVET), while the latter is associated with arrangements for employer involvement in workforce development at both the strategic and operational levels" (Tang et al., 2010, p. 2).

Consistent with the World Bank's approach, we define workforce development as the process by which a territory's initial endowment of human capital is converted, though education, training and relevant services such as labor market intermediation, exchange and information, into a source of competitive advantage for firms and industries in the territory. When this process is well-orchestrated through the combined efforts of governments, businesses, education and training providers and labor force intermediaries, employment in value-adding industries can provide pathways out of poverty through formal employment, career advancement and adequate social protections that are unavailable in informal economies and microenterprise-driven livelihoods.

In developed economies, a specialized, skilled workforce is among the most important economic development assets and targeted workforce development initiatives are common tools for enhancing local and regional economic competitiveness in the United States and Europe (Blakely & Green Leigh, 2009; Jacobs & Hawley, 2009). Among developing country governments and entrepreneurs, however, workforce initiatives may be viewed as the domain of social policy rather than as an enhancement to industry competitiveness. We believe this is an outmoded perspective. In an economic environment where outsourcing and offshoring are the norm in many manufacturing and service industries, workforce development is an integral element of both poverty alleviation and national competitiveness goals.

Value Chains and the Workforce

In the contemporary era of globalization, the development community's understanding of the role of workforce development in the contemporary economy is increasingly structured around GVCs. The evolution of GVCs in sectors as diverse as agricultural commodities, apparel, tourism and business service outsourcing has significant implications in terms of global trade, production and employment and how developing country firms, producers and workers are integrated in the global economy. GVCs encompass the full range of activities required to bring a good or service from conception, through the different phases of production (provision of raw materials, input of various components, subassemblies, producer services and assembly of finished goods) and delivery to final consumers, and, finally, to

disposal after use. In the context of globalization, the activities that compose a value chain are generally carried out in interfirm networks on a global scale (Gereffi, 1999; Gereffi et al., 2005; OECD, 2011).[1]

The GVC framework has been developed over the past decade by a diverse interdisciplinary and international group of researchers who have tracked the global spread of industries and studied the implications for corporations, countries and workers. By focusing on the sequences of value added, from conception to production to end use, GVC analysis provides a holistic view of global industries—both from the top down (e.g., examining how lead firms "govern" their global-scale affiliate and supplier networks) and from the bottom up (e.g., asking how these business decisions can add value to the industry in specific countries and regions).

Global value chains, by nature, are highly dynamic and globally competitive. Firms face increasing pressure from a growing number of producers and suppliers around the world and, to remain competitive, they must increase the skill content of their activities or develop competencies in niche market segments (Humphrey & Schmitz, 2002, p. 1018). In the GVC framework, this movement along the value chain is referred to as economic upgrading. Four types of upgrading have been identified, each of which requires differing levels of firm learning: *process upgrading*, which transforms inputs into outputs more efficiently by reorganizing the production system or introducing superior technology; *product upgrading*, or moving into more sophisticated product lines; *functional upgrading*, which entails acquiring new functions (or abandoning existing functions) to increase the overall skill content of the activities; and *chain* or *inter-sectoral upgrading,* where firms move into new but often related industries (Humphrey & Schmitz, 2002). Upgrading is imperative, not only to capture increased value within these global industries, but ultimately to survive within the industry. This places new competitive conditions on host-country industries for participating in international trade and has significant implications for workforce development.

The majority of current workforce tools were conceptualized prior to the widespread adoption of value chain strategies by development stakeholders. Beginning in the late 1990s, the International Labor Organization (ILO) initiated an important body of research and practice on demand-driven workforce development for local industry needs (International Labor Organization (ILO), 1999, 2001, 2003). Subsequently, the Global Workforce in Transition (GWIT) IQC, which ended in 2007, modernized the U.S. Agency for International Development's (USAID's) approach to workforce development, promoting market-responsive, demand-driven training in partnership with the private sector. Much of USAID's work

[1] For more background on the GVC perspective and related publications, see the Global Value Chains Web site: http://www.globalvaluechains.org/.

under GWIT was heavily influenced by local cluster-based industry development approaches, which have since been replaced to a large extent in the development community by GVC approaches.[2]

This is a profound change because cluster-based perspectives on economic development were focused principally on local institutions and interactions. In contrast, the GVC approach incorporates important insights into the global relationships in which local interactions are embedded—particularly relationships between small and medium enterprises and the "lead firms" that structure their access to final markets (Frederick & Gereffi, 2009). These two approaches differ not only in terms of how countries and firms engage in and are interconnected through international trade, but also with respect to what is traded and the requirements for entry into increasingly global industries. Some key differences in the approaches to economic growth of these two perspectives, and their potential implications for workforce development, are contained in ***Table 1.1***.

Table 1.1. Comparison of Cluster and GVC Perspectives and Implications for Workforce Development

	Cluster-Based Perspective	GVC Perspective	Workforce Implications
Trade	Trade in finished goods	Trade in "tasks" (activities) and intermediate goods	Process-based knowledge and skills rival product-based knowledge
Networks	Dense networks of local firms	Production networks "controlled" by lead firms	Increased importance of managerial learning from global sources
Participation	"Organic" participation in clusters by all firms	GVC participation requires deliberate "choice"	Knowledge of position in and trajectory of upgrading provides insight into skill requirements
Norms and regulations	Local norms of cooperation	Compliance with international standards	Rising importance of training to comply with new product and process standards and internationally recognized certifications
Barriers to entry	Low barriers to entry for locally improved products	Commercial and product standards constitute high barriers to entry for developing country firms	Lead firms as gatekeepers to enforce skill requirements and product quality; international partnerships
Geography	Geographically concentrated production of related goods and services	Geographically dispersed production of intermediate goods and final products	Reduced access to "tacit knowledge" about industries

Source: Authors.

These are important differences in how these two approaches see the world. The cluster-based perspective was based on the premise that locality matters and that regions play an important role in economic development, not only in the economically advanced countries of the world, but also in low-

[2] Recently, USAID has adopted the value chain framework to reorient its Enterprise Development strategy around the concept of Value Chain Development (see the wiki pages created to introduce the new value chain approach: http://apps.develebridge.net/amap/index.php/Value_Chain_Development).

and middle-income countries (Piore & Sabel, 1984; Porter, 1990). Within clusters, local enterprises were knit together in dense networks that supplied most of the goods and services used to make finished products, and public authorities played a key role in helping to develop supporting institutions, including those that provided education and training for the local workforce. The GVC perspective reanalyzed the role of clusters and regions in the context of globalization, and highlighted the need for local economic development strategies to deal with intensifying global opportunities and threats. GVC research brought fresh insights to how and why insertion in GVCs can accelerate or inhibit local upgrading (Schmitz, 2004; Staritz et al., 2011), but it also challenged relatively static and localized conceptions of enterprise strategies and workforce development.

Value chain practice has become the *sine qua non* of enterprise and industry development in recent years, and it is now being applied to a broad range of related fields, including corporate social responsibility, gender, food security and poverty reduction, in addition to enterprise and industry development (Memedovic & Shepherd, 2009; van Tulder, 2009; van Tulder et al., 2009). With the exception of recent work by Duke CGGC (Fernandez-Stark et al., 2010; Wadhwa et al., 2008), however, there is almost no literature on workforce development in the context of GVC upgrading, and there is not a widely accepted methodology for understanding the role of public and private workforce interventions in value chain upgrading.[3] The conceptual framework for workforce development offered by World Bank views the system as comprised of training as well as the information, coordination and relationships that permit effective matching of skills to jobs, resulting in faster growth and "progression up the value chain" (Tang et al., 2010). However, the importance of lead firms and their value chain governance strategies that structure developing countries' upgrading options are neglected in this framework.

There are a number of possible explanations for this omission in the literature. First, the analytical origins of value chain development practice are derived from the study of global industrial organization rather than from territorial or regionally based approaches, while workforce policies are typically place-based. Second, value chain development research has, until recently, tended to focus on micro, small, and medium enterprises (MSMEs),[4] which are unlikely to reach the scale of employment or formality necessary to justify large-scale investments in workforce development. Third, where workforce initiatives are discussed, value chain practitioners have tended to focus on proprietary methods of skill development, including embedded training services provided by buyers and equipment suppliers, and in-house training provided by multinationals (Wadhwa et al., 2008). Finally, the importance of workforce initiatives varies

[3] An ongoing research project on "Capturing the Gains: Economic and Social Upgrading in Global Production Networks and Trade" funded primarily by the United Kingdom's Department for International Development (DFID) is addressing a much broader set of upgrading issues in the context of the GVC framework. See http://www.capturingthegains.org/.

[4] This is especially true for donor agencies, such as USAID.

across industry/value chain contexts. Workforce-focused initiatives alone cannot catalyze value chain upgrading without motivated firms and entrepreneurs, access to capital, or linkages to customers or markets.

However, now that GVC methods are being used by donors to pursue a wider variety of goals, including upgrading of larger firms and more formal industries,[5] it is worth revisiting how place-based public and private workforce initiatives can be most effectively configured in the context of these interventions.

Directions for Research

GVC analysis can provide useful insights to better adapt workforce-focused interventions to actual situations and, as a result, can support both the economic aspirations of targeted populations and improved participation of businesses in the global economy. However, this approach should be sector specific and dynamic in its orientation.

A key feature of GVC analysis is that it operates at a meso- (or industry) level, between the macro-factors that affect the global and national economies and the micro-level focus on firms, workplaces and communities. While most value chain studies highlight the governance structures and upgrading (or downgrading) trajectories of particular industries, the contributions of the value chain approach to development can be enhanced by analyzing in greater detail the national and local institutional factors and workforce interventions that can become place-based drivers for competitiveness. There are several reasons for this.

First, employers' demand for skilled workers is dynamic, and its change is intimately tied to the trajectories and pace of economic upgrading. The GVC approach provides a useful framework for exploring this progression across a diverse range of value chains, including agricultural, manufacturing and service-oriented industries. Upgrading trajectories—while not mechanistic or automatic—follow recognizable patterns that can be identified through GVC case-study research based on the experiences of countries at different levels of development. Typically, there are multiple pathways, sequences and entry points for developing economies in any given industry.

Our GVC approach to workforce development links industry-specific trajectories of economic upgrading to the most important workforce development requirements at each stage of the upgrading process. Understanding specific cases of value chain upgrading, such as Chile's emergence as an important global supplier of processed fresh fruits and vegetables or the Philippines rapid evolution as the

[5] The World Bank has commissioned a series of value chain studies for its project "Global Value Chains and the Crisis." See, for example, Gereffi and Frederick (2010), Gereffi and Fernandez-Stark (2010), and Cattaneo et al. (2010). Also see World Trade Organization and IDE-JETRO (2011).

leading call center destination in the world, help to situate workforce initiatives in the context of realistic and attainable upgrading trajectories through which developing countries have succeeded. Better knowledge of these upgrading trajectories across a range of industries and countries sheds light on future skill demands as well as the complementary policy instruments and business competencies that are required for sustained upgrading as industries transition to higher-value activities.

Second, GVC analysis incorporates a wide range of actors and stakeholders (public, private, quasi-public), as well as geographic scales ranging from the local, sub-national, national and global (without necessarily favoring one over another). In our research, we have paid particular attention to the role of various labor-market intermediaries that seek to provide the right mix of approaches to training and skills development to enhance upgrading opportunities.

Finally, the GVC perspective helps to shed light on the role of training standards and product and process certifications in helping developing country workforces obtain greater skill portability, better working conditions and potentially more productive integration into the world economy.

Research Methodology

The main goal of our research was to explore how workforce development within the value chain can foster or hinder the upgrading potential of developing countries. In particular, we seek to understand how to enhance labor assets in developing countries, and in turn to assist governments and donors alike in determining which human resource/workforce investments are most appropriate to facilitate attainable economic upgrading (which may vary considerably across value chains), and what complementary investments have, in the past, successfully facilitated the upgrading of GVCs across the spectrum of industries of high interest to developing economies.

In order to better understand the relationship between industry upgrading and workforce development, we studied four major, dynamic global industries in developing countries: fruit and vegetables, apparel, offshore services and tourism.[6] These labor-intensive industries are drivers of economic development and poverty reduction in emerging economies. In each of the industries studied, we selected a number of countries for comparative analysis that represent different stages of industry development and cover a broad range of regional and cultural contexts as well as levels of economic development:

[6] In order to select the industries for this study, leading development agencies, including the World Bank, the International Labor Organization and USAID, were approached and asked to provide a list of their priority economic sectors.

Table 1.2. Industries and Countries Selected for Analysis

Industry	Countries
Fruit and Vegetables	Chile, Honduras, Jordan, Kenya and Morocco
Apparel	Bangladesh, Lesotho, Nicaragua, Sri Lanka and Turkey
Offshore Services	Chile, India, Philippines and Spanish Speaking Central American and Caribbean countries
Tourism	Costa Rica, Jordan and Vietnam

Source: Authors.

The research was carried out in three main steps:

(1) the structure of the GVC for each industry was mapped out in terms of its principal activities, value adding stages, and lead firms;

(2) individual developing countries that varied in their level of upgrading within each industry were identified and analyzed in order to show the main challenges at entry, middle and high levels of upgrading; and

(3) the role of workforce development initiatives in each of these developing country upgrading stages was analyzed and compared.

These analytical steps allowed us to illustrate how these global industries operate, what upgrading requirements and opportunities are available for developing countries, and they provided a context to evaluate how workforce development components may contribute to or hinder the industry's success. The information collected for these reports is based on both primary and secondary sources. Due to limited resources, mostly secondary sources were used, complemented by interviews and limited field research in select countries and industries.[7]

The key questions we explored include the following:

- In each of our selected industries, what are the lead-firm requirements and global best practices for suppliers from developing countries that participate and are at least moderately successful in these GVCs (as measured by sustained exports to developed country markets)?
- In cases of value chain upgrading in agricultural, manufacturing and service industries, what roles have national and sub-national workforce development institutions or initiatives played (supporting/catalytic/other)?

[7] It should be noted that while the project examines which workforce development initiatives were employed to facilitate upgrading, impact assessments and evaluations of the effectiveness of individual training programs were not conducted. The inclusion of a program should not be considered an endorsement of its success.

- What are the most effective roles and best practices of the public (national and sub-national) institutions in workforce development to stimulate value chain upgrading at each stage?
- How do the requirements of these roles differ based on the type of upgrading strategy pursued by businesses (e.g., product/process/functional) and/or on the stage of upgrading?
- What is the division of roles between the public and private sector(s)? How have developing country governments and the private sector successfully engaged around workforce development to support upgrading? What are promising practices from recent upgrading events?
- What skills are required of local actors to work with global companies?
- How do industry standards (e.g., product and process standards in terms of quality and product safety) impact worker skill requirements, and what instruments available to stakeholders (i.e., professional certifications or global skill standards) can assist in helping meet these standards?

Through this project, we are using a GVC perspective to move our existing models of workforce development beyond a traditional (exclusive) focus on education and skills training, and to outline new roles for workforce development in industry upgrading and competitiveness in the contemporary economy. The final chapter of this book summarizes our findings, drawing attention to commonalities across industry case studies and stages of upgrading. We offer a set of recommendations to donors and development agencies to formulate more efficient and timely workforce development initiatives that will enhance economic as well as social upgrading.

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CHAPTER 2

The Fruit and Vegetables Global Value Chain

ECONOMIC UPGRADING AND WORKFORCE DEVELOPMENT

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Acronyms

ASOEX	Asociación de Exportadores de Frutas de Chile
BRC	British Retail Consortium
CORFO	Corporación de Fomento de la Producción
DAARP	Dryland Agriculture Applied Research Project
DUKE CGGC	Duke University, Center on Globalization, Governance and Competitiveness
ECLAC	Economic Commission for Latin America and the Caribbean
EU	European Union
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration
FDI	Foreign Direct Investment
FFV	Fresh Fruit and Vegetables
FHIA	Fundación Hondureña de Investigación Agrícola
FUNDER	Fundación para el Desarrollo Empresarial Rural
GAP	Good Agricultural Practices
GDP	Gross Domestic Program
GIAC	Groupement Interprofessionnelle d'Aide au Conseil
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Point
HCDA	Horticultural Crops Development Authority - Kenya
IFOAM	International Federation of Organic Agriculture Movements
ISO	International Organization for Standardization
IT	Information Technology
JEPA	Jordan Exporters & Producers Association For Fruits & Vegetables
JORICO	Jordan River Company
KARI	Kenya Agricultural Research Institute
MEC	Moroccan Economic Competitiveness
M&S	Marks and Spencer
ODEPA	Oficina de Estudios y Políticas Agrarias
OTIC	Organismo Técnico Intermedio para Capacitación
NGO	Non Governmental Organization
SA	Social Accountability
SENCE	Servicio Nacional de Capacitación y Empleo
SOP	Standard Operating Procedures
SPS	Sanitary and Phytosanitary Standards
SQF	Safety Quality Food
USDA	United States Department of Agriculture
USAID	United States Agency for International Development
WDI	World Development Indicator
WTO	World Trade Organization

I. Introduction

This report uses the global value chain (GVC) perspective to examine the role of workforce development initiatives in a number of developing countries that are participants in the global fruit and vegetable industry. Since the 1980s, international trade of fruit and vegetables has been characterized by tremendous growth, driven by rising incomes and the expansion of the middle class worldwide.[1] At the beginning of the 21st century, the global industry accounted for US$56.1 billion, and by 2008, exports reached more than twice that value at US$139.6 billion (UNComtrade, 2011). Motivated by this growing global demand, developing countries have actively pursued the production and export of this high-value agricultural subsector and have successfully captured a large portion of the horticultural[2] market.

This export industry offers an important source of employment for developing countries. Cultivation of fruit and vegetables is substantially more labor-intensive than growing traditional cereal crops and offers more post-harvest opportunities to add value (Joshi et al., 2004; Weinberger & Lumpkin, 2005; World Bank, 2009). Today, packing and processing services—such as washing, chopping, and mixing, as well as bagging, branding, and applying bar codes—are often carried out at the source rather than at the end-market destination. These processes, which were previously based in the developed world, have created considerable new employment opportunities in developing countries (Humphrey et al., 2004).

Despite the labor-intensive nature of the industry, workforce development for horticulture production has been underestimated in the past, as operations typically employed rural workers with a minimum level of education. However, with the increased complexity of the value chain, the enforcement of strict public and private industry standards and growing competition among developing country suppliers, workforce skills are becoming a more important factor for industry competitiveness. While the adoption of a professional approach to human capital development in the sector is relatively recent, certain strategic investments in workforce development by both the public and private sectors that have facilitated upgrading can be identified. This report uses case studies of selected developing countries to illustrate how national and subnational workforce development institutions and actors in developing countries can respond to globalization, work effectively with global "lead firms" to understand new skill requirements that globalization places on their workforces, and establish workable division of responsibilities in effective public-private partnerships (PPPs).

[1] Fruit and vegetables consumption has been positively correlated with income levels, with per capita consumption being the highest in high-income countries (Wu Huang, 2004).

[2] Generally, the term "horticulture" includes the production of cut flowers in addition to fruit and vegetables. Cut flowers, however, are not included in this study and references to horticulture in this paper refer to the fruit and vegetable sectors.

The paper is structured as follows. First, we provide an overview of the global organization of the industry and the global fruit and vegetables value chain. Second, we identify the entry points and upgrading trajectories for developing countries in this industry. These early sections show how the global industry operates and provide a context to evaluate how workforce development components may contribute to the industry's success. Third, we provide an overview of the human capital required at each level of the value chain. Fourth, we present case studies of five developing countries—(1) Chile, (2) Honduras, (3) Kenya, (4) Jordan, and Morocco—and identify key workforce development practices pursued in each to drive upgrading in the industry. The final section provides a comparative analysis of these cases and highlights best practices that may be adopted by other developing countries in the future.

II. Global Organization of the Industry

The structure of the global fruit and vegetable industry has evolved substantially over the past 30 years.[3] Strong lead firms have emerged in key markets, which now control shorter, more complex global supply chains, and many of the value-added functions within the industry have shifted from developed to developing countries as the latter have gained expertise.

Today, the fruit and vegetables sector operates as a buyer-driven value chain (Gereffi & Lee, 2009). Large supermarket chains are the leading actors both in key export markets, with controlling market shares across the European Union (EU) and the United States (Humphrey, 2005), as well as increasingly in emerging markets (Reardon & Berdegue, 2006). These buyers—including Sainsbury's, Marks and Spencer (M&S), and Walmart—seek enhanced cost competitiveness, consistency, and product differentiation, such as convenient, "ready to eat" products, from their global supply chains. Lead firms exert significant influence over the entire value chain and dictate how fruit and vegetables are produced, harvested, transported, processed, and stored. This control has been achieved by the introduction of private standards and codes of conduct that govern both the characteristics of the product including, quality, size, pesticide use, and the social and environmental conditions of cultivation and post-harvest handling.[4] Large and small suppliers around the world are required to meet these demands in order to maintain their access to these markets (Barrientos et al., 2003; Dolan & Humphrey, 2004; Henson & Humphrey, 2009; Jaffee & Masakure, 2005; Lee et al., 2010; Reardon et al., 2009).

[3] The evolution of the horticultural industry and the emergence of supermarkets as dominant powers is well documented in the GVC literature. See Humphrey et al., 2004.

[4] These standards include individual firm standards as well as those developed by nongovernmental organizations (NGOs) and industry associations.

In addition to rigorous private standards, governments from developed countries also control access to their domestic markets through a number of public standards and protocols with which suppliers must comply. These public standards are primarily focused on preventing sanitary and phytosanitary (SPS) problems and protecting consumers and domestic production from disease.[5] These standards have been driven by several factors, which include greater global awareness of potential health risks related to foodstuffs, following a number of high profile food "scares" during the 1990s (Gulati et al., 2006); weak SPS regulatory systems in certain developing producer countries (Henson & Humphrey, 2009); and the emergence of more sophisticated testing and information technologies, which facilitate both the traceability[6] of products and the enforcement of more rigorous standards throughout the chain (Henson & Humphrey, 2009).[7] These measures have resulted in a complex system of multiple standards at national, regional, and international levels. These standards are characterized by a lack of harmonization, both in requirements and enforcement mechanisms, across countries and buyers that add a significant cost to compliance. ***Table 2.1*** below highlights some of the more prominent of these standards governing the horticulture industry today.

[5] Under the World Trade Organization (WTO) SPS, individual countries are permitted to establish sanitary and phytosanitary regulations for imported foodstuffs to protect both their consumers and domestic agricultural industries from health risks and disease. In the United States, following the 2001 terrorist attacks, for example, the U.S. Food and Drug Administration (FDA) and USDA increased their control over products entering the country and began to audit the production facilities of suppliers in their home countries (Hernandez, 2011; Vergara, 2010).

[6] "Traceability" has emerged as the industry term, referring to the ability to track the exact origin and handling of a product from the field to the fork. With new information technologies, small barcoded stickers on each piece of produce can provide the buyer with information regarding the exact location in which the product was cultivated, each and every chemical product that may have been applied to the product, and details of the packhouse and workers that handled the product prior to its shipment (Vergara, 2010).

[7] There is an emerging global debate regarding the efficacy of public standards in the face of more stringent private standards and the role each should play in the regulation of agrifoods. Several authors argue that public standards are losing their relevance as the result of underinvestment. For an overview of this debate, see Henson & Humphrey, 2009 and Reardon, et al., 2009.

Table 2.1. Prominent Standards in the Horticulture Industry

	Public		Private	
	Mandatory	**Voluntary**	**Individual**	**Collective**
National	• National legislation (pesticide use, labor regulations, sanitary inspections etc) • U.S. Department of Agriculture (USDA) standards	• Hazard Analysis Critical Control Point (HACCP) • USDA National organic program	• Nature's Choice (Tesco) • Field-to-Fork (M&S) • Terre et Saveur (Casino) • Conad Percorso Qualità (Italy) • Albert Heijn BV: AH Excellent (Netherlands)	• British Retail Consortium (UK) • Assured Foods Standards (UK)
Regional	• EU Regulations		• Filieres Qualite (Carrefour)	• EurepGap[8] • Dutch HACCP • Qualitat Sicherhiet (QS – Belgium, Holland, Austria) • International Food Standard (German, French, Italian)
International	• World Trade Organization SPS Agreement	• ISO 9000 • ISO 22000	• SQF 1000/2000/3000 (U.S.)	• GlobalGap • Global Food Safety Initiative • SA 8000 • International Federation of Organic Agriculture Movements (IFOAM) Standard

Sources: Gereffi & Lee, 2009; Henson & Humphrey, 2009; Jaffee & Masakure, 2005.

In addition to these non-tariff barriers, trade barriers designed to provide protection to local producers in industrial countries—such as seasonal tariffs, special duties, quotas, and subsidies to farmers in the importing countries—have also affected the global organization of the industry. Regional seasonal tariffs can be as high as 132% should preferential status not apply (Diop et al., 2005). Tariff escalation barriers provide domestic protection against processed fruit and vegetables and may directly impede important value-added activities from being carried out in developing countries by restricting access to markets. In many cases, these processed products are excluded from preferential agreements, and "restrictive rules for many processed products have severely limited the role of trade preferences in encouraging agricultural diversification in developing countries" (Brenton & Ikezuki, 2005).

Despite these significant challenges, attracted by growing global demand for fresh and processed fruit and vegetables, developing countries including Chile, Kenya, and South Africa have actively pursued horticultural production and export and have successfully captured a large portion of the market. Between 1980 and 2000, produce exports from low- and middle-income countries increased considerably more than those from developed countries, as did the share of horticultural products as a percentage of total agricultural exports (Shah, 2008; Weinberger & Lumpkin, 2005).

[8] GlobalGap, an outgrowth of EurepGap, is one of the most widely adopted standards. This standard was first developed in the EU in 1997 by an association of European fresh produce importers and retailers, and principally concerns pesticides and chemical use and application as well as the environmental impact of farming systems. Retailers in the United States began to adopt this standard for fresh produce in 2008 (GlobalGAP, 2008).

This rapidly expanding global footprint of the fruit and vegetables industry has had important consequences for production systems in developing countries. In the past, individual farmers determined varieties grown, quality levels, and production processes employed, and traders bought the product at the farm gate or from wholesalers (Dolan & Humphrey, 2004). Today, the horticulture industry is increasingly organized by long-term relationships and closer linkages between a range of different-sized producer and exporter firms (Humphrey, 2005; Reardon et al., 2009). In particular, the need to increase traceability, provide consistent and reliable supply, meet a wide range of demanding public and private standards, and follow strict management processes to become certified suppliers has led to a significant degree of top-down consolidation of the supply chain (Reardon et al., 2009).[9] Exporter firms consist of a few large multinational fruit and vegetable companies with operations that span several developing countries, combined with a large number of medium-sized domestic firms.[10] These exporter firms may also own their own production operations (producer-exporter), or they may source from a variety of large-, medium-, and small-sized farms, referred to as independent outgrowers. The relationship with these outgrowers is often managed by seasonal contracts in which the exporter provides the outgrower with certain resources, in exchange for guaranteed supply (Reardon et al., 2009).

This consolidated system has also created new opportunities for developing countries (Humphrey, 2005). Over the past 15 years, many retailers have shifted much of the packing work back to their suppliers in developing countries, and a number of them have upgraded along the value chain, moving from being simple producers to providing sophisticated packing services and, in some instances, processing of fruit and vegetables (Humphrey, 2005). A wide variety of fruit and vegetables now sold to in developed markets are pre-washed, chopped, mixed, and packaged in ready-to-eat convenience packs before leaving the developing world.[11] Even product development and innovation responsibilities have been transferred the supplier firms (Humphrey, 2005). These shifts offer significant employment opportunities in producer countries.

In the past, training was not a significant issue in this industry, and labor was largely drawn from unskilled workers. However, with increased global trade, the sector has become increasingly complex and competitive, and strict mandatory, as well as voluntary, guidelines must now be followed. Suppliers have been forced to introduce initiatives to ensure that their labor force can meet these changing demands, including hiring staff with more formal education and providing training for existing employees. The

[9] Consolidation is also occurring in among firms that provide inputs, such as fertilizers and pesticides for the supply chain, as the buyers limit acceptable processes and products (Humphrey, 2005).

[10] In some cases, these developing country firms have also expanded into other countries, simultaneously vertically integrating along the value chain.

[11] In Kenya, for example, the average compound annual growth of vegetable exports between 1995 and 1999, unprepared vegetable exports increased by 3.7% but 11.2 % for prepared vegetables (Mcculloch & Ota, 2002). Also see Humphrey et al., (2004) for further examples of prepared vegetables from Kenya and other developing countries.

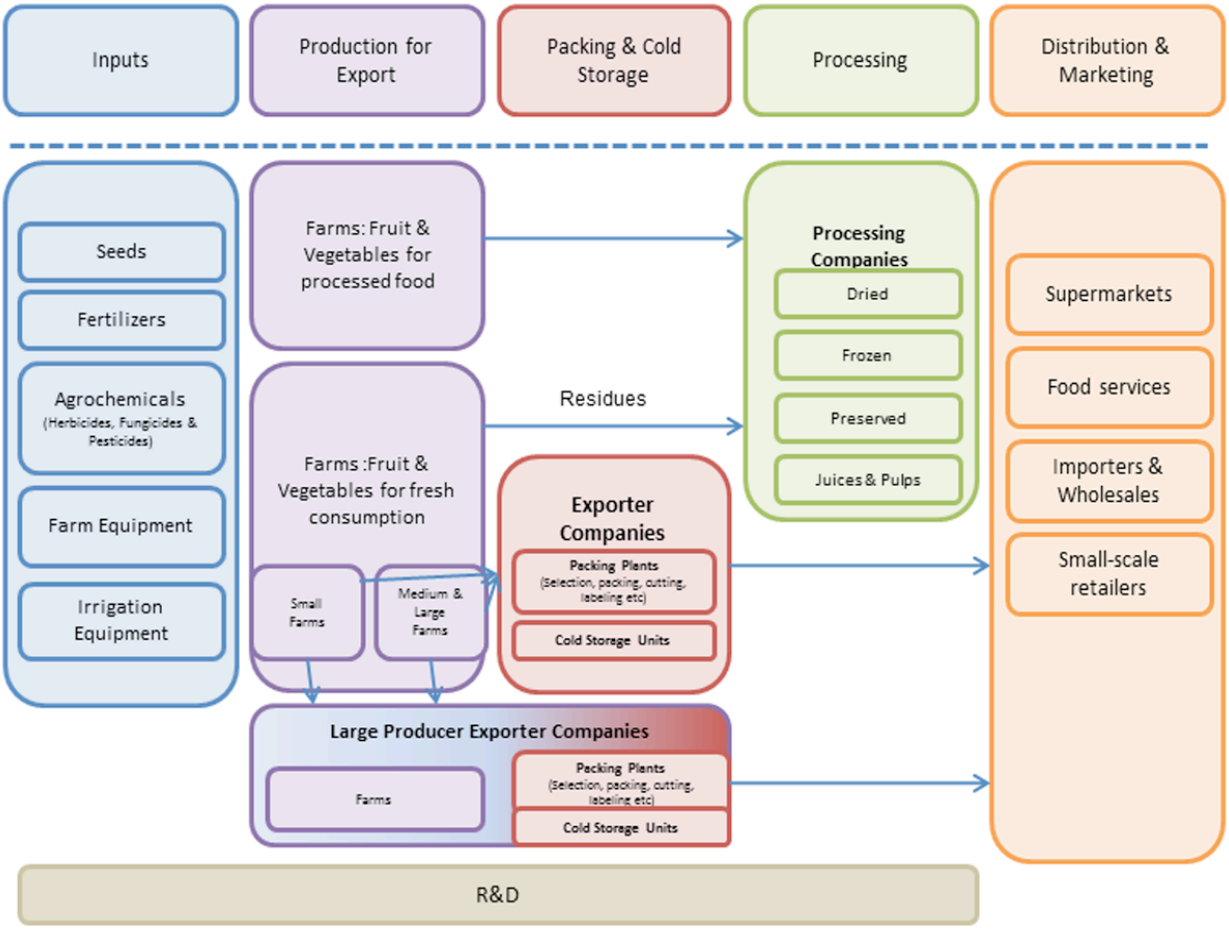
country cases presented in Section VI offer insight into how the sector has responded to this challenge in selected developing countries. Specifically the cases examine if and how workforce development initiatives are being adopted on the farm, in the packhouses, and in processing operations to improve the preparation and mobility of their workforce to help them to remain competitive in the global industry.

III. The Fruit and Vegetables Global Value Chain

The fresh and processed fruit and vegetables value chain is presented in ***Figure 2.1***. This value chain includes several segments: inputs, production, packing and storage, processing and distribution and marketing.

The most important **inputs** for production in this industry are seeds, fertilizers, agrochemicals (herbicides, fungicides and pesticides), farm equipment, and irrigation equipment. Logistics and transportation fulfill key supporting functions, while government regulatory bodies are required to approve the sanitary and phytosanitary conditions of outbound products. Due to the fragile and perishable nature of the product, a high degree of coordination between the different actors along the chain is required. This ensures that the perishable product reaches its destination in good condition. Cold storage units are used throughout the chain to keep the produce fresh, and both air and sea freighting supported by the cold chain are key elements to ensure timely delivery.

Figure 2.1. The Fruit and Vegetables Global Value Chain



Source: Duke CGGC.

Following this, the key segment of the value chain for developing countries, **production for export,** is divided between production for fresh consumption and production for processed fruit and vegetables. In some cases, the fresh fruit and vegetables that are not accepted for sale as fresh produce are used as inputs for the processing stage, but in other cases, such as orange juice or preserved peaches, a specific variety and grade quality is required and production occurs separately. Production is organized in small, medium, and large farms that supply exporter companies and/or producer-exporter companies that own farms, but they may also supplement their supply by buying from other farms. Industry associations often play important supporting roles at this stage in disseminating information about new products, processes and best practices.

The next segment is **packing and cold storage.** The first stage of the packing segment is grading. Unacceptable low-grade produce will be redirected to processing plants or the domestic market.[12] Washing, trimming, chopping, mixing, packing, and labeling are other processes that may occur in this stage of the value chain. Once the produce is ready for transport, it is blast chilled and placed in cold storage units ready for export. Packing usually requires economies of scale due to the high costs of cold storage and other capital investments necessary at this stage; thus, this is usually carried out by large producer-exporter and exporter companies that buy the fresh fruit and vegetables and package, store, and export them.

Processed fruit and vegetables include dried, frozen, and preserved produce, as well as juices and pulps. Many of these processes add value to the raw product by increasing the shelf life of the fruit and vegetables. Processing plants purchase fruits and vegetable inputs from the producers. These firms may export their products under their own brand, as well as under the buyer's brand. The last stage of the value chain before consumption is **distribution and marketing.** In this final stage, the produce is distributed to different channels including supermarkets, small-scale retailers, wholesalers, and food services.

IV. Economic Upgrading in the Fruit and Vegetables Global Value Chain

Whilst developing countries have faced considerable challenges due to the changing nature of the value chain, a number of developing countries have achieved significant upgrading over the past two decades. This upgrading has been fostered by improved knowledge in production, advancements in logistics and shipping technologies, increased access to information about market demand and trends, and the capacity to comply with stringent standards. Today, in addition to providing off-season and year-round supplies of fruit and vegetables to key markets, many developing countries perform value-added activities that were previously carried out in developed nations.

Functional upgrading or the shift into higher-value segments of the value chain[13] in this industry has been largely characterized by its linear nature, moving from production to packing, then to processing, and finally to greater control over distribution and marketing.[14] While these shifts into higher-value segments represent important gains in revenue, evidence suggests countries only upgrade after they have successfully consolidated their position in lower segments of the value chain. For example, upgrading into processing typically fails when production levels cannot be sustained consistently over time to provide

[12] In some cases, where no local demand exists for the product, such as Asian vegetables in Honduras, rejected product will simply be destroyed.
[13] "Functional upgrading: Acquiring new functions (or abandoning existing functions) to increase the overall skill content of activities" (Humphrey & Schmitz, 2002, p. 1020).
[14] Lee et al.. (2010) suggest that the rise of the fresh fruit and vegetable exporters may indeed shift the governance of the chain with powerful suppliers challenging the large retail houses.

sufficient raw materials to leverage the capital investments made in processing infrastructure (Mungai, 2000).[15]

The main stages of functional upgrading in the horticulture value chain are described as follows:

- **Entry into the GVC through the production of fresh fruit and vegetables for the export market.** The globalization of fruit and vegetable markets has increased demand for these products in developed countries and requires improvements to logistics and transportation—such as the introduction of airfreighting for horticultural products and more sophisticated cold storage technologies—and changes to trade agreements to allow new producer countries with appropriate environmental conditions to enter the market. In several cases, this diversification into nontraditional agricultural products for export has been actively fostered by governments and donor agencies in countries looking to drive export growth through higher value, nontraditional agricultural products (Challies & Murray, 2010).
- Once the production function is attained, countries can begin to offer services in the **packing and storage** segment of the value chain in order to increase their access to key markets and avoid competition from new countries entering the bulk produce market (Jaffee & Masakure, 2005). By adopting new packing and storage techniques, producers can quickly add value to fresh fruit and vegetables. Today, sophisticated packaging systems to maintain freshness and product quality can be observed in many developing countries. In addition, these countries produce "ready to eat" products that are pre-washed, chopped, and bagged. This upgrading is driven both by supply and demand: Producers must meet minimum packing requirements to enter key high-value markets, while buyers reward suppliers that innovate and provide new prepared products that appeal to their consumers with preferred status and stable contracts (Humphrey, 2005).
- Upgrading into the **processing segment for export** has been mastered by only a few developing countries. While many developing countries successfully process produce for their domestic markets, they have yet to make the transition to processing for developed markets. Acquiring this function in developing countries requires previous success in the production stage of the value chain, due to the large quantities of produce required year round to provide these operations with adequate supplies of raw material to finance the important capital

[15] In Kenya in the 1990s, a number of initiatives in canning, jarring, and freezing were set up for the horticultural industry. However, a large number of them complained about the shortage of raw materials for the factories and operated with underutilized capacity for most of the decade (Mungai, 2000).

investments required. Upgrading into this stage requires both sophisticated infrastructure, as well as a prepared workforce to perform manufacturing rather than agricultural tasks.

- The final stage of the value chain refers to the **distribution and marketing** of the product. The United States and the EU are the principal markets in this chain. However, demand from developing countries for fruit and vegetables is also increasing as their income rises, offering important new opportunities for upgrading for developing countries.[16] While, in the past, these functions have been carried out by buyers or importer firms from developed countries, ownership and control of this function is gaining ground in some of the larger and more capable developing countries.

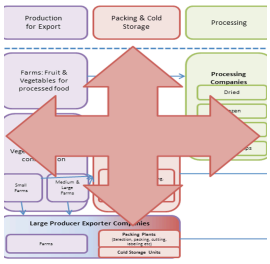
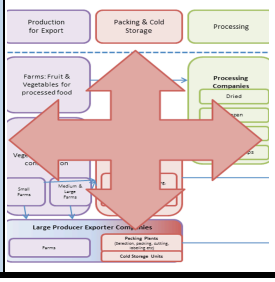
Product and process upgrading, that is, moving into more sophisticated product lines and increasing efficiency by reorganizing production or introducing superior technology, also play an essential role in this industry, and their impact should not be overlooked. Process upgrading, for example, has been essential to help developing countries meet the growing number of public and private standards. The introduction of new technologies, such as greenhouse production and health protocols in packhouses, have been key factors in protecting crops from disease both pre- and post-harvest and meeting safety standards around the world. Other key examples include product and process upgrading to cultivate and handle increasingly fragile and perishable product varieties that offer greater financial returns than more commodified fruit and vegetables, while the adoption of new shipping and cold storage technologies can allow suppliers to adapt to geographic constraints, such as size and distance from market.[17]

Table 2.2 presents examples of these upgrading trajectories in developing countries.

[16] Emerging nations such as India and China will continue to increase their demand of fruit and vegetables in the coming years due to their rising income level. China's fresh fruit and vegetables imports account for over half of total food imports, increasing from under US$100 million in 1992 to over US$600 million in 2001 (Wu Huang, 2004). India's demand for fruit and vegetables is also poised to undergo significant growth over the next five years. By 2015, India's middle class is projected to grow by about 300%, further impacting demand for foodstuffs which has seen per capita consumption of food increase in 20% in the last five years (Malik, 2009).

[17] In the horticulture sector, product and process upgrading opportunities are vast. The examples listed here are just a few of a large number of initiatives that can be undertaken by suppliers in the industry to increase their competitiveness.

Table 2.2. Upgrading Trajectories in the Fruit and Vegetables Global Value Chain

	Diagram	Description
Production (Entry in the value chain)		• Entry point for the fresh and processed fruit and vegetable value chain. • Opportunity for low-income countries to export higher value added agro products.
Packing & Cold Storage (Functional Upgrading)		• Countries looking to increase the value of their exports and to improve supply for their clients will improve their packing and cold storage systems. • This can include sophisticated packing for fresh fruit and vegetables, such as ready-to-eat products, that are pre-washed, cut, and bagged.
Processed Fruit & Vegetables (Functional Upgrading)		• To enter in this segment, countries have to master the production stage. • Countries need new infrastructure and a workforce prepared to engage in this activity.
Product Upgrading		• Improve the product characteristics. This can happen in all the stages of the value chain—production, packing and storage, and processing. • Some of the standards that have been adopted by the industry, such as GAP standards, focus on product upgrading, as well as ensuring that the sanitary and phytosanitary conditions of the product are met.
Process Upgrading		• Introduction of new technologies in the production system or the restructuring of the existing system to generate services more efficiently. • Companies implement more efficient systems in the search to improve productivity and remain competitive.

Source: Duke CGGC.

V. Workforce Development in the Fruit and Vegetables Global Value Chain

Cultivation of fruit and vegetables is substantially more labor-intensive than growing cereal crops (Joshi et al., 2004; World Bank, 2009), and the upgrading stages described in the previous section create a wide range of both production and post-harvest jobs that vary in skills and specializations.[18] Increased production has incorporated new laborers into the value chain, while the shift of packing functions to less expensive, developing nation locations has required additional hands in the packhouses to provide washing, cutting, trimming, and mixing procedures (Weinberger & Lumpkin, 2007). The industry draws principally on a young, uneducated and flexible labor force, combined with a very small percentage of skilled labor (Achterbosch et al., 2007; Best & Mamic, 2008).[19] Formal education is not a requisite for most positions in low levels of the value chain; typically semiskilled (e.g., mechanics, sprayers, drivers, information technology [IT] systems operators, etc.) and skilled labor (agronomists, nutritionists, etc.) accounts for 10% or less of the labor force in horticultural operations (Dolan, 2004). Given this, the industry is an attractive source of employment for a large segment of the population whose employment alternatives are limited due to a lack of formal education.

Table 2.3 provides an overview of the most important job profiles in each segment of the value chain.

[18] Reliable data on exact increases in employment rates are hard to obtain, partly because of the high numbers of unrecorded casual, temporary, seasonal or contract workers. See Humphrey et al., (2004) for a discussion of employment effects in this industry.

[19] In some countries, such as Chile, there is a strong focus on migrant labor to fulfill the tasks required for the industry. In others, however, such as Kenya and Zimbabwe, the industry relies on on-farm labor (Best & Mamic, 2008).

Table 2.3. Job Profiles in the Fruit and Vegetables Global Value Chain

Position	Job Description	Formal Education Requirements	Training/ Experience	Skill Level
Production for Export				
Harvest Worker	Manually plant, cultivate, and harvest fresh fruits and vegetables. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; cleaning, packing, and loading harvested products.	No formal education required	Experience/training	
Tractor/ Truck Operator	Responsible for bin placement for pickers and removal of bins ready to be stacked in trucks. Must be able to operate machinery safely, and without damaging the harvested product.	License/ certification	Technical training	
Pesticide Handler	Prepare and apply pesticides, herbicides, fungicides, or insecticides. Pesticide handlers must be thoroughly knowledgeable of the chemicals as well as proper application and disposal procedures.	Technical education	Experience/ technical training/ certification	
Irrigation Technician	Install, maintain, alter, repair, and service irrigation system.	Technical education / Bachelor"s degree	Experience	
Quality Control	Work in the field and are responsible for the quality of the harvested crop. Random samples are taken from each bin and checked for quality, size, color and maturity.	Technical education / Bachelors degree	Experience	
Packing and Cold Storage				
Packing Worker	Fills trays, wraps fruit, and packs boxes. Looks for defects in the fresh fruit and vegetables and makes sure the packed fresh fruit and vegetables are well presented.	No formal education required	Training	
Labelers	Labels packed fresh fruit and vegetables for shipment. Using computer-controlled equipment ensures traceability of produce.	Literacy and numeracy skills	Training	
Transport Driver	Transport fresh fruit and vegetables between fields and packhouses and shippers. Delivers product safely and in good condition. Manage logistical delivery and dispatch paperwork. May need heavy truck license.	Literacy and numeracy skills	Technical training/ experience	
Managers (Line/Shift)	Ensures quality of the fresh fruit and vegetables complies with industry standards. Shift managers are responsible for workflow. They solve workflow problems by people management, and liaise with the line manager.	Technical education	Management skills/ experience	
Inspector	Works at port of export, monitoring shipments to ensure they meet international standards. This position can require export certifications.	Technical education	Technical training	
Packing Manager	Responsible for the day-to-day packhouse operations, including staff management, budgeting, administration, and planning.	Bachelor's degree	Management skills/ experience	
Quality Assurance Manager	Ensures all handling of fresh fruit and vegetables is carried out according to health and safety protocols of buyers and export markets. Responsible for sampling and testing of fresh fruit and vegetables for diseases.	Bachelor's/ Master's degree	Significant experience	
Processing				
Line Workers	Transports raw materials, finished products, and packaging materials; feeds and unloads processing machines or mobile tank trucks; checks products and packaging for basic quality defects.	Literacy and numeracy skills	Technical training/experience	
Mechanics & Machinery Maintenance	Repairs, installs, and maintains industrial production and processing machinery.	Technical education	Technical training	
Production Supervisor	Instructs and trains operators; ensures good manufacturing practices (GMPs) and standard operating procedures (SOPs) are used. Monitors and verifies performance of equipment and processes, maintains logs on process and product data.	Bachelor's degree	Specialization degree production/ Management skills / experience	

Source: Duke CGGC.

Skill Level	Low	Low-Medium	Medium	Medium-High	High
					
	No formal education; experience	Literacy and numeracy skills; experience	Technical education/ certification	Technical education /undergraduate degree	University degree and higher

As can be seen in ***Table* 2.*3***, different stages of the value chain require different types of skills. The skills in the production segment are those related to the agriculture sector, and the most important job profiles include harvest workers, irrigation operators and pesticide handlers. The entry-level skills tend to be low and no formal education is required for the majority of workers. Workers responsible for irrigation systems and pesticide application, however, require a degree of technical education. The most common job profile in the packing segment is the packing worker, who selects, wraps, and places the fruit and vegetables in a tray. In other cases, they also wash, trim, chop, and pack the products. These additional handling processes often require that workers be trained in the job function. Jobs in this segment are mostly directed at women, who have come to dominate the horticulture labor force in many developing countries.[20] The skills required in the **processing stage**, by contrast, are manufacturing abilities for positions, including line workers and machine operators. In this stage, production task automation increases and there is a growing number of workers operating machines. Many of the workers need special knowledge, and as in the packing segment, in some cases may need to be certified in a job function, especially if they handle the food in some way. Other important job profiles in this segment include mechanics and other machinery maintenance positions that are essential to keep food manufacturing plants and equipment in good working order.

The importance of improving the skills of the existing horticulture workforce has been highlighted within the past two decades. These include increased complexity through strict buyers' requirements, as well as a growing participation in the production of highly fragile and niche products, rigorous enforcement of standards, and increased competition among developing countries. In production, there is growing evidence that simple training focused on maximizing productivity and minimizing losses for harvesting staff can significantly improve financial outcomes (Labarca, 1999). A clear example of this is skills training in handling fruit and vegetables. Productivity problems can be rapidly overcome by short training sessions and/or on-the-job training, with respect to manipulation techniques that do not require large investments and are relatively simple and easy to learn (Neid et al., 2010).

Extensive training for appropriate pest control, including pesticide handling and use, has also become increasingly important for producers due to restrictions on both the quantity and type of pesticide that can be used in the cultivation of fresh produce (Smith et al., 2004).[21] In the packing and processing segments, both public and private standards have led to an emphasis on health and food safety training, as

[20] Women make up at least 50% of the total horticultural workforce in Chile, Ecuador, Guatemala, Kenya, Mexico, South Africa, and Zimbabwe, and an estimated 70%–80% of workers in higher paying value-added activities, such as packing, labeling, and bar-coding produce (Dolan, 2005). Wages in value-added activities, such as packing are higher than farm work (Dolan & Sorby, 2003), although in general female workers continue to receive lower wages than their male peers (Dolan, 2004).

[21] These restrictions are usually included in buyer codes of conduct and are the result of increased concern for consumers ingesting pesticides, as well as the workers exposed to chemicals in the cultivation process.

well as quality food presentation in packhouses that provide ready-to-eat products. This job leverages "life-long training" of the predominantly female workforce that has been involved in food preparation for most of its life (Bamber & Fernandez-Stark, 2011).

As the industry continues to evolve, diverse models of workforce development across different stages of the value chain are likely to emerge, shaped both by the nature of the participating firms and the particular training and institutional frameworks of the host nation. Country cases in the remainder of this report explore the variety of private, public, and multisector workforce development strategies that have been undertaken in five developing countries to support these market-entry or upgrading efforts of firms and countries in the horticulture value chain.

VI. Developing Country Case Studies

In this section, we analyze the horticultural industry of five developing countries, representing both low- and middle-income economies. As shown in the ***Table 2.4***, Chile is the country that has achieved the greatest value chain advancement in the sector. In 2008, Chile exported US$2.6 billion in fruit and vegetables and upgraded into the processing segment. Kenya and Morocco exported close to US$1 billion each. Of the two, Kenya has been more successful in its upgrading initiatives, taking on an important role in providing packing services for major supermarket chains in the EU. Morocco currently exports more than Kenya, electing to diversify its export market rather than upgrading or adopting higher standards to serve European demand. Jordan and Honduras offer two examples of smaller countries that are entering the value chain; in 2008, Jordan exported US$440 million and Honduras US$250 million of horticultural products. These two countries continue to operate in the lower segments of the value chain, exporting loosely packed products primarily to regional markets. These cases reveal distinct workforce development initiatives that were engaged to help drive upgrading.

Table 2.4. Selected Economic and Industry Country Indicators, 2008

	Chile	Kenya	Morocco	Jordan	Honduras
Gross Domestic Product (GDP) (current US$) (bn)	170	30	89	21	14
GDP per capita (at PPP; $US)	13,390	1,432	3,938	5,137	3,633
Agriculture % of GDP	3.9	27	14.6	2.9	13.6
Horticulture exports[a] ($US million)	2,580	921[c]	1,060	442	252[d]
Fruit and vegetables processed products exports	1,500[b]	136	151	33	25
Exports fresh and processed fruit and vegetables as % of total exports	6.1	21.1	6.0	6.1	11.6
Total labor force (thousand)	7.1	18.2	11.8	1.9	2.8
Employment in agriculture (% of total labor force) 2005	13.2	18.6 (1999)	47	3.6 (2006)	39.2
Employment in horticulture	450,000	500,000	400,000	67,000	15,000
Employment in processed fruit and vegetables	24,000	NA	NA	NA	NA
Entry year	Early 1980s	Late 1970s	Late 1970s	1980s	Mid-1980s
Entry point	Fruit farming	Vegetable farming	Fruit & vegetable farming	Vegetable farming	Vegetable farming
Highest value activity	Processed fruit & vegetables	Prepared fruit & vegetables	Packaged fruit & vegetables	Packaged fruit & vegetables	Packaged fruit & vegetables
Export market	Global	EU	EU & Russia	Regional and (some to EU)	U.S. and Regional

Notes: [a]: This includes only fresh fruit and vegetables (not processed fruit & vegetables); [b]: This data does not include wine. The wine industry exported US$1,400 mil. in 2009; [c] Figure includes income for cut flowers (Dolan, 2004); [d]2007.

Sources: Foreign Investment Committee-Chile, IMF,Instituto Nacional de Estadistica (2003), Honduras; Jordan's Department of Statistics, Kenya National Bureau of Statistics, 2009; ODEPA-Chile; UNComtrade; WDI.

The case studies are structured as follows: First, each case presents an overview of the current state of the industry, highlighting the principal features of the workforce and related development initiatives in the country. This is followed by an examination of key stages of industry development, followed by the identification of the most important workforce development strategies implemented to foster upgrading during each stage. Particular attention is paid to identifying the composition of the firms in the industry and the institutions involved in workforce development to identify best practices.

A. Chile[22]

The horticulture sector in Chile has rapidly expanded, and it continues to add value to fruit and vegetables production through the growing incorporation of processing (OECD, 2008b; Portilla, 2000). In 2009, Chile exported US$3 billion in fresh fruit and more than US$1.5 billion in processed fruit and vegetables in 2008. Today, more than 65% of the country's horticulture production is exported (López, 2009), and Chile accounts for 50% of the fruit exported from the Southern Hemisphere. In 1990, this share was only 25%. Its major export markets are the United States and Canada (35%), EU (35%), and Latin America (16%) (ASOEX, 2009). Fruit farming and agribusiness are prioritized economic sectors within the country and actively supported by the government (Foreign Investment Committee-Chile, 2009). Key produce exports include, in decreasing order, grapes, apples, cranberries, cherries, kiwifruit, avocados, pears, peaches, and plums (UNComtrade, 2011). The export of fresh vegetables represents only a small portion of the sector, with total exports in 2008 reaching US$43 million (UNComtrade, 2011).[23] Chile's fruit and vegetable industry has expanded due to several factors that include excellent climate, economic openness, political stability, and concerted efforts by both the private and public sectors to improve competitiveness by increasing coordination between different stakeholders (ODEPA, 2005).

Industrial Organization

The industry has over 7,800 fruit producers and 518 exporting companies. It includes a mix of both foreign and local producer-exporter companies. Large foreign producer-exporter companies include Dole, Unifrutti, and Del Monte, although large domestic companies including Rio Blanco, David del Curto, and Frusan significantly contribute to both production and exports (Gwynne, 1999; Moraga, 2010). Approximately 50% of exports are controlled by the producer-exporter companies and the remaining 50% by exporters that buy the products from farms. Leading companies in the processing stage are also a mix of foreign and domestics firms, including Hortifruti, Vital Berry, Invertec, Aconcagua Fruit, Agro Food Central Valley, and Frutos del Maipo. These processing companies export their name brand products and also produce private label products for foreign supermarkets (Lopez, 2010).

Workforce Development

Qualified labor is important to remain competitive and meet the strict global public and private standards (ODEPA, 2005). Human capital has been identified as the only controllable factor in the industry (Lopez, 2010). Horticulture draws on a relatively well-educated workforce compared with other developing countries, and the literacy rate in Chile of 96% facilitates training and development (Vergara,

[22] The Chile country case was developed by Karina Fernandez-Stark.
[23] Given the limited relative size of vegetable production in Chile, the discussion in this section draws principally on fruit production.

2010). Building on this foundation, the government, together with industry associations, has established sophisticated evaluation and training initiatives to professionalize the sector. Importantly, the government has organized a system of training, including a labor skill certification system (see ***Box 1*** in Section VII). In addition, at the higher level of the chain, local universities graduate over 7,000 undergraduate and 700 master-level students in agronomy per year (Ministerio de Educación, 2008). In addition, technical schools offer courses in agricultural engineering, and leading universities offer undergraduate, graduate, and doctoral programs in foods engineering.

Stage 1. Production (export of fresh fruit and vegetables): 1980–Present

Chile entered the global fresh fruit and vegetables chain as a producer country during the 1980s.[24] Export growth was facilitated by a series of government-led economic changes that featured an export-oriented policy, reduced trade barriers, privatization of state-owned firms, and attracting Foreign Direct Investment (FDI). During this early period, Chilean producers specialized in the export of fresh fruit, such as grapes and apples, but later they developed new fruit varieties, including kiwi fruit, raspberries, and blueberries. The Chilean Fresh Fruit Association actively courted buyers in key markets in the United States and the EU, organizing visits to the country and hosting events at promotional conferences in both destinations.

During the 1990s, the industry began to consolidate. Many small-scale farmers sold their land to large fruit-exporting companies and exited the industry. Some of that land was later sold to large-scale farmers, as well (Portilla, 2000). In the mid-1990s, producers came under pressure with the introduction of new safety and quality standards imposed by global buyers and SPS regulators in key markets. In response to this, the government and the private sector worked together to proactively create Chile's safety and quality standards (Government of Chile, 2002; ODEPA, 2005). In 2003, ChileGAP was created as a private GAP certification program that harmonizes the most widely accepted requirements of the international market and offers Chilean growers and exporters the tools to implement these GAP requirements at the lowest possible cost.[25] This was recognized and accredited by GlobalGAP in 2008 (ChileGap, 2003, 2010). In addition, in 2004, a Public-Private Strategic Council was created to foster further development of this sector. This council has created a series of programs that include fruit genetic improvement, transfer of knowledge, improvement of worker productivity, and fruit safety among others (CORFO, 2010).

[24] In 1980, Chile exported less than US$150,000 in fresh fruits (Guerra, 2010).
[25] ChileGAP was created by Fundación para el Desarrollo Fruticola, a nonprofit research organization founded in 1992 by exporters in the fruit industry. In 1998, membership was expanded to include vegetable exporters.

Workforce Development. During this period, temporary work became increasingly popular due to the cyclical nature of fruit production and women became a key part of the temporary labor force (Gwynne, 1999). Today the sector employs around 450,000 people in production, packing, and processing, equivalent to 5% of the country's total labor force (CORFO, 2010; Lopez, 2010).[26]

In 1999, the first organization specifically focused on developing training programs for the sector, AGROCAP, was created with sponsorship from the Association for Fruit Exporters (ASOEX). This organization acts as an intermediary between producers, private training institutions, and the state employment and training agency, Servicio Nacional de Capacitación y Empleo (SENCE). Specifically, AGROCAP ensures that training meets the industry's human capital needs in addition to disseminating good workforce development practices (Vergara, 2010). By 2010, the organization had facilitated training for over 100,000 workers. In addition, at the end of the 1990s, the National Labor Skills Certification System (NLSCS) (see ***Box 2.1***, Section VII) was established as a joint initiative between the Ministries of Economy, Education, Labor and Social Security, and Horticulture was included as one of 15 key industries in the country.

Skills and competencies for every job in the sector were profiled and compiled with the help of the private sector. These results were shared with technical training institutions to ensure that educational programs met industry needs. In addition, practical examinations were made available for workers already in the industry to certify their competencies regardless of how these were acquired. More than 9,000 workers in the fruit and vegetable sector have been certified to date. Through its economic development agency, Corporación de Fomento de la Producción (CORFO), the government made financing available for training to facilitate the adoption of private quality standards (ASOEX, 2007).[27]

Stage 2. Packing and cold storage: 1985–Present

By the mid-1980s, producers and exporters in Chile were looking for new opportunities to maximize on their success in the cultivation of fresh fruit products. Several firms developed creative and effective solutions to pack fresh fruit shipped to the United States and also to Europe, while buyers in these markets were beginning to look for improved presentation and packaging. By this time, "Plan Frutícola," launched by CORFO in the late 1970s to study the behavior of different fruits in the cold chain, was beginning to yield results; the first packing and cold storage units were established throughout Chile (Portilla, 2000). Extensive infrastructure improvements were made to highways and ports during the 1990s, reducing transportation times. In addition, the Ministry of Agriculture (MOA) streamlined SPS processes and protocols for packhouses with the establishment of two key certifications. In 1982, the Servicio de

[26] 150,000 are permanent workers and 300,000 temporary workers.
[27] GlobalGAP, Nature's Choices (Tesco private standard), ISO 9001 and HACCP among others.

Agricultura y Ganadero (SAG), under the MOA, collaborated with ASOEX and the USDA Animal and Plant Health Inspection Service (APHIS) to develop a specific protocol (SAG USDA) for shipping fresh fruit and vegetables to the United States. SAG origin was also created for export certification for all other countries (Servicio Agricola y Ganadero (SAG)- Ministerio de Agricultura de Chile, 2011a). These certifications cover the entire cold chain (Servicio Agricola y Ganadero (SAG)- Ministerio de Agricultura de Chile, 2011b).

The private sector has played a clear role in this stage, adding state of the art infrastructure (Portilla, 2000) and packing techniques in order to reach new markets and guarantee freshness. For example, one Chilean fruit company created special packaging that allows fresh cherries to be shipped to China. As a result of this new technology, cherries can now be sent by sea instead of airfreight, maintaining quality and increasing price competitiveness (Moraga, 2010).

Workforce Development. To facilitate upgrading in the packing segment, exporters began to recruit and train workers for their packhouses. Women were employed principally for the selection of fruit and packing and men in technical jobs, such as controlling the equipment (Portilla, 2000). The incorporation of childcare facilities in the sector played an important role in attracting women into the labor force (Collins, 1995). SAG provided training for the new USDA and Origin protocols for packhouse, storage, and transportation workers (Vergara, 2010). The NLSCS also provided certifications for packhouse workers. Firms installing packhouse equipment, such as sorting machines, provide workers with training on how to use them.

Additionally, training has focused on the administrative work required to track the movement of fruit and vegetables from the farm to the final destination. On-the-job training has been essential to learn the paperwork required to export fresh fruit and vegetables to the world. The content of this training is based on current export procedures around the world, such as SPS and customs procedures.

Stage 3. Processed fruit and vegetables: Mid-1990s–Present

In 2009, Chile exported more than US$1.5 billion in processed fruit and vegetables, compared to US$100 million in 1990. Between 2000–2006, processing plants absorbed 52% of total fresh fruit and vegetables produced by the country (Chilealimentos, 2010a; ODEPA, 2010). The sector goal is to reach an annual growth rate of 10% in processed fruit and vegetables exports by 2017 (CORFO, 2010). Several actors have been involved in this industry upgrading process. The private sector has played a central role, investing in capital goods to be competitive in the global market (Portilla, 2000), training workers, and also innovating in products and processes.

Workforce Development. By 2010, the processed fruit and vegetables industry had created around 24,000 direct jobs and 225,000 indirect jobs (CORFO, 2010). Different programs have been established in conjunction with the private sector to train workers, particularly with respect to use of processing machinery. These include the extension of Chile's FDI High Tech Investment program to processing operations and finance skills upgrading for both semi-skilled and skilled workers, access to CORFO grants, and SENCE programs through tax incentives. Leading universities also began to offer undergraduate, graduate, and doctoral programs in foods engineering.

Table 2.5 shows the most important workforce development initiatives in the different segments of the value chain. Many of these initiatives are transversal to all three stages.

Table 2.5. Chile: GVC Upgrading and Workforce Development Initiatives

Stage 1: Production for Export 1980s—Present	Stage 2: Packing and Storage 1985—Present	Stage 3: Processed Fruit and Vegetables Mid-1990s—Present
Production for Export	Packing & Cold Storage	Processing
Private Sector Workforce Initiatives		
• The private sector created internal programs to train their workers. These skills are in line with the needs of the international markets. Worker training is a popular practice, especially with the top companies of the sector.		• Training to meet HACCP standards.
• Fruit export companies create training systems to improve quality and safety. Large exporters train small and medium farmers to meet global standards.		
Public Sector Workforce Initiatives		
• Government Scholarships for Chileans to study in universities in California (Cepal). • CORFO created "Plan Fruticola" in which Universidad de Chile and INIA partnered to prepare skills for people to advance in technical areas. • The government created a subsidy for plantations that granted more than US$ 60 million, including a training component.		
• In the last two decades, education levels in the country rose, providing important human capital for the industry, which was in need of better educated workers due to the increased complexity of the tasks. • The Chilean government offers tax incentives for foreign investors through the High Tech Program. One of these tax incentives is the personnel training (25% of employee's gross annual wage) and a program for hiring experts (up to 50% of the cost of training or hiring). • CORFO created two programs to enhance the workforce in the sector. One refers to supplier development and the second is the program of technical transfer		
Multisector Workforce Initiatives		
• OTIC-AGROCAP started in 1999 training workers in the agro sector and, to date, has trained more than 100,000 workers. In 2009, they trained an additional 17,128 workers from 1,590 companies. They have made and annual investment of US$ 2 million. OTIC AGROCAP has entered into a number of agreements with public and private institutions to further develop human resources in the industry. These include agreements with the Ministry of Agriculture, FUCOA, PRODEMU, Fundación Chile, ChileAlimentos, the College of Agronomical Engineers, and a number of trade associations formed by regional growers. • In 2002, the government, private sectors, and other stakeholders created "Buenas Practicas Agricolas" (Good Agricultural Practices), as well as training programs to accompany this standard. During 2006, nearly 12,000 workers received training—4,262 on management topics, 2,827 on quality and hygiene, 2,644 on production techniques, and 2,267 on other topics. Training was covered under SENCE. • A number of industry actors created the program focused on skills certification. Over 9,000 workers in the sector have been certified. This program has also a training component for the workers that present specific skill gaps (see ***Box 1***). The certification includes jobs in the production, packing, and processing stages of the value chain. • In an effort to promote education as a means of overcoming poverty, ASOEX, together with OTIC AGROCAP and the Study, Consulting and Training Institute (IEAC) has conducted a number of academic equivalency courses for workers in the industry. For this purpose, resources from the ChileCalifica program and the SENCE 2006 Tax Franchise for Academic Equivalency have been used.		

Source: Duke CGGC.

B. Kenya[28]

The Kenyan horticulture sector today accounts for approximately US$1 billion[29] in export revenue, and the industry is the country's key source of foreign exchange, accounting for 21% of total country exports in 2008 (Kenya National Bureau of Statistics, 2009; UNComtrade, 2011). The country's leading export markets include France, the Netherlands, Spain, the United Kingdom; major products include French beans, Asian vegetables, avocados, passion fruit, and mangos, among others.[30] The horticulture industry has continued to evolve and upgrade over the past three decades and has become a highly sophisticated supplier of pre-packaged, unprocessed fruit and vegetables. The sector focuses on high-value, lightweight fruit and vegetables that cost less to transport, thus exports are dominated by airfreighted products. A significant proportion of Kenya suppliers currently export "ready to eat" (chopped/trimmed, washed, and mixed) fruit and vegetables. Some exporters also provide store labeling to ensure the product goes directly to the supermarket shelf (Fresh Produce Exporters Association of Kenya, 2010).

Industrial Organization

The industry's growth was based on a high involvement of smallholder producers, which in 2004, accounted for approximately 60% of exported fruit and vegetables; however, this share has declined considerably since the implementation of private standards. Although they have become more organized through farmers' groups to increase their bargaining power with exporters and reduce individual risk in face of changing demand for products, smallholders now account for just 30% of production. At the higher end of the chain are a small group of approximately 12 Kenyan producer-exporters with their own production farms and extensive packing installations (S. Ouma, 2010). These exporters are well organized, with advanced technologies in cold chains and logistics, and their final products include fully packaged "ready to eat" convenience fruit and vegetables. The largest of these firms, Flamingo Group, also owns a distribution and marketing agency in the United Kingdom (Flamingo Holdings, 2010). These exporters have begun to expand geographically, establishing operations in Guatemala, Peru, and South Africa that are used to help smooth supply. Foreign firms have played a more limited role, such as Del Monte, which has focused on pineapple production and processing.

[28] The Kenya country case was developed by Penny Bamber.
[29] Figure includes income for cut flowers. In 2001, cut flowers and fresh vegetables accounted for 53% and 40% of total horticultural exports respectively, Gachanga 2002, cited in (Dolan, 2004).
[30] Others include artichokes, sweet corn, snowpeas, courgettes, baby carrots, and asparagus.

Workforce Development

The horticultural sector provides considerable employment in both rural and urban Kenya (Fresh Produce Exporters Association of Kenya, 2010).[31] This growing workforce can be divided between two key segments: (1) farm workers, and (2) packhouse labor. Farm labor is typically rural, while employees in packhouses are based in urban centers close to Kenya's international airport. Employment in these segments is gender-biased, with women playing an important role in packhouses, in particular.

Prior to the introduction of standards during the mid-2000s, workforce development was focused mainly on increasing productivity on farms, although external training was carried out on an irregular basis, and the private sector provided on-the-job training for many of their staff in both production and packhouse segments of the value chain. The introduction of global quality and safety standards led to a widespread increase in training to help maintain Kenya's competitiveness and prevent the large number of smallholders from being forced out of the industry. This included training carried out or financed by foreign governments and NGOs. The Kenyan government did not play an active role in workforce development until recently, approaching the industry with a "laissez-faire" attitude (Steglich et al., 2009).[32] In 2010, the government committed to revamping the public technical and vocational training in the country, with plans to open 13 new polytechnic institutes (Nganga, 2010).[33] Key lines of study will focus on refrigeration and food technology. In the past, educational institutions—including the Jomo Kenyatta University of Agriculture and Technology—focused principally on agricultural activities, although as more packing functions were adopted by the industry, new degree and diploma programs have been offered in post-harvest management, nutrition and food technologies.

Two key upgrading stages can be identified in the evolution of Kenya's horticultural industry:[34]

[31] FPEAK reports that 4.5 million people are directly employed by the sector, including employment in the production of cut flowers and informal laborers. This number, however, is questionable. A 2005 simulation of employment effects of the changes to industry structure following the introduction of standards and functional upgrading in Kenya indicate a positive correlation with employment growth, yet it is unlikely that since 2000, employment figures have grown from 500,000 employees to 4.5 million (Humphrey et al., 2004).

[32] Schapiro & Wainana (1991) note that the Kenyan government played a supporting role in the 1960s in providing training resources through the Horticultural Crops Development Authority (HCDA), but this institution was not sufficiently funded or staffed to meet the demands of the industry. They attribute the success of the industry to a lack of government interference with the exception of providing the required infrastructure.

[33] This is being carried out with funds from donor agencies together with the African Development Bank.

[34] While Kenyan suppliers have seen tremendous success in increasing the value added to their produce within the packaging stage, they have been less successful in upgrading into the processing segment of the value chain. Processing in Kenya is still largely limited to the production of fruit juice and canned pineapples. Both of these operations have been significant exporters since the early 1970s (Minot & Ngigi, 2004). However, there has been little application of this experience in the rest of the horticultural industry, indicating difficulties in knowledge transfer, which has limited upgrading into the processing segment in the country as a whole. The major losses of fruit and vegetables during the Icelandic volcano episode in April 2010 further highlighted the lack of both processing capacity within the country, as well as shipping alternatives. Once cold storage units were full, there were no alternative uses for the produce (Ross, 2010).

Stage 1. Production (export of fresh fruit and vegetables): Late 1970s–Present

Kenya has been actively involved in horticulture production for over half a century. In the 1970s and 1980s, the country entered into the GVC, exporting fresh fruit, vegetables, and cut flowers to Europe (Minot & Ngigi, 2004). Strong growth continued through the 1990s and the sector expanded substantially within the country. Between 1993 and 1999, exports grew by 206% in value and 53% in volume. By 2008, horticultural products for export had reached US$916 million (Kenya National Bureau of Statistics, 2009). As growth continued, producers concentrated further on higher-value produce, with French beans and chilis being favored over tomato and potato production.

Early growth was facilitated by a number of factors. As the import market in Europe began to grow, Kenya was well positioned to become a leading provider. The Kenyan climate, facilitated by greenhouses and improved technologies in irrigation and water management, allows for almost year-long production of most fruit and vegetables. The land ownership structure in Kenya was well suited for horticulture rather than other agricultural use, following the land redistribution policies of the early independence years that favored small family-owned plots over commercial plantations. Production in Kenya was linked with the wholesaler markets in the United Kingdom through an extensive network of South Asian families living in both countries (Djikstra, 1997). The growth of tourism to the region also increased the frequency of flights to and from Kenya and expanded the possibilities for air freighting produce to key markets (Minot & Ngigi, 2004).

This expansion, however, was complicated in the late 1990s by the entry of the U.K. supermarket chains into the fresh fruit and vegetable markets (Dolan & Humphrey, 2004). As these supermarkets gained market share, they forced substantial changes along their supply chains, increasing the demand for quality, consistency, reliability of supply, efficiency, conformity with external standards, and value-added processing from their Kenyan suppliers (Dolan & Humphrey, 2004). In addition to these rigorous individual private standards, new collective standards—EurepGap and subsequently GlobalGap—were also introduced in the horticultural sector. The expense of this process upgrading was beyond the reach of many smallholders, which resulted in a reorganization of the industry and a consolidation of large exporters.[35]

Workforce Development. Two separate workforce trends can be identified: first, initiatives associated with the growth of the industry and expansion of production; and second, those initiatives that

[35] There is some debate in the literature with respect to the impact of GlobalGap standards on smallholders in Kenya (Dolan, 2004; Humphrey, 2009; S. Ouma, 2010; Reardon et al., 2009). Jaffee (2005) notes that exporter firms responded by segmenting products, using in-house or trusted suppliers,where the most stringent standards are enforced for highly demanding clients, and outsourcing more broadly, where these standards are more limited (Jaffee & Masakure, 2005).

were associated with the introduction of standards in the GVC, which required widespread training to maintain Kenya's position within the chain.

First, expansion of supply, as well as the addition of new higher-value vegetables, required internal workforce training initiatives in the private sector.[36] Given that formal education is not a requirement in this sector, the country initially drew on a semi- and unskilled labor force (Dolan, 2004), leveraging Kenya's long agricultural tradition, where there was a supply of trained labor for certain functions, such as irrigation and pest control. A number of educational institutions, including the National Horticultural Research Station at Thika, provided training and degree programs in agriculture and horticulture, helping to provide an adequate supply of agronomists and management talent needed to expand production and engage in product innovation. Agronomists on producer-exporter farms also experimented with new varieties, and subsequently ran training programs for the company's outgrowers (Jaffee & Masakure, 2005).

More significant training, however, occurred in response to the implementation of the GlobalGap standards in the country. These initiatives were driven by the private sector, on the one hand, and multiple stakeholders led by foreign aid agencies, on the other, and were mostly directed at training Kenya's large smallholder farming community in traceability and pesticide use. Private export firms had long relied on the supplemental output from smallholder farmers to meet export demand and thus needed to ensure these farmers could help meet the new requirements. Where contractual arrangements were in place between private exporters and smallholders, farmers were trained in the exporter's production guidelines for the core export crops, dealing with quality, safety, and pre-planting environmental impact (Dolan, 2004; Jaffee & Masakure, 2005).[37] Their agronomists worked with farmers, often attending farmer meetings to ensure that lessons were reinforced across the group. In addition, the private sector represented by industry associations played an active role in disseminating GAPs among all outgrowers (even where there were no contractual arrangements in place) and helped develop a Kenyan Code of Conduct for the production of fresh fruit, vegetables, and cut flowers (Humphrey, 2009). In 2010, this code was rolled out for the domestic market, as well as KenyaGap. Both FPEAK and Kenyan supermarkets provided training programs for local producers (Fresh Produce Exporters Association of Kenya, 2010).

Multiple aid agencies and foreign governments[38] funded training programs focused on smallholders to ensure that they were not eliminated from the value chain (see *Table 6* for further details).

[36] These initiatives correspond to both the pre- and post-implementation of quality standards in the GVC. It should be noted that the different standards introduced provide protocols for controlling different aspects of production and post harvest handling, but they do not provide instruction as to how to produce a new product given its particular characteristics.
[37] Exact details of this training are not available, although in most cases farmers receive handouts and protocols and verbal instructions.
[38] Including the EU, Germany, Japan, the Netherlands, the United Kingdom, and the United States.

These organizations worked together with numerous local Kenyan institutions and the private sector to provide both training and technical assistance to the smallholder community. In May 2010, in a key collaborative initiative, the industry association, FPEAK, together with several public and private educational and training organizations, began recruiting trainers for a new Horticulture Practical Training Center partly funded by the Government of the Netherlands. This center is focused on capacity building for employees of large commercial farms, smallholders and extension staff in all stages of Kenya's horticulture value chain (M. Ouma, 2010).

Stage 2. Packing and cold storage: Late 1990s–Present

Kenya began to upgrade into the provision of pre-packaged fruit and vegetables in the late 1990s. When exports focused on the wholesale market, little packaging was required and much of the produce was shipped in bulk. However, as the supermarkets gained market share and competition between different chains such as Tesco, Sainsbury's, and M&S increased, these firms sought to lower costs, pushing much of the packaging back to developing countries.

In response, Kenyan exporters began to offer pre-washed and packaged fruit and vegetables, which would then be prepared for sale in additional packing centers in the United Kingdom. These firms made significant investments to upgrade their packhouses from relatively simple structures to more sophisticated operations (Jaffee & Masakure, 2005). Major investments went into air-conditioning and ventilation systems, water purification, blast coolers, and a wide variety of equipment to attain very high standards of hygiene within the packhouse operations. A few companies also invested in their own onsite laboratories for product and staff health tests (Jaffee & Masakure, 2005). As a result of this progress, many export firms began to take on more packaging functions, including washing, trimming, slicing, mixing, packaging, and labeling. Recently, packing fresh fruit and vegetables to offer "ready to cook/eat" alternatives has become an important part of the Kenyan horticultural business.

Today, almost all exporters have large packing facilities within the Kenyan International Airport complex, where the produce is processed for delivery to the EU within 24–48 hours. Continued growth and expansion are supported by constant engagement with buyers through trade missions to principal markets. In 2010, in response to growing demand for packaging products, a leading packaging manufacturer from the United Kingdom established operations in Kenya to provide a full range of packaging products and services in-country for firms exporting products to the United Kingdom (Paragon Print & Pacakaging, 2010).

Workforce Development. The shift toward increased packaging in the country of origin has also led to increased employment for Kenya (Dolan, 2004). While this employment, like that on the farms, continues to rely on largely unskilled labor with basic training in specific job functions (Dolan, 2004),

packhouse operations must employ highly qualified personnel for quality control and supervisors who can guarantee that the exported product meets the wide variety of safety and quality standards (Jaffee & Masakure, 2005). As noted in Section V, this position requires high levels of skills, along with formal education in addition to HACCP and ISO training certifications. Two universities and three higher education institutes in Kenya launched diploma and degree programs in Food Science and Processing Technology, focused on developing these skills for horticulture.[39] Graduates of the diploma programs enter the industry as first line supervisors in the packhouses. The University of Nairobi has had a well-established program offering a Master's degree in Food Sciences and Technology and Nutrition since 1985.

First-line managers and supervisors also receive training in sexual harassment and discrimination to improve their management techniques (Sixsmith, 2010).[40] This is key, since packhouses tend to employ a high proportion of female workers compared to males (Dolan, 2004). Senior staff within the packhouses typically require significant experience (generally five years or more in managerial positions), in addition to undergraduate degrees in agriculture or related fields. Senior, mid-level, and clerical staff are trained in the use of new technologies for labeling, bar codes, and traceability. Most training for the use of these systems is conducted onsite by the provider.

Supervisors and quality control staff are often responsible for providing training for the "unskilled" labor at this stage. This training is typically "on-the-job" and oriented to maintaining the high standards required for sale in the EU, such as quality and hygiene requirements. Workers are often trained in multiple operations, including packing, grading, trimming, and bar-coding, allowing them to be easily moved across job functions to meet fluctuating demand (Dolan, 2004). Furthermore, in some packhouses, productivity is measured at the team level, reducing the need for further supervision staff (Wambalaba & K´Ahol, 2006).

Finally, in the face of more stringent global standards, and as the Kenyan industry upgraded into additional packaging functions, labor hiring began to move from predominantly temporary labor in the packhouses to a contract basis (Jaffee & Masakure, 2005). This allows firms to capture the returns of training by locking in employees for longer duration, as well as to monitor the health of the staff to prevent contamination. Indeed, firms began to use healthcare professionals to manage the health of the staff working in the packhouse (Jaffee & Masakure, 2005). In addition, some firms provide on-farm training facilities focused on improving adult literacy and computer skills (Fairtrade Foundation, 2010).

[39] These include Mount Kenya University, University of Nairobi, Jomo Kenyatta University of Agricultural and Technology, and the Nairobi Institute of Technology. (Mount Kenya University, 2010).

[40] In 2010, Flamingo Kenya had trained 40 trainers to continue to provide this Ethical Trading Initiative training program that is also being rolled out in South Africa (Sixsmith, 2010).

Table 2.6 provides an overview of the corresponding workforce initiatives that were carried out in Kenya as the country's fruit and vegetable sector upgraded along the value chain.

Table 2.6. Kenya: GVC Upgrading and Workforce Development Initiatives

Stage 1: Production for Export Late 1970s	Stage 2: Packing and Storage Late 1990s
	
Private Sector Workforce Initiatives	
• Formal education is not relevant for unskilled labor. • Training relevant for the limited semi-skilled and skilled labor, such as irrigation and pest-control roles. • Private sector firms provide training in new techniques for smallholder suppliers. • Large exporters hired a longer-term labor force and provide training to ensure high European standards are met. • Small growers are trained in the exporter production guidelines for the core export crops, dealing with quality, safety, and pre-planing environmental impact. Agronomists working for the exporters provide training and monitoring of smallholder groups to ensure quality of supplemental supply.	• As companies increase their packaging processes, hiring is expanded to include health specialists and food technologists to ensure that high level sanitary and health standards are met (Jaffee & Masakure, 2005). • Exporters principally responsible for innovation and thus are motivated to provide training to support experimentation and improvement (Steglich et al., 2009). Two Kenyan universities and three higher education institutes launch 3- and 4-year degree and diploma programs in Food Science and Processing Technology to train first-line supervisors for packhouses.
Public Sector Workforce Initiatives	
	• KIRDI involved in the training and development initiatives in the limited processing sector.
Multisector Workforce Initiatives	
• USAID funds project to provide technical assistance and overseas training in production, post-harvest handling, agro-processing technologies, institutional development, and export marketing to Kenyan companies. • Through the KHDC program, several USAID-funded training initiatives have focused specifically on smallholders and continued through 2010. • KHDC also offers managerial and institutional training through its partners. • Farmers trained in nursery techniques to improve the quality of the seeds provided. • As the sector adopted the GlobalGap-EurepGap standards, there was significant support from multinational organizations—including government agencies from the EU, Germany, Japan, the Netherlands, the United Kingdom and the United States, as well as NGOs, the Kenyan government, and private sector companies— to provide education and know-how to both large and smallholder providers. • Particular focus on integrated pest-management training that helps to reduce pesticide use, increasing quality, and lowering health risks. • The industry association, FPEAK, developed a Code of Conduct to help both exporters and outgrowers to meet the high standards of European market. In 2010, this code was renamed KenyaGap, with new standards being introduced for the domestic market. FPEAK, along with supermarkets, provided training in the standards to smallholders.	• Funded by the Rockefeller Foundation and the Gatsby Charitable Foundation, Africa Now, Honey Care Africa, Kenya Agricultural Research Institute (KARI), and MOA established a training program to help smallholder fresh fruit producers learn how to dry their fruit using solar panels to ensure they can sell their processed fruit on the market. • Six universities and colleges in Kenya offer degrees and diplomas related to horticulture, while a number of other institutions offer degrees in food sciences and processing technologies. The University of Nairobi also offers a doctoral program in this area.
• In May 2010, FPEAK—together with KARI, the Kenya Flower Council, and HCDA—began recruiting trainers for a new Horticulture Practical Training Center, partly funded by the Government of the Netherlands. This center is focused on capacity building in all aspects of the horticulture value chain in Kenya. Courses will be focused on employees of large commercial farms, smallholders and extension staff.	

Source: Duke CGGC.

C. Morocco[41]

In 2008, Morocco exported US$1.06 billion in fresh fruit and vegetables (UNComtrade, 2011). The country's two leading export markets are France and Russia.[42] Tomatoes are the largest single export item at nearly a quarter of total earnings, while a variety of citrus fruits accounted for nearly 40% of the earnings. Processed horticulture exports amounted to US$151 million in 2008, with frozen strawberries accounting for over half of this total. Other important horticultural exports include melons, peppers and potatoes. Morocco's horticulture sector benefits from a number of natural advantages. Its temperate climate allows year-round production, including in Europe's winter, when prices are higher, and its historic relationship with France gave the country access to one of Europe's biggest markets.

Industrial Organization

The export horticultural sector in Morocco has become increasingly consolidated over the past three decades following the withdrawal of the government from the industry during the economic liberalization programs of the 1980s. Consolidation occurred to a large degree in response to changes to European trade regulations (Aloui, 2001), and the introduction of SPS and quality standards to implement improved information transfer to ensure traceability of supply. Since the early 1990s, exporters have dominated the value chain in Morocco, controlling networks of packing facilities and managed their own farms or relied on large farms for their supply (Aloui, 2001; Aloui & Kenny, 2005; Hadad, 1995). By 2007, just seven exporters accounted for 70% of Morocco's fresh fruit and vegetable exports (Aloui, 2001; Benhaddou, 2007).[43] The top five firms are ROSAFLORE, ARMONA, MARISSA, AVRYL, and GED; these firms are vertically integrated throughout the chain in production, shipping, and marketing. Due in part to legal restrictions on foreign ownership of land, locally owned firms are important players in the production segment of the value chain.[44]

Workforce Development

The Moroccan horticulture sector employs 400,000 people, slightly more than 3% of Morocco's workforce.[45] Employment in packhouses is mostly seasonal, ranging from 150 to 300 employees per establishment (Ait-Oubahou, 2006; Aloui, 2001; Aloui & Kenny, 2005), and in the case of citrus packing, employees work up to eight months a year. Employees are often paid on an hourly basis and are mostly female. In general, workforce development is weakest in rural areas where primary school enrolment and

[41] The Morocco country case was developed by Christopher Root.
[42] France purchases 76% of Morocco's tomato exports and about half of its bean exports. Russia is an important target-market as the largest consumer of Moroccan citrus. In 2008, it purchased nearly half of the country's exports. Other significant buyers of Moroccan citrus include France and the Netherlands, each of which imported about 13% of Morocco's exports in 2008.
[43] These firms are shareholders of the Maroc Fruit Board, a large marketing platform. Together they have 25 packing stations and jointly supply international markets under the label "Morocco," some 350,000 tons of citrus fruits and 150,000 tons of early produce (Kalaitzis et al., 2007).
[44] This may shift under Green Morocco which will lease 21,000 hectares of farmland to foreign investors.
[45] Most of these workers are in either tomato or citrus production and packing.

literacy are also lowest (Agropolis International, 2010). Insufficient "education and technical know-how in various segments of the supply chain" has been identified a key challenge for the continued development of the horticulture industry (El-Otmani, 2007). Due to its heavy involvement during the early years of the industry's development, the government traditionally carried out workforce initiatives through the Office for Professional Training and Labor Promotion (OFPPT) (OECD, 2008a). However, this training suffered from limited resources and focused only on the production stage. In fact, just 2% of the country's professional training budget goes to agriculture, despite the sector accounting for 33% of the labor force and 19% of Morocco's GDP (Agropolis International, 2010).

As the private sector has assumed more control over the industry's development, private training initiatives have flourished, specifically with respect to meeting the strict public and private standards in the European market.

Stage 1. Production (export of fresh fruit & vegetables): Late 1970s–Present

Prior to 1975, Moroccan horticulture was weak. Limited irrigation systems left the sector vulnerable to rainfall shortages and created instability of annual production. Horticulture exports were highly centralized through the Office de Commercialisation et d'Exportation, which controlled all aspects of export-oriented horticulture including marketing, quality control, and production-related issues; it was solely responsible for contact with buyers.[46] The withdrawal of public sector control over the sector following structural adjustment programs of the 1980s gave way for private firms to take the lead roles in marketing the country's horticultural exports. At this time, the government shifted its involvement in horticulture to support investments in capital goods, providing subsidies as high as 60% in the citrus sector (El-Otmani, 2007).

Producers were also facing difficulties in maintaining the competitiveness of Moroccan fruit and vegetable exports in the European market, following the introduction of seasonal tariffs in the 1970s to protect European producers. Moroccan producers were forced to introduce greenhouse technology to facilitate off-season production in order to maintain access to the European market. The capital investments required for this were beyond the reach of many small producers, who were forced out of the market. Large producers and new investors, however, used their financial resources to secure access to the upscale European market (Aloui, 2001). Exports of tomatoes, the country's key product, increased from 70,000 tons in 1983–1984 to an average of over 175,000 tons from 1998 to 2001 (Aloui, 2001).

The Moroccan supply chains faced yet another challenge with the implementation of global SPS and quality standards at the end of the 20th century. In particular, meeting pesticide requirements for buyer

[46] By 1985, the level of Moroccan government intervention in agriculture was among the highest in the world. Agricultural subsidies accounted for 15% of government expenditures. This heavy-handed government control in agriculture was blamed for excessive rigidity in the sector.

quality standards and health regulations became an important impediment to advancing trade in the EU. This was due to the inflexibility of Moroccan pesticide regulations and the lack of approved pesticides in the local market (Aloui & Kenny, 2005). In citrus fruits, rather than improve compliance efforts, Moroccan citrus exporters turned to markets with less rigorous entry standards, downgrading from its key export markets and directing much of its harvest to Russia in order to maintain and grow production and export levels (Louali, 2003). Since 1999, exports from Morocco to Russia have increased in real value by 82%, whereas exports of citrus to all other destinations has decreased by 36 percent (UNComtrade, 2011).

Government involvement may increase once again through the Green Morocco Plan that was introduced in 2009 to improve economies of scale and vertical integration along the supply chain. The government will facilitate this by identifying opportunities for buyers and providing those that commit to working closely with producers preferential access to credit and land. The plan also aims to increase the share of agriculture in Morocco's GDP by incentivizing conversion from cereal crops to higher value crops, especially olives (Agency for Agricultural Development, 2009).

Workforce Development. Government control during the early stages of the horticulture industry's evolution extended to workforce development. As of 2003, there were still no privately run workforce training institutes in agriculture (Agropolis International, 2010; Salinger et al., 2003), and most training was offered through the MOA. The government's workforce training program focused on providing introductory agricultural skills to meet the needs of agricultural businesses and farms; providing technical training to young people enabling them to pursue graduate studies in agronomy; offering apprenticeships for rural youth who have recently graduated, including entrepreneurial training; and increasing the capacity of existing agricultural labor. Technical training and apprenticeships aimed to mix classroom and practical experience.[47] Part of the program is aimed at training the children of farmers interested in taking over their parents' farms (Agropolis International, 2010). The quality of government workforce training, however, was viewed as subpar. Operational budgets decreased despite an increase in the number of trainees, which led to understaffing. Many trainers lacked professional experience, and there was a shortage of quality training materials and inadequate information about career options. The private sector was reluctant to participate in these training initiatives because of what they see as slow response times and inadequate attention to defining skill and job competencies (Agropolis International, 2010).

In the 1990s, the World Bank funded and supported the establishment of a nonprofit professional analysis and consulting group (GIAC AGRO)[48] for the sector to build inter-firm cooperation and public-private dialogue on workforce training needs. This group brought together eight industry associations and

[47] Some 50%-80% of the trainees' time to be spent on practical activities.
[48] Groupement Interprofessionelle d'Aide au Conseil.

165 member companies, helping to establish a common voice to articulate agricultural workforce needs, which had been absent following the government's withdrawal from the sector (Salinger et al., 2003). GIAC AGRO funded studies to devise a development strategy and to identify the skills needed to fulfill that strategy (GIAC Agroalimentarie, 2010). In addition to GIAC AGRO, several donor-funded development projects sought to increase workforce capacity throughout the export value chain. USAID funded and implemented several projects to strengthen workforce development capacity in Morocco, including the Dryland Agriculture Applied Research Project (DAARP) and the Moroccan Economic Competitiveness (MEC) Project (2009–2013). While DAARP was focused on applied research for the agricultural industry, MEC sought to strengthen the capacity of trainers in export-oriented horticulture value chains. MEC supports the National Agency for Promotion of Jobs and Skills (ANAPEC) and private training institutes to upgrade and expand their training offerings (USAID, 2009). Other initiatives were also carried out by the EU and member countries to strengthen vocational training programs for agriculture (see ***Table 2.7*** for further details).

Stage 2. Packaging and Logistics: Mid-1980s–Present

Large producers focused on sales to the European market and also upgraded into the packing segment of the value chain. Increased global competition meant that these markets required suppliers to make improvements in packing and presentation as well as cold chain management of fresh produce in order to maintain market access.

Large producers and exporters were forced to increase the sophistication of their packhouses as product could no longer be shipped in bulk. Prior to the mid-1980s, bulk produce had been shipped long distances in unrefrigerated boats. Quality loss and product wastage were key problems, and the product had to be re-graded upon arrival (Aloui, 2001). New measures had to be taken to improve transportation alternatives, as well to ensure the product could be shipped ready for market. The entry of Spain to the EU in 1986 facilitated this change considerably, as it enabled refrigerated trucks carrying Moroccan products to pass directly to European markets, such as France, without additional customs delays. By 1991, 62% percent of tomato exports were transported by refrigerated trucks. By reducing the minimum volume required for shipping, pre-export grading became more selective and the buyer received a higher quality product (Aloui, 2001). However, the use of these trucks was not adopted as quickly in citrus, and in the early 1990s, only 10% of citrus exports were shipped by truck (Hadad, 1995).

While Morocco downgraded to supply other less stringent markets for its citrus exports in response to both public and private standards, there were improved procedures for other products, such as melons and strawberries, that were destined almost entirely for European markets. These changes required further upgrading of human and infrastructure capacity in Morocco's horticultural export packhouses. The

government-run Etablissment Autonome du Controle et de Coordination des Exportations (EACCE) became the primary body responsible for assisting producers in meeting export quality and bio-safety standards (Aloui & Kenny, 2005; Chemnitz, 2007).[49] In 2006, GTZ implemented the Integrated Program for Quality Improvement in Morocco to build the capacity of Moroccan institutions to strengthen the competitiveness of its fresh and processed fruit and vegetables by simplifying domestic regulation, promoting International Organization for Standardization (ISO) 9001 certification and HACCP compliance and improving collaboration between the private and public sectors.

Workforce Development. Most training in packaging and logistics is carried out by exporting firms, although there were also initiatives carried out by donor agencies, such as USAID. Firms train workers to ensure compliance to international and local standards, and workers are provided on-the-job training in areas such as packing, sorting, grading, and labeling (Mohammed, 2011). Informal training is often based on explanation and demonstration, as a large number of the workers are illiterate. Some firms organize classes for workers to learn how to read and write and become versed in quality control basics (Briz et al.). Firms prefer to invest in training on management, marketing, quality control and food safety (Ismaili et al., 2007). Most firms in the sector perceive continuous education and training learning as major needs (Ismaili et al., 2007).

In order to meet food safety and buyer and global standards, some packing firms hire local trainers from regional institutes and international consultants to train workers (Mohammed, 2011; Zohour, 2011). ISO certification requirements have also necessitated the hiring of employees with higher skill levels to comply with record keeping and risk assessment requirements of these certifications (Aloui & Kenny, 2005).

Table 2.7 summarizes the most important workforce development initiatives in this industry.

[49] EACCE operates under the MOA but is financially autonomous. In 2002, EACCE received EU accreditation to control agricultural produce exports to the EU under the Program of Delocalization of Official Control in Third Countries set up by L'Organisation Mondiale du Commerce (OMC). Morocco is the first non-European country to obtain this approval. The accreditation is intended to simplify export procedures and processes. EACCE also manages preferential quota of Morocco and partnerships on horticulture exports.

Table 2.7. Morocco: GVC Upgrading and Workforce Development Initiatives

Stage 1: Production for Export Late 1970s	Stage 2: Packaging and Logistics Mid-1980s
Production for Export	Packing & Cold Storage
Private Sector Workforce Initiatives	
	• Meet market entry standards; exporters, packing houses, and farms invest in workforce training. • Packing workers are trained principally on the job in order to meet international standards. • Some packing firms hire international experts to train workers on food safety and international standards.
Public Sector Workforce Initiatives	
• There are two universities with programs in horticulture: (1) HASSAN II Agronomy and Veterinarian Institute at Rabat, and (2) Meknes National School of Agriculture • Government provides workforce development training in agriculture through the Office of Vocational Training and Labor Promotion (OFPPT). This focuses on young people and on farm training.	• The MOA carries out vocational training and facilitates apprenticeships in non-farm agricultural businesses. • Workers in higher positions such as supervisors and managers usually attend universities in Rabat, Meknes and Agadir.
Multisector Workforce Initiatives	
• In 1991, Chemonics implemented a USAID-funded DAARP program. The program developed a cadre of Moroccan agricultural scientists under the project participant training component. The program also provided English language training; courses averaging one month in duration have covered such skills as basic and more advanced computer training, in vitro breeding methods, forage analysis, and soil testing laboratory techniques (Eriksen et al., 1991). • The non-profit GIAC AGRO, with 165 member companies, provides funding for workforce development strategy and planning in agriculture • Chemonics International implemented a USAID-funded project (2005–2009) to improve the skills of Moroccan farmers and agro-processors to become more competitive by helping them improve production, processing, marketing, and logistics and to better integrate various value chains. • The USAID-funded MEC Project (2009–2013) works in part to strengthen the capacity of existing trainers in export-oriented horticulture value chains. MEC will support ANAPEC and private training institutes to upgrade and expand its training offerings. Working with selected agricultural and export-oriented value chains, MEC will connect master trainers to global worldwide experts and trainers, building a sustainable system that will provide access to new training and adult education resources (USAID, 2009). • The USAID-funded Advanced Learning and Employability for a Better Future project worked to strengthen the government's vocational training in agriculture and link it to the private sector. • In 2006 GIZ implemented the Integrated Programme for Quality Improvement in Morocco to build the capacity of Moroccan institutions to strengthen the competitiveness of its fresh and processed fruit and vegetables by simplifying domestic regulation, promoting ISO 9001 certification and HACCP compliance, and improving collaboration between the private and public sectors. • The EU 2007–20013 projects in Morocco have included strengthening of vocational training and modernization of industry, agriculture, and fisheries. The EU's strategy entails providing financial and technical assistance for education reform and vocational training systems. It also embraces the fight against the illiteracy of young people and adults, in particular women (European Union, 2007).	

Source: Duke CGGC.

D. Jordan[50]

In 2008, Jordan exported US$440 million in fresh fruit and vegetables. Horticulture is an important subsector and is a significant source of foreign currency, accounting for six percent of the country's total exports (UNComtrade, 2011; World Trade Organization, 2008). Primary export products are tomatoes, cucumbers, and eggplants, accounting for about 90% of Jordan's vegetable exports in volume (Oxford Business Group, 2009).[51] In addition, date production and exports grew rapidly during the 2000s, and, in 2009, the MOA launched a key investment program to further drive the growth of this high-value product (Hazaimeh, 2009). Jordan principally exports to regional markets; in 2005, 90% of its fresh fruit and vegetable exports were destined to Pan-Arab Free Trade Area (PAFTA) countries, primarily Iraq, Syria, and the United Arab Emirates (UAE), with limited exports reaching the European market (Central Bank of Jordan, 2010). The country's success in export promotion has been mixed, however, largely due to limitations in water, human resources, product quality, packaging, and marketing. Significant support and capacity building efforts by international donor organizations have aided the growth of the sector.[52]

Industrial Organization

Jordan has only a small number of large domestic producer-exporters that produce, pack, store, and export their product,[53]and fruit and vegetables continue to be exported directly by wholesalers and export firms located in Amman, which source their produce principally from large farms. The most important suppliers are Jordan River Company (JORICO), Raja Farms, AlBaraka Farms Co., Developed Agricultural Marketing Company, Progressive Agricultural Investment Company, and Dr. Fayez Sabri Jaber Farms. These firms are either certified or are in the process of obtaining certification in Global-GAP.

Workforce Development

The horticultural labor force draws significantly on foreign labor, primarily agricultural workers from Egypt (Jordan Department of Statistics, 2010).[54] Many older Jordanian farmers have left the sector to seek employment in the Arabian Gulf, and many younger Jordanians avoid employment in what is often perceived as menial manual labor (USAID et al., 2010).

The transient nature of the workforce limits incentives for private sector investments in skill development. Several other actors have been involved in workforce development initiatives, including

[50] The Jordan country case was developed by Ghada Ahmed.
[51] Jordan also exports fruits such as citrus, peaches, and apricots, but volume remains well below its vegetables production and exports
[52] US Foreign assistance to Jordan increased significantly between 2000 and 2010 and total U.S. aid to through FY2010 amounted to approximately $11.38 billion. Events such as the first Gulf Crisis in 1991, the 1994–1995 peace treaty with Israel, and the second Gulf war in 2003 made Jordan a strategic partner to the U.S. Government in the Middle East Region. Agriculture is seen as an important sector for food security.
[53] High export tariffs limit participation to more established firms as they require important economies of scale to remain competitive.
[54] Egyptian workers account for 73% of Jordan's agricultural workforce.

government agencies,[55] NGOs, and multilateral and bilateral donors (Magnani et al., 2004). Donor agencies continue to work with the Jordan Institute for Standards and Metrology (JISM) to provide technical capacity building and training to harmonize Jordanian standards with GlobalGap, which was adopted in 2008.

Stage 1. Production (export of fresh fruit and vegetables): 1980–Present

Prior to 1980, horticulture production was very limited and targeted to the local market. However, the introduction of new horticulture production technology in irrigation, crop production, handling, and export allowed the country to enter the fruit and vegetable GVC (Qrunfleh, 2009). The main production system today continues to be field cultivation with drip irrigation, and plastic tunnels and greenhouses with drip systems.

While production was initially focused on vegetable varieties, specifically tomatoes, cucumbers, and eggplant, in 2005, date production began to emerge as an important new subsector. In 2009, the MOA launched a key investment program to further drive the growth of this high-value product, and by 2010, dates had become a priority among horticultural exports due to its low water consumption during production and net higher returns than traditional products (Hazaimeh, 2009).

The Arabian Gulf has long been Jordan's primary export market (Borg, 1986; Central Bank of Jordan, 2010). Advantages of exporting to Gulf countries include proximity, lower shipping costs, established networks, and lower quality demands. While European markets offer higher value, they only account for a small portion of Jordan's horticultural exports (Central Bank of Jordan, 2010). Some of the institutional shortcomings preventing the private sector from increasing exports to the EU include organizing farmers to achieve "critical mass" or "bulk volumes"; market intelligence; technology transfer; quality control; and managerial and technical education (Magnani et al., 2004; World Bank, 2008).

Workforce Development. Training and certification are overseen by Jordan's National Center for Agricultural Research and Extension (NCARE). Initial training focused on crop production; as new production methods were introduced and handling protocols were established, training evolved to include quality, mechanization, fertilization, farm management, marketing, and global standards. By 2007, with the exception of mechanization and fertilization, these areas continued to be identified as key knowledge gaps in the sector (Haddadin, 2007). Water management, in particular, became a focus of training, skills development and recruitment due to the rising cost of water use (Qrunfleh, 2009). In 2009, the Jordan Valley Authority entered into a cooperation agreement with four famers' societies to raise awareness about

[55] MOA and Plant Protection Department; Jordan Export Development and Commercial Centers now Jordan Enterprise; NCARE; Jordan Exporters and Producers Association (JEPA); and JISM.

water management, and train and advise farmers on irrigation practices (Oxford Business Group, 2009). Engineers and mechanics were also hired to manage and maintain the drip irrigations systems.

Training by individual firms has been limited despite examples of success by a small number of farmers and exporters who developed their own support systems (Haddadin, 2007). These producers have been able to significantly increase their exports, diversify and train on new crops, and obtain standards certifications. Much of the training to support an increase in production and export promotion has been provided by government agencies, NGOs, and international donor agencies, in particular, USAID (see ***Table 2.8*** for more details). The quality of government training is questionable, however, as extension offices in charge of carrying out training activities are undermined by limited instruction and resources (Haddadin, 2007).

Stage 2. Packing and cold storage: Late 1990s–Present

Jordan has not yet effectively upgraded into the packing segment of the value chain, and packaging, quality control, and marketing continue to be critical constraints that hinder Jordan's export capacity, particularly to the EU where buyers require additional post-harvest arrangements from their suppliers (Magnani et al., 2004). Competitiveness in this segment is limited by two key factors: (1) overfilling of containers, which damages produce and lowers the unit price; and (2) low quality of the locally available packaging materials. Most fruit and vegetables are packed in (5–10kg) Styrofoam or corrugated boxes, which provide limited protection for the product; together with overfilling, this can easily damage the product in transit (James et al., 2008; Kader, 2006). This packaging is suitable only for local markets and exports to the Gulf countries, where standards are lower and transit time is limited (Magnani et al., 2004).

While packaging appears to be improving for the smaller European market, with one-way plastic containers used for export to Eastern European countries and fiberboard containers used for export to EU countries (Kader, 2006), a portion of Jordanian produce destined for the European market continues to be exported to neighboring countries, such as Turkey and Syria, where it is graded, repackaged, labeled, and exported to the EU and the Gulf at higher prices (Jordan National Competitiveness Team, 2000). This lack of post-harvest management systems has limited Jordan's ability to effectively sell its produce, gain market share in the EU, and capture higher prices for its products (Magnani et al., 2004). In addition, supply chain gaps in the industry remain unresolved, including the constraints in infrastructure, cold chain and transport logistics, and contractual arrangements at destination ports (World Bank, 2008).

Workforce Development. Some larger producers such as JORICO provide in-house training on produce handling and packing to meet export standards since they understand that training is needed to

develop skills in cutting and produce preparation and packing according to global standards and marketing. Albaraka Farms offers consulting services to other producers and training courses for packhouses' supervisors and staff.

Table 2.8 summarizes the most important workforce development initiatives in this industry.

Table 2.8. Jordan: GVC Upgrading and Workforce Development Initiatives

Stage 1: Production for export 1980s	Stage 2: Packing and Storage Late 1990s
Production for Export	Packing & Cold Storage
Private Sector Workforce Initiatives	
• Majority of farmers are unskilled, use low-tech methods and are not investing in training and education. • Some farms train on integrated pest management and food safety. • Large fruit and vegetables companies train their suppliers informally.	• The fruit and vegetable export company JORICO invests in staff development and has created its own internal training programs for its 140 employees on production processes and quality standards such as GlobalGap; Albaraka Farms offers training courses for packhouse supervisors and staff; Dr. Fayez Sabri at Jaber Farms trains staff on organic farming and Fair Trade. • Merchants Union for Vegetables and Fruit Exporters provides training workshops on topics such as pricing, standards and marketing.
• Public Sector Workforce Initiatives	
• MOA provides extension services and has been working with international organizations to implement programs to train graduate youth and women in organic farming, irrigation, production, drying, storage, and mechanization.	• NCARE provides training for extension services and famers.
• Multi Sector Workforce Initiatives	
• USAID-funded Agricultural Marketing Development Project (AMDP) started in 1988 helps to increase growers' productivity, marketing, and income in domestic and export markets. • 2004 USAID-funded Horticultural Export Improvement Association (HELA) training on EurepGap.	• Jordan Export Development and Commercial Centers and JEPA provide training on technical, administrative, and logistical management; exports; and GlobalGap.
• By 1996 USAID-funded AMDP became a fully integrated horticultural operation and export promotion project and provided training on production, marketing, and packaging. • World Bank Horticultural Export Promotion and Technology Transfer Project was launched in 2003 to increase Jordanian horticultural exports through quality testing, export certification, financing of technology transfer, and other capacity-building measures for small- and medium-scale farmers. • 2005 USAID-funded KAFA'A trained farmers and associations on farm water use efficiency, better farming, product diversification, standards, export, supply chain, marketing, finance, and market linkages. • USAID (2006–2011) funded Sustainable Achievement of Business Expansion and Quality (SABEQ); provided training and capacity building activities on work force development, exports, and sector value-added activities.	

Source: Duke CGGC.

E. Honduras[56]

In 2008, Honduras exported US$250 million of horticultural products. Key products include bananas, melons, pineapples, tomatoes, and Asian vegetables, including okra and eggplant. The United States is the most significant trading partner for these products, and absorbs over 95% of tomato exports, although Honduras also benefits from regional trade with El Salvador. While Honduras has significant potential for product diversification toward fruit and vegetables given its variety of microclimates and its proximity to major markets in developed countries (FAO, 2003), the country faces numerous obstacles to accelerate growth in this sector. In particular, weak SPS regulations constrain access to foreign markets and limited access to credit makes it difficult for growers to expand production or to invest in new product lines.

Industrial Organization

The industry is divided into three well-marked subsectors: (1) production of bananas and pineapples by two multinational firms, Dole and Chiquita; (2) production of melons and watermelons by a small number of large and medium-sized locally owned firms;[57] and (3) vegetable production using a variety of production models.[58] Vegetables producers exporting from Honduras are subdivided into two main categories: (1) individual smallholder producers who sell their product to large exporters, and (2) independent producer-exporters with a secure market. Smallholder producers usually work under a mixture of formal or semi-formal contract arrangements with producer-exporters. The growers of Asian vegetables typically operate through contracted outgrower schemes, as these products do not have a local market and thus entail higher risks for the producers. Resources provided by exporters to producers typically include technical assistance to ensure quality production, although some exporters also provide credit facilities and inputs. Melon and vegetable exporters are funded by both domestic and foreign capital and typically sell to one major client in the United States that dictates conditions of supply.

Workforce Development

The horticulture segment in Honduras draws primarily on a poorly educated labor force; in rural Honduras, both male and female participation in secondary education is below 25% (FAO, 2008). In addition, while unemployment in the country's urban centers is high, employment in the packhouses

[56] The Honduras country case was developed by Shelli Jo Heil and Penny Bamber and includes information based on interviews carried out in the field in March 2011.
[57] Melons traditionally depended on smallholder production, but this has changed dramatically in recent years as smallholders could not meet the demands for quality and consistency of supply for the export market and were forced out of the market.
58 The National Agricultural Census of Honduras in 2003 estimated the total horticultural producers at 15,000 (Lundy et al., 2006),

around these centers is not considered an attractive alternative, and many firms have had to focus on improving their recruitment and retention strategies (Mejia Palacios & Oconnor, 2011).

Exporter firms provide on-the-job training for their employees, as well as extension services for their outgrowers (Hernandez, 2011; Medlicott, 2011; Pacheco, 2011). Extension agents are usually trained agronomists. The two major foreign technical assistance providers, Fintrac and Technoserve, which receive their funding from USAID and USDA, respectively, have played central roles in training producers of all sizes in this segment. Zamorano, an Agricultural University based in Honduras and well respected across Latin America, provides undergraduate programs in agronomy, as well as an array of technical training programs for the private sector.

Stage 1. Production of fresh fruit and vegetable for export): 1980s–Present

Throughout the 1900s, the horticulture sector in Honduras was dominated by the production of bananas by Standard Fruit and United Fruit Company, which today are the multinational corporations (MNCs), Dole and Chiquita International. The country was known as the "banana republic" due to the economic and political dominance of these firms, which enabled the country to become the world's largest exporter of bananas for 100 years. These firms, however, operated in relative isolation from the rest of the economy and, with the exception of the spinoff of the research operations of Standard Fruit as the FHIA,[59] there were few positive spillover effects regarding exports or horticultural production in the country.

Vegetable production for export began in the mid-1980s, fostered by USAID initiatives to help Honduras to take advantage of the Caribbean Basin Initiative (CBI), the forerunner to the Central American Free Trade Agreement (CAFTA). While USAID's support was reduced during the mid-1990s, major new efforts were initiated after Hurricane Mitch (October 1997). In 1998, USAID awarded a grant to the US technical assistance provider, Fintrac and the Agricultural Research Foundation (FHIA) as part of the USAID-Rural Economic Diversification Program to implement its farm-to-market value chain approach. These efforts were focused on continuing to diversify production, and unlike many programs in developing countries, these interventions began with the larger producers and gradually added smaller suppliers (Medlicott, 2011).

Asian vegetables were introduced in Comayagua in 1989, although growth was very slow in initial years, as there was no demand for these types of vegetables on the local market, and as farmers were reluctant to cultivate unknown vegetables, exporters had to produce on their own farms (Hernandez, 2011; Medlicott, 2011). More extensive growth in the industry really began after Hurricane Mitch, when large producers restructured their production and small and medium producers were gradually contracted to

[59] FHIA went on to play an important role through contributions to research and technology transfers and in the advancement of cucumber, squash, oriental vegetables, pepper, jalapeño, eggplant, and plantain exports (USAID, 2008)

supplement supply (Imbruce, 2008). A particularly important part of the industry's growth strategy has been the diversification of supply to include multiple vegetable products. By creating multiple "product lines" and income streams, exporters have decreased risk to producers and allowed them to operate with a year-round supply of produce (Medlicott, 2011). While the last decade has seen significant growth in the production of these vegetables, overall export earnings from vegetables have risen only marginally from less than 1% of total export value in 1997 to a little over 1% in 2007.

Workforce Development. Private firms with outgrower programs provided training for their producers, particularly with respect to the new vegetable varieties that were not known in local markets. Key technical assistance programs were offered by Fintrac as part of the recovery initiatives following Hurricane Mitch. Fintrac's strategy was based on employing and training local university graduates as extension agents and trainers, many of whom later went on to work with exporter firms in the sector (Medlicott, 2011). Fintrac provided training on SPS regulations, GlobalGAP, and other private standards, as well as introducing new technologies and product varieties. By 2010, Fintrac had trained producers at all levels, including large, medium, and small firms (Medlicott, 2011).

Two important universities, Zamorano University's Pan-American School of Agriculture and Universidad Nacional de Agricultura, offer undergraduate and diploma programs in agronomy. By 2010, there was an oversupply of agronomists in the labor force, and many graduates of these programs opted to work in other sectors (Bamber & Fernandez-Stark, 2011). Zamorano also provides extension services, including management training and training in integrated pest management (Rueda & Valenzuela, 2011). In addition, other nonprofit organizations such as the rural development foundation, Fundación para el Desarrollo Empresarial Rural (FUNDER), were set up to organize smallholder supply through community-owned firms and provide technical assistance and business administration training. One of these firms has grown successfully and now produces for export (Maradiaga & Galo, 2011).

While the public research organization FHIA provides training and market advisory services for almost 6,000 producers linked to the export market, little if any extension services have been provided by the government, both as a result of policy decisions that focus on privatization of these services and a lack of resources (Maradiaga & Galo, 2011; Medlicott, 2011).

Stage 2. Packing and cold storage: 1990s–Present

Due to the expanded production of fruit and vegetables, packing and storage improvements occurred in parallel with the significant increases in production, and development agency programs provided funding and technical assistance for the construction and operations of these facilities (Hernandez, 2011). The private sector Asian exporters also constructed packing and storage facilities when they

initiated their own farm production. Produce is packed and shipped in bulk in large boxes or crates; limited value-added processes are included for export; and no trimming, chopping, or mixing is carried out in Honduras, with the exception of jalapeños that may not be exported fresh to the United States, and are thus halved, deseeded, and stored in vinegar prior to export.

Workforce Development. New employees are briefly instructed in their activities prior to being included on the packing line, these employees then continue their training under the tutelage of a mentor, taking approximately three weeks to produce at full capacity (Hernandez, 2011; Medlicott, 2011; Velasquez, 2011). While production is typically male dominated, employees in the packhouses in Honduras are predominantly young women between 20 and 30 years old (Medlicott, 2011; Mejia Palacios & Oconnor, 2011; Pacheco, 2011; Velasquez, 2011). As Honduras exports mostly to the United States and El Salvador, standards training has been mostly linked to hygiene and healthcare. Few buyers include codes of conduct that require additional benefits for the workers as is more common in the European markets (Barrientos et al., 2003). Fintrac offers training programs for HACCP, as well as guidance regarding quality assurance and control certifications.

All firms are required to contribute to a government training organization, but the institution continues to favor industrial production activities over agricultural production, and most firms make little use of their offerings (Rueda & Valenzuela, 2011). Shortcomings with this institution may derive from its broader mandate of servicing all industries, rather than just the horticultural sector, as well as the absence of coordination measures between the training institution and the private sector.

Table 2.9 shows the horticulture value chain and the selected workforce development initiatives in Honduras. The stages of industry upgrading are presented below.

Table 2.9. Honduras: GVC Upgrading and Workforce Development Initiatives

Stage 1: Production for Export (1990s)	Stage 2: Packing and Storage (1990s)
Production for Export	Packing & Cold Storage
Private Sector Workforce Initiatives	
• Agro-exporters of Asian vegetables provide technical assistance and inputs on credit to producers.	
Public Sector Workforce Initiatives	
• FHIA provides training and market advisory services. FHIA has worked with 5,815 producers linked to the export market to diversify crop lines and has improved production practices for numerous product lines. • Pan-American Agricultural School (Zamorano) provides science-based training to managers, technicians, and extension agents. • FUNDER provides technical training and start-up marketing assistance for small and medium producers in high altitude vegetables.	
Multisector Workforce Initiatives	
• Fintrac Farmer Training and Development program with FHIA and Zamorano provides technical and marking assistance. • Asian vegetable exporter uses technicians from the local technical school to make weekly visits to outgrowers. • Fintrac funded by USAID/MCC, introduced GAPs, including drip irrigation and integrated pest management. • Fintrac employed a lead farmer approach to spread GAPs and scale-up production.	• Fintrac funded by USAID/MCC trains farmers in GMPs (HACCP), designs, and modifies processing plants, provides guidance in certification and quality standards established by GlobalGap. • TechnoServe funded by USDA trains hot pepper processors on sanitary conditions and quality control to meet international standard. • COHORSIL, farmer co-op provides members with access to warehouses, packaging facilities and market services and establishes links with private sector.

Source: Duke CGGC.

VII. Analysis and Discussion of the Country Cases

As highlighted in the previous case studies, the GVC perspective provides a useful framework to understand how countries upgrade along the value chain and to identify the most relevant workforce development practices implemented therein. This section highlights key findings revealed through the comparative analysis of the preceding country cases, with a particular focus on factors driving entry and upgrading through the chain, successful workforce development initiatives, and the corresponding engagement by different institutions. These lessons provide developing countries with a solid basis for examining development strategies for their local fruit and vegetable industry.

A. Economic Upgrading

Overall, the analysis of economic upgrading trajectories indicates that the export of fruit and vegetables represents an opportunity for low-income countries to drive economic development. Kenya is an important example of a nation that has advanced in the fresh and processed horticulture value chain by understanding the market and being able to meet the private and public European standards. Chile shows sound best practices and the industry has been characterized by a clean upgrading trajectory with strong institutions that support the sector development. Honduras and Jordan need to work on institutional capacity building, creating strong associations that can lead the development of the sector.

Entry into the Value Chain

Several basic conditions must be met for a country to enter the fruit and vegetable value chain. These include climate allowing for a year-round growing season; adequate road and transport infrastructure, such as ports and airports essential for moving fragile produce to market; establishment of sanitary and phytosanitary regulatory systems to prevent diseases spreading around the world; and favorable trade policy changes that improve the competitiveness of the supplier.

Within the past two decades, conditions for entry into the fruit and vegetable GVC have changed as a result of the adoption of more rigorous standards in the industry. Entry is now much more difficult for newcomers to the industry than it was for suppliers such as Chile and Kenya that began exporting in the late 1980s and early 1990s prior to the consolidation of the value chain, when produce was principally sold by wholesalers or greengrocers. Today, the entry strategy for some developing countries, such as Honduras and Jordan, requires them to leverage regional markets where standards are generally less rigorous.[60] Only countries that are able to comply with high standards are rewarded with easy access to developed countries markets. Conversely, countries that have problems in meeting the standards may lose the export market.

Upgrading through the Value Chain

The cases reveal that developing countries have experienced greater success upgrading into the packing segment of the value chain than into the processing segment. Upgrading into packing has depended on understanding the market needs, investment in capital goods, and the availability of supporting industries within the country.

[60] Banana production in Honduras should be viewed as an outlier because for over a century the United States has been its major trading partner. Jordan's major export partners are more regionally oriented within the Arabian Gulf countries.

- Understanding the market is a priority in this sector, especially as this is a buyer-driven value chain. Maintaining open lines of communications regarding demand preferences in products, quality, packing, etc., and fostering buyer involvement are critical in all stages of the value chain. Associations in Kenya and Chile, for example, organize trips to key export markets, in particular observing interactions at the point of purchase.
- Investment in new technologies increases the shelf life of produce. Kenya upgraded into the packing segment via initial investments by private firms in a wide variety of equipment to attain very high standards of hygiene within the packhouse operations, as well as onsite laboratories for product and staff health tests (Jaffee & Masakure, 2005).
- Upgrading into the packing segment depends significantly on the existence of a local packaging industry to supply the appropriate containers on a regular and reliable basis. Jordan's horticultural sector has been greatly inhibited in its upgrading along the value chain by the lack of good quality packing materials. Much of the produce destined for the EU is shipped to neighboring countries where it is repackaged, resulting in a significant loss of value for Jordan.

Upgrading into the processing segment of the value chain has been difficult to achieve for low-income developing countries because processing of fruit and vegetables is cost prohibitive at low levels of crop production. Therefore, countries must gain a degree of expertise during the production stage to increase output to a level that will enable the country to upgrade to the fruit and vegetable processing stage. Chile is the only country in this study that has been able to effectively upgrade into the processing segment to date as a result of joint efforts by the government and the private sector to expand and add value to fresh fruit and vegetables.

Product and process upgrading to increase the value of horticulture exports for developing countries are key elements in the industry's development. Process upgrading was essential to help all of the countries studied to meet the growing number of public and private standards in both the production and packing segments of the chain. The health and safety protocols in packhouses, for example, have been key factors in protecting consumers from disease and meeting SPS around the world. Product and process upgrading to cultivate and handle increasingly fragile and perishable product varieties in Chile (berries), Kenya (French beans), and Honduras (Asian vegetables) offer greater financial returns than more easily manipulated fruit and vegetables.

B. New Global-Local Interactions

Given the significant level of buyer control in this value chain, producers in developing countries are directly impacted by the requirements and practices of lead firms. Two particularly important consequences for industry upgrading are discussed below.

First, lead buyer requirements and standards have led to the restructuring of the supply chain in all of the countries studied, fostering mid-size and large producers and exporters that can more easily meet new demands. Exporter firms have assumed responsibility regarding the quality and safety of their products, and thus are now more rigorous in their sourcing practices in developing countries. In particular, many decided it was easier to produce themselves and set up farms. While this has led to the exodus of many smallholder farmers from the industry, the private sector's focus on training and development and investment in capital goods allows for more rapid upgrading.

Secondly, the implementation of these standards has had an impact on the end-markets targeted by developing countries. Only countries that are able to comply with high standards are rewarded with easy access to developed countries markets. While both Chile and Kenya have been proactive in establishing standards and aligning their own GAPs with GlobalGap.[61] Rather than invest in compliance initiatives, citrus producers in Morocco preferred to switch markets from Europe to Russia that is less stringent about standards traceability. In Jordan, the maturity of standards adoption is low, and they export their products to regional markets that do not have strict standards in place. While Honduras continues to export to the United States, it has also had problems in meeting standards; such as its 1-year ban from the U.S. market following the 2008 FDA recall of Honduras cantaloupes due to salmonella contamination.

C. Workforce Development

These changes have begun to alter the approach to workforce development in the industry. As the case studies reveal, remaining competitive and upgrading in this sector now requires a workforce development component in order to improve productivity, meet standards, align skills with demand needs, diversify products, and develop innovative new packing systems. These workforce initiatives have been implemented in different ways across the countries: on-the-job informal training, on-the-job formal training and assessment, off-job regular classes, off-job short courses, industry training sessions, training led by educational institutions that grant a certification, training by buyers, and training by governments, NGOs, and donor organizations.

[61] In 2008, ChileGap was validated by GlobalGap and, in 2010 KenyaGap was also authorized to act independently.

Four important workforce themes can be identified: (1) standards training today is a basic requirement to compete in high value markets and efforts to reduce the cost of implementation is important to ensure adoption; (2) return on investment for training is fundamental for providing incentives for this expenditure and ensuring overall workforce skills can rise, particularly for temporary workers; (3) formal higher education remains important for key positions in the value chain, and the lack of this creates bottlenecks that prevent upgrading; and (4) skills training must be carried out in all job categories of the value chain to maximize growth and upgrading opportunities.

Training in standards is imperative for entry and continued upgrading in the industry**.** This requires a number of initiatives: First, understand global requirements; second, identify the skills needed to meet these global requirements; and finally, train the workforce in those skills. Standards training requires programs focused on food safety and health-related training, especially for employees in the packing houses to avoid transfer of disease from packers to consumers in other countries. In Chile, the government and private sector developed and implemented training programs to enable producers to meet the Chile-GAP standards prior to the evolution of more rigorous standards in the EU and the United States. Previous basic training may be necessary to ensure that standards training is successful. In Kenya and Morocco, for example, standards have led to additional training initiatives to improve adult literacy because of the need to read pesticide labels and understand barcodes.

Given the importance of training for standards and productivity, the private sector has taken on a central role in workforce development in the countries studied. However, the temporary and migrant nature of the labor force makes it challenging for private firms to internalize the returns from this investment. In the more advanced countries, additional social benefits have been incorporated into the employment arena, such as housing, day-care facilities for young children, and unemployment and health care benefits. In Kenya, the leading firms are reversing the tendency to rely on flexible labor and are shifting toward a more permanent workforce to capture the gains (Jaffee & Masakure, 2005).

Chile's National Labor Skills Certification System (see ***Box 2.1***) offers an interesting example of how the horticultural sector can benefit from improving the skills of the temporary workforce. Since the Chilean industry depends mostly on off-farm labor, this helps to facilitate the mobility of skills across the industry, leading to increased productivity and maximizing national return on investment in training. NLSCS has certified more than 9,000 workers in a range of skills following the international standards required by the industry.

Box 2.1 Chile National Labor Skills Certification System

This program was created in 1998 by Fundación Chile. This system aims to provide a framework for the recognition of competencies, regardless of how these were acquired, with the goal to improve industry competitiveness. The program involves both public and private stakeholders from 15 different industries. In these 15 industries, more than 500 occupational standards have been established, and 40,000 workers have been certified. Skills standards have been transferred to vocational training institutions to refine their curricula. At the same time, the workers that have not passed the evaluation are offered training courses to fill the skills gaps and later receive the certification of skills diploma. Certification is carried out by ChileCalifica, a publically funded joint initiative of the Ministries of Economy, Education, Labor, and Social Security .

This system has identified the skill profiles required for jobs performed in the horticulture production, packing, cold storage, and processing stages of the fruit and vegetables value chain. For example, in the production stage, a diploma is granted to a person that manages the GAP program in the farm; in the packing plant, a person that has the skills to pack the fruit in a box will receive a certificate, and. in the processing stage. there is a certification of skills for the workers that can pit the fruit or operate the machine to seal cans. To date, more than 9,000 workers in these segments have been certified.

The main advantages of this system is to facilitate the portability of skills, decrease uncertainty in the hiring process, fully accredit the workers' abilities, and most importantly, create a proud sentiment among certified workers to establish a culture of lifelong learning and development. While this system is still in a nascent stage, in the medium term it will be expanded to include the entire agro sector.

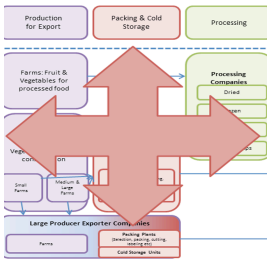
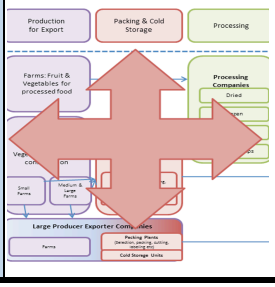
Sources: Araneda, 2010; Chilealimientos, 2010b; Kis & Field, 2009; Lopez, 2009.

Formal education programs are essential for key positions. Formal education in agronomy is fundamental for driving the industry's productivity levels and maintaining its competitiveness in production. All of the countries studied depend significantly on this professional staff. In Kenya, full-time agronomists are important for driving innovation in new crop varieties and training smallholder suppliers in techniques required to meet global standards. In addition to agronomists, innovation in packing, processing. and cold chain technologies also require formal education in food technologies, food safety, and management. Increased collaboration between educational institutions and private sector firms is important to ensure that the education programs meet the needs of the industry. In Chile, this has been facilitated through the establishment of the public-private council.

Investments in training are required for all job categories of the value chain, from farm workers to managers**.** The training needs to be oriented to all job categories. This industry involves three quite distinct groups of workers: (1) farming activities and the workforce within the agriculture sector; (2) packing and storage positions; and (3) the processing stage in which workers are classified under the industrial workforce. All three types of workers require training programs, albeit differentiated based on group and entry-level skills of the workers. While training pickers to improve their technique can translate to 20 percent increase in yields from the field, it is just as critical to train managers in how to guide and motivate workers. For example, in Kenya, sexual harassment training for predominantly male managers in packhouses has improved the work environment and increased productivity amongst the female workers.

Table 2.10 describes the types of successful workforce development initiatives to overcome the challenges faced by the horticulture industry at different upgrading stages in developing countries.

Table 2.10. Workforce Development and Upgrading in the Fruit and Vegetables Global Value Chain

	Diagram	Workforce Development Implications	
Production (Entry in the Value Chain)		Unskilled workers are hired to work on the farm. Training for these workers is critical for insertion into the GVCs.	
		Skills Preparation Short training and/ or on-the-job training	**Institutions** Governments, private sector, buyers, training institutions, NGOs, and donor organizations
Packing & Cold Storage (Functional Upgrading)		Typically women are hired to work in the packing plants. They must follow strict procedures to pack the products and prevent losses as well as protect against sanitary problems.	
		Skills Preparation Short training, certification, and/ or on-the-job training	**Institutions** Governments, private sector, buyers, training institutions
Processed Fruit & Vegetables (Functional Upgrading)		This stage shows a movement from agriculture to manufacturing. Workers are operating machinery to process the fruit and vegetables	
		Skills Preparation Short training and/ or on-the-job training 2-year degrees	**Institutions** Governments, private sector, buyers, training institutions
Product Upgrading		Product upgrading training can occur in all stages of the value chain. One example is the GAPs to make sure that products are following all the sanitary and phytosanitary regulations.	
		Skills Preparation Short training and/ or on-the-job training Formal training to obtain certifications	**Institutions** Governments, private sector, buyers. training institutions, and NGOs
Process Upgrading		Companies undertake process improvement to upgrade their capabilities and boost productivity.	
		Skills Preparation Short training and/ or on-the-job training Formal training to obtain certifications	**Institutions** Governments, private sector, buyers training institutions

Source: Duke CGGC.

D. Institutions

Workforce development for the fruit and vegetable industry within these countries has been supported by a variety of institutions. The private sector is an active stakeholder in workforce development initiatives. This is fostered by the strong impact of training on the productivity of workers. Training is done mostly on the job and is paid for by firms rather than individual employees. In the case of Chile, the development of training programs beyond the scope of the private sector with the establishment of the NLSCS is the result of diverse set of stakeholders that have been able to achieve a high level of coordination due to strong industry associations supported by the government. While Kenya has a strong industry association, FPEAK, most workforce development still takes place on the job; in Jordan and Honduras, where the nascent industry is small, the countries have lacked a strong industry organization that can link stakeholders in a coordinated chain to adequately channel the needs of the sector. Indeed, in Jordan (and in Morocco until the mid-2000s), there are no private training institutions at all.

The government's role in workforce development generally has been most successful as facilitator or catalyst. In the capacity of facilitator and coordinator, governments have been more effective in driving industry growth and upgrading through workforce development than through direct training initiatives. In Chile, the government offers tax breaks to companies that conduct training through certified training institutions, while at the same time, it has played a key role in coordinating the industry actors by creating a public and public strategic council, involving all the value chain stakeholders to help develop the sector. In other cases, like Kenya, the role of the government has been minimal and mainly confined to its regulatory and facilitative functions. The strong performance of the industry in Kenya has been ascribed to this policy, with autonomy in production and marketing decisions fostering significant local private initiatives and dynamism within the industry.

Where the government has led training through agriculture extension services, training often has been undermined by a lack of financial and technical resources and thus has a limited effect in increasing productivity. In Morocco, the quality of government workforce training is considered to be subpar, in part because many trainers lack professional experience, and they possess low-quality training materials and inadequate information about further training and career options. In Honduras, government extension services have been undermined by a lack of political will and financial resources (Labarca, 1999; Maradiaga & Galo, 2011; Pacheco, 2011). In all the countries studied, where the industry successfully upgraded into packing and processing, private sector training replaced public sector involvement.

Foreign agencies have provided a significant portion of the training related to the adoption of standards needed to secure access to GVCs. These programs were focused on securing the place of

smallholders in the value chain, due to the high costs of meeting standards. Given the dominance of large exporters in both Chile and Kenya, the government worked closely with the private sector in those countries to develop standards and to educate the workforce in the Chile-GAP and Kenya-GAP certifications. respectively. However, programs led by foreign agencies have, in some cases, displayed limited effectiveness in providing skills required by the market. NGO-led training in Honduras, for example, is reported to use the same methodology and content regardless of the experience of the trainees. When training is provided in such a standard, undifferentiated manner, its impact is reduced. and it is likely to fail (IICA, 2006). Demand-driven training—as provided by the agricultural consulting firm, Fintrac—appeared to be much more successful in Honduras. Although the interventions are funded by USAID, the relationship between the firm and the client is managed as a professional consultancy.

VIII. Conclusion

The fruit and vegetable industry has expanded in the last two decades, creating significant employment opportunities in developing countries. While this employment was initially focused on unskilled labor, nowadays it requires a prepared labor force due to the complex demands of global buyers, the enforcement of new public and private standards, and the growing global competition among developing countries.

To compete successfully and upgrade in the fruit and vegetable GVC, various workforce development initiatives have been implemented by developing countries. Workers have been trained in health protocols and safe food preparation; they have certified skills to ensure quality; and global buyers are aligned with industry stakeholders to provide the well-trained labor force needed by the sector. The countries able to upgrade their industries show coordination and collaboration among their stakeholders in which the private sector leads the development of the sector; the public sector acts as a facilitator; and foreign donors intervene to fill the gaps.

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CHAPTER 3

The Apparel Global Value Chain

ECONOMIC UPGRADING AND WORKFORCE DEVELOPMENT

Karina Fernandez-Stark
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Contents

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Acronyms

AGOA	African Growth and Opportunity Act
ALAFA	Apparel Lesotho Alliance to Fight AIDS
ATC	Agreement on Textiles and Clothing
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BIFT	Bangladesh Institute of Fashion and Technology
BKEMA	Bangladesh Knitwear Manufacturers and Exporters Association
CAFTA-DR	Dominican Republic-Central America Free Trade Agreement
CMT	Cut, Make, and Trim
CSR	Corporate Social Responsibility
DFID	Department for International Development
DOT	Department of Textiles – Bangladesh
DTCT	Department of Textile & Clothing Technology – Sri Lanka
DUKE CGGC	Duke University, Center on Globalization, Governance and Competitiveness
EPZ	Export-Processing Zones
EU	European Union
FDI	Foreign Direct Investment
FOB	Free on Board
GATT	General Agreement on Tariffs and Trade
GSP	Generalized System of Preferences
GTZ	German Technical Cooperation
IFC	International Finance Corporation
INATEC	Instituto Nacional Tecnológico
ITKIB	Istanbul Association of Textile and Apparel Exporters
ILO	International Labor Organization
ISO	International Organization for Standardization
JAAF	Joint Apparel Associations Forum
M&S	Marks and Spencer
MFA	Multi Fibre Arrangement
NGO	Nongovernmental Organization
OBM	Original Brand Manufacturing
ODM	Original Design Manufacturing
OEM	Original Equipment Manufacturing
OECD	Organization for Economic Cooperation and Development
PPP	Public-Private Partnership
R&D	Research and Development
PROGRESS	Promotion of Social, Environmental, & Production Standards – Bangladesh
TPL	Tariff Preference Levels
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WTO	World Trade Organization

I. Introduction

This report uses the global value chain perspective to examine the role of workforce development initiatives in a number of developing countries participating in the global apparel industry. One of the first industries to adopt a global dimension and to incorporate developing countries, global apparel has expanded rapidly since the 1970s, drawing most developed and developing countries into the value chain. Today, it is a trillion dollar global industry and provides employment to tens of millions of workers in some of the least-developed countries in the world (Datamonitor, 2009). Indeed, apparel production is considered a springboard for economic development, and often is the typical starter industry for countries engaged in export-oriented industrialization due to its low fixed costs and emphasis on labor-intensive manufacturing (Gereffi & Memedovic, 2003). Low-income countries now account for three-quarters of the world clothing exports (ILO, 2005).

While global expansion of the apparel industry historically has been driven by trade policy, by 2005, the Agreement on Textiles and Clothing (ATC) by the World Trade Organization, had phased out many of the quotas that previously regulated the industry. This caused a tremendous flux in the global geography of apparel production and trade and a restructuring of firm strategies seeking to realign their production and sourcing networks to accommodate new economic and political realities (Gereffi & Frederick, 2010). This change brought other key factors in country competitiveness to the forefront, including labor costs, productivity, and managerial and institutional competencies. Low-cost countries such as Bangladesh, China, and India are emerging as leaders in the lower value assembly segments of the value chain, while other countries, such as Sri Lanka and Turkey, are upgrading into higher-value segments, such as branding and design, which rely on higher-quality human capital to maintain their competitiveness. As a result, workforce skills will become increasingly important elements for developing countries to maintain and upgrade their positions in the global apparel value chain.

There is a significant gap in the literature regarding the role workforce development has played in the global apparel industry and the potential it has for future development. Nonetheless, a number of strategic investments in workforce development by the public and private sectors that have facilitated upgrading can be identified. This report uses case studies of selected developing countries to illustrate how national and subnational workforce development institutions and actors can respond to globalization, work effectively with global lead firms to understand new skills requirements that globalization places on their workforces, and establish a workable division of responsibilities in effective PPPs.

This report is structured as follows. First, we outline the global evolution of the industry and then introduce the global apparel value chain. Second, we identify the entry points and upgrading trajectories for developing countries in this industry. These early sections show how the global industry operates and

provide a context to evaluate how workforce development components may contribute to the industry's success. Third, we present case studies of five developing countries—(1) Bangladesh, (2) Lesotho, (3) Nicaragua, (4) Sri Lanka, and (5) Turkey—that participate in the industry and then analyze the workforce development strategies they have pursued. Finally, we summarize our main conclusions in terms of economic upgrading, workforce development, the role of institutions, and the impact of global-local interactions.

II. Global Organization of the Industry

The apparel industry is the quintessential example of a buyer-driven commodity chain marked by power asymmetries between the suppliers and global buyers of final apparel products (Gereffi & Memedovic, 2003). Global buyers determine what is to be produced, where, by whom, and at what price. In most cases, these lead firms outsource manufacturing to a global network of contract manufacturers in developing countries that offer the most competitive rates. Lead firms include retailers and brand owners and are typically headquartered in the leading markets—Europe, Japan, and the United States. These firms tend to perform the most valuable activities in the apparel value chain—design, branding, and marketing of products— and in most cases, they outsource the manufacturing process to a global network of suppliers.

Like all global industries, the apparel value chain relies on international standards to coordinate the activities of suppliers. By the turn of the century, most lead firms had implemented private standards and codes of conduct based on cost, quality, timeliness, and corporate responsibility in terms of labor and environmental standards (Bartley, 2005; Gereffi et al., 2001). Factory performance is measured regularly, and delivery, quality, and price are tracked over time. It is common for firms to be certified by multiple buyer brands, such as Walmart, Ralph Lauren, Target, and The Gap. ***Table 3.1*** provides examples of these lead firms.

Table 3.1. Lead Firm and Brand Types with Regional Examples

Lead Firm Type	Type of Brand	Description	Examples	
			United States	EU-27
Retailers: Mass Merchants	**Private Label**: The retailer owns or licenses the final product brand, but in almost all cases, the retailer does not own manufacturing.	Department/discount stores that carry private label, exclusive, or licensed brands that are only available in the retailers' stores in addition to other brands.	Walmart, Target, Sears, Macy's, JC Penney, Kohl's, and Dillard's	Asda (Walmart), Tesco, C&A, and M&S
Retailers: Specialty Apparel		Retailer develops proprietary label brands that commonly include the stores' name.	The Gap, The Limited Brands, American Eagle, and Abercrombie & Fitch,	H&M, Benetton, Mango, New Look, and NEXT
Brand Marketer	**National Brand:** The manufacturer is also the brand owner and goods are distributed through multiple retail outlets.	Firm owns the brand name but not manufacturing, "manufacturers without factories." Products are sold at a variety of retail outlets.	Nike, Levi Strauss, Polo, and Liz Claiborne	Ben Sherman, Hugo Boss, Diesel, and Gucci
Brand Manufacturer		Firm owns brand name and manufacturing; typically coordinate supply of intermediate inputs (CMT) to their production networks often in countries with reciprocal trade agreements	VF, Hanesbrands, Fruit of the Loom, and Gildan	Inditex (Zara)

Source: Gereffi & Frederick, 2010.

Since these lead firms in the apparel industry adopted global sourcing models in the 1970s, manufacturing has become the domain of developing countries. However, the geographic pattern of this shift has been significantly influenced by a complex array of quotas and preferential trade agreements. The quota system began with the Long-Term Arrangement Regarding International Trade in Cotton Textiles and Substitutes under the auspices of the General Agreement on Tariffs and Trade (GATT) in 1962 and was extended to include other materials under the Multi Fibre Arrangement (MFA) implemented in 1974 (ILO, 2005). The MFA was put in place to protect developed economies from cheap imports from the developing world, and it governed world trade in textiles and apparel for the next 30 years. Several developing countries—and least developed countries, in particular, benefitted from this trade framework, which provided them with quotas for duty-free imports into leading markets and protected the growth of their nascent apparel industries from low-cost competitors such as China. This agreement was phased out between 1995 and 2005, as textile trade was brought under the purview of the World Trade Organization's Agreement on Textiles and Clothing (ATC).

Several additional unilateral trade agreements and preference schemes with specific apparel and textile clauses came into effect during this phase-out period to ease its impact on least developed countries. These trade agreements have been fundamental to allow small countries such as Nicaragua and Lesotho to continue to compete in the global apparel industry. These agreements include the CAFTA-DR Tariff Preference Levels (TPL) agreement between the United States and Nicaragua;[1] the African Growth and Opportunity Act (AGOA) in which the United States provides temporary relief to sub-Saharan

[1] This TPL agreement was established in 2004 and will phase out in 2014.

African producers;[2] and the EU's Generalized System of Preferences (GSP) scheme "Everything but Arms," which provides for duty free imports from certain least developed countries to the EU,[3] amongst others. These agreements are set to phase out at different intervals before 2015 unless renewed. Their temporary nature provides short-term advantages for the beneficiaries but also highlights the uncertainty of the future of the apparel industry in these countries, which lack other competitive advantages.

This plethora of apparel trade agreements has created disparate growth patterns across developing countries. Bangladesh, Cambodia, China, India, and Vietnam, have experienced steady growth, as have Egypt, Nicaragua, and Pakistan. China, in particular, benefitted from the end of quotas and increased its global market share from 26% in 2005 to 33% in 2008 (WTO, 2010); it now accounts for 76% of total global employment in the sector (see ***Appendix 3.A.*** for a table on the global distribution of employment among the major developing country exporters.)

Other countries have increased exports to one or more of the three major markets—(1) EU, (2) Japan, and (3) the United States, while experiencing declines in others. For example, Indonesia increased its market share in the United States and Japan, but saw a decrease in the EU-15; conversely, Sri Lanka has increased market share in the EU-15 and lost in the United States. Lesotho has seen a small increase in market share in the EU-15 (since 2005) and a decreasing market share in the United States (since 2004).[4] Several countries including Canada, EU-12, Hong Kong, Malaysia, Mexico, Morocco, South Korea, Taiwan, Thailand, and Tunisia have seen a continued drop off in their market share since the early 1990s.

Table 3.2 provides an overview of the changing market positions of leading apparel export countries between 1995 and 2008.

[2] This agreement was set to expire in 2007, but it was extended to 2012 by the U.S. Congress.
[3] This agreement follows a 10-year cycle following of which the terms must be reviewed. The current cycle will end in 2015.
[4] Lesotho represents less than 1% of the world apparel import value in United States and less 0.00% to EU-15.

Table 3.2. Top Apparel Export Countries by Year, 1995-2008. (Values in $US Billions)

Country/ Region	1995		2000		2005		2007		2008	
	Value	%	Value	%	Value	%	Value	%	Value	%
China	24.0	15.2	36.1	18.2	74.2	26.8	115.2	33.3	120.0	33.2
EU-27 (c)	48.5	30.6	56.2	28.4	85.5	30.8	105.1	30.4	112.4	31.1
Turkey	6.1	3.9	6.5	3.3	11.8	4.3	13.9	4.0	13.6	3.8
Bangladesh (b)	--		5.1	2.6	6.9	2.5	8.9	2.6	10.9	3.0
India	4.1	2.6	6.0	3.0	8.6	3.1	9.8	2.8	10.9	3.0
Vietnam (b)	--		--		4.7	1.7	7.4	2.1	9.0	2.5
Indonesia	3.4	2.1	4.7	2.4	5.0	1.8	5.9	1.7	6.3	1.7
Mexico (a)	2.7	1.7	8.6	4.4	7.3	2.6	5.1	1.5	4.9	1.4
United States	6.7	4.2	8.6	4.4	5.0	1.8	4.3	1.2	4.4	1.2
Thailand	5.0	3.2	3.8	1.9	4.1	1.5	4.1	1.2	4.2	1.2
Pakistan	--		--		3.6	1.3	3.8	1.1	3.9	1.1
Tunisia	2.3	1.5	--		3.1	1.1	3.6	1.0	3.8	1.0
Cambodia (b)	--		--		--		3.5	1.0	3.6	1.0
Malaysia	2.3	1.4	--		--		--	--	3.6	1.0
Sri Lanka (b)	--		2.8	1.4	2.9	1.0	--	--	3.5	1.0
Hong Kong (d)	9.5	6.0	9.9	5.0	7.2	2.6	5.0	1.4	--	--
Morocco	--		--		2.8	1.0	3.5	1.0	--	--
Korea, Republic of	5.0	3.1	5.0	2.5	--		--	--	--	--
Taipei, Chinese	3.2	2.0	3.0	1.5	--		--	--	--	--
Dominican Republic	--		2.6	1.3	--		--	--	--	--
Philippines	2.4	1.5	2.5	1.3	--		--	--	--	--
Poland	2.3	1.5	--		--		--	--	--	--
World	**158.4**		**197.7**		**277.1**		**345.8**		**361.9**	
	Top 15 Total and % Share of World Exports									
	127.5	**80.5**	**161.5**	**81.7**	**232.6**	**83.9**	**299.1**	**86.5**	**315.0**	**87.0**

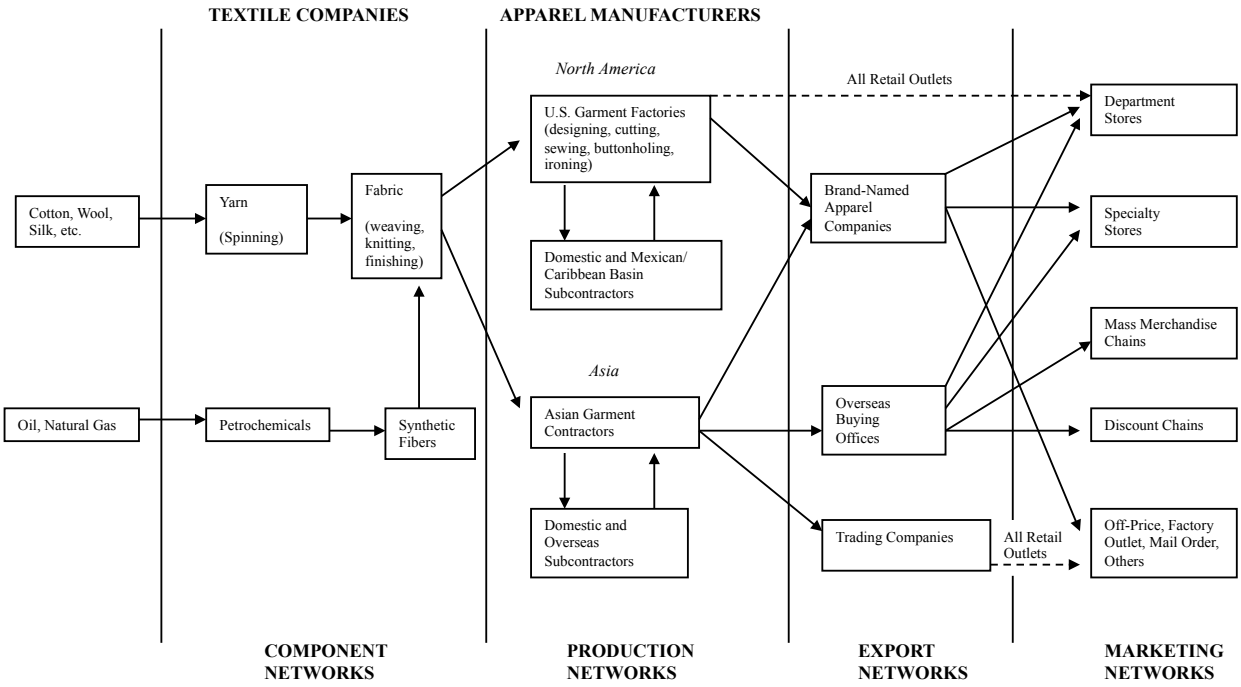
Notes: Apparel exports represented by SITC 84.
(a) Includes significant shipments through processing zones. (b) Some years include estimates. (c) EU values include intra-EU trade; values only represent EU-15 in 1995. (d) Domestic exports only. (--) Indicates country not in the top 15 in given year

Source: WTO, 2010.

III. The Apparel Global Value Chain

The apparel value chain is organized around five main segments: (1) raw material supply, including: natural and synthetic fibers; (2) provision of components, such as the yarns and fabrics manufactured by textile companies; (3) production networks made up of garment factories, including their domestic and overseas subcontractors; (4) export channels established by trade intermediaries; and (5) marketing networks at the retail level (see ***Figure 3.1***). Over time, there have been continual shifts in the location of both the most significant apparel exporting countries and regions, as well as their main end markets (Gereffi & Frederick, 2010; Gereffi & Memedovic, 2003, p. 5).

Figure 3.1. The Apparel Global Value Chain

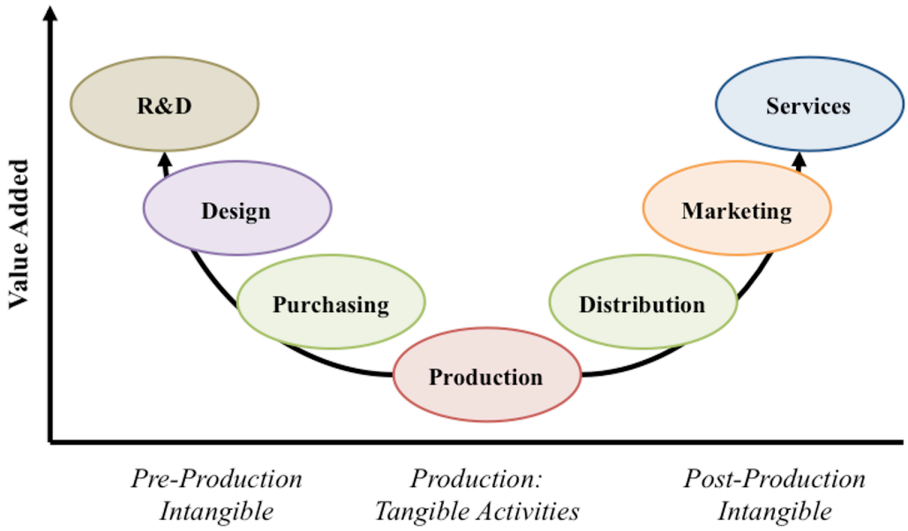


Source: Gereffi & Memedovic, 2003.

Apparel has been the classic "buyer-driven" global value chain. Unlike producer-driven chains, where profits come from scale, volume and technological advances, in the buyer-driven global apparel value chain, profits come from combinations of high-value research, design, sales, marketing, and financial services that allow the retailers, designers and marketers to act as strategic brokers in linking overseas factories and traders with product niches in their main consumer markets (Gereffi & Memedovic, 2003). The companies that develop and sell brand-name products have considerable control over how, when, and where manufcturing will take place, and how much profit accrues at each stage, essentially controlling how basic vaalue-adding activities are distributed along the value chain.

To understand how this division of work occurs and how initiatives to develop the workforce may affect the role developing countries play in the global value chain, six distinct value-adding activities can be identified: (1) research and new product development (R&D), (2) design, (3) production, (4) logistics (purchasing and distribution), (5) marketing and branding, and (6) services (see ***Figure 3.2***). What is striking about this schema is that the most important value-adding stages are intangible services that occur before and after the apparel production process, which requires us to expand considerably our ideas about where the greatest gains from workforce development are likely to occur.

Figure 3.2. Curve of Value-Added Stages in the Apparel Global Value Chain



Source: Frederick, 2010.

- **R&D:** This value-adding function includes companies that engage in R&D, as well as activities related to improving the physical product or process and market and consumer research.
- **Design:** This stage includes people and companies that offer aesthetic design services for products and components throughout the value chain. Design and style activities are used to attract attention, improve product performance, cut production costs, and give the product a strong competitive advantage in the target market.
- **Purchasing/Sourcing (Inbound):** This stage refers to the inbound processes involved in purchasing and transporting textile products. It includes physically transporting products, as well as managing or providing technology and equipment for supply chain coordination. Logistics can involve domestic or overseas coordination.
- **Production/Assembly/Cut, Make, Trim (CMT):** Apparel manufacturers cut and sew woven or knitted fabric or knit apparel directly from yarn. The cut-and-sew classification includes a diverse range of establishments making full lines of ready-to-wear and custom apparel. Apparel manufacturers can be contractors, performing cutting or sewing operations on materials owned by others, or jobbers and tailors who manufacture custom garments for individual clients. Firms can purchase textiles from another establishment or make the textile components in-house.

- **Distribution (Outbound):** After apparel is manufactured, it is distributed and sold via a network of wholesalers, agents, logistics firms, and other companies responsible for value-adding activities outside of production.
- **Marketing and Sales:** This function includes all activities and companies associated with pricing, selling, and distributing a product, including activities such as branding or advertising. These companies frequently do not make any physical alternations to the product. Apparel is marketed and sold to consumers (via retail channels), institutions, or to the government.
- **Services:** This includes any type of activity a firm or industry provides to its suppliers, buyers, or employees, typically as a way to distinguish itself from competitors in the market (e.g., offering consulting about international apparel businesses or fashion trends).

IV. Economic Upgrading in the Apparel Global Value Chain

Opportunities for upgrading are shaped by the buyer-driven governance structure of the apparel industry. Humphrey and Schmitz (2002) identify four types of industrial upgrading: (1) *functional* (moving to higher-value functions); (2) *product* (producing higher-value products); (3) *process* (incorporation of more sophisticated technologies into production); and (4) *intersectoral* (leveraging expertise gained in one industrial sector to enter a new sector.) The four main stages of functional upgrading in the apparel value chain are described below:

(1) **Entry into the chain via Assembly/CMT:** This is the most basic stage of the apparel industry, in which garment sewing plants are provided with imported inputs for assembly. The apparel manufacturer is responsible for cutting, sewing, supplying trim, and/or shipping the ready-made garment. The buyer purchases the fabric and supplies it to the manufacturer, along with detailed manufacturing specifications. The contract manufacturer has a variety of customers and does business on an order-by-order basis. Work is frequently carried out in Export-Processing Zones (EPZs), special economic zones, or in geographic locations that offer tariff reductions for export production to the buyer's country.

(2) **OEM/Full Package/FOB**: The apparel manufacturer takes responsibility for all production activities, including the CMT activities, as well as finishing and distribution. The firm must have upstream logistics capabilities, including procuring and financing the necessary raw materials, piece goods, and trim needed for production. In some cases, the buyer specifies a set of textile firms from which the garment manufacturer must purchase materials, and in other cases, the firm is responsible for establishing its own network of suppliers. The firm is also often responsible for

downstream logistics, including packaging for delivery to the retail outlet and shipping the final product to the buyer at an agreed selling price (also referred to as FOB).[5] The buyer typically provides the FOB contractor with the product specifications and designs, but the buyer is not involved with the details of the manufacturing process, such as pattern making. Full package firms can range from single production operations to global suppliers, which have multiple production centers and work on multiple product ranges.

Full package firms have two sourcing possibilities: (1) imported textiles;[6] and (2) domestic sourcing of textiles from the local industry. This latter option can create important backward linkages to the textile industry and many countries begin textile production by manufacturing textiles to be used in their apparel exports.

(3) **ODM/Full Package with Design**: This is a business model that includes design in addition to manufacturing. A garment supplier that does full package with design carries out all steps involved in the production of a finished garment, including design, fabric purchasing, cutting, sewing, trimming, packaging, and distribution. Typically, the supplier will organize and coordinate the design of the product; approval of samples; selection, purchasing and production of materials; completion of production; and, in some cases, delivery of the finished product to the final customer. Full package with design arrangements is common for private-label retail brands.

(4) **OBM:** This is a business model that incorporates branding of products, in addition to or in lieu of design and manufacturing; upgrading involves a move into the sale of own brand products. Many firms in developing countries enter OBM with brand development for products sold on their domestic or neighboring country markets.

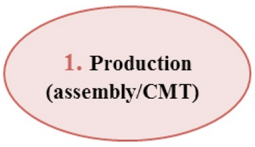
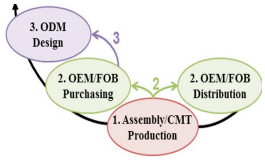
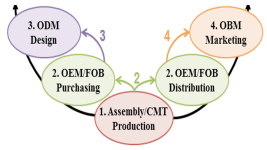
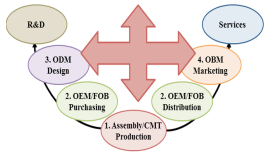
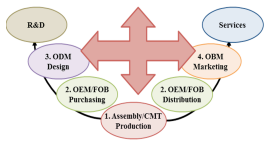
It should also be noted that product and process upgrading in a country can be very important for driving growth in the industry.

- **Product Upgrading**: The production of more complex products, which requires increasing the capabilities of the firm, that is, firm "learning." As countries gain experience in the industry, they can move from low-cost commodities to higher value-added fashion goods that warrant higher returns as labor rates increase (e.g., basic to complex products).
- **Process Upgrading**: This reduces cost and improves flexibility by improving production methods; it requires capital investment and better worker skills to operate new machinery or/and information and logistics technology.

[5] Free on Board (FOB) is a common term used in industry to describe this type of contract manufacturer. However it is technically an international trade term of sale in which, for the quoted price, goods are delivered on-board a ship or to another carrier at no cost to the buyer.
[6] The top five exporters of textiles in 2008 were: the EU (US$250,198 millions), China, United States, Korea, and India (US$10,267millions) (WTO, 2010).

Table 3.3 provides detailed illustrations of these upgrading trajectories in the apparel value chain, with examples from the developing countries we are focusing on in this report.

Table 3.3. Upgrading Trajectories in the Apparel Global Value Chain

	Diagram	Description
Assembly/ CMT (Entry in the value chain)		• Assembly (CMT): The focus of the supplier is on production alone; suppliers assemble inputs, following buyers' specifications. • Inputs—such as textiles, accessories, and packaging—may be imported due to limited availability and quality concerns over local inputs. • Product focus may be relatively narrow.
Full Package/OEM (Functional Upgrading)		• Firm takes on a broader range of tangible, manufacturing-related functions, such as sourcing inputs and inbound logistics, as well as production. • The supplier may also take on outbound distribution activities.
Product Design (ODM) (Functional Upgrading)		• Supplier carries out part of the pre-production processes, such as **design** or product development. • Design may be in collaboration with the buyer, or the buyer may attach its brand to a product designed by the supplier. • In many cases, ODM firms work with designers from the lead firms to develop new products.
Product Brand (OBM) (Functional Upgrading)		• Supplier acquires post-production capabilities and is able to fully develop products under its own **brand** names. Two options: (1) Supplier maintains a relationship with the buyer and develops brand collaboratively. (2) Supplier establishes its own distribution channels by establishing a new market channel that is typically more profitable and allows the firm to expand skills. These are often local or regional markets.
Product Upgrading		• Increase unit value by producing more complex products, which requires increasing the capabilities of the firm. • Countries must move from low-cost commodities to higher value-added fashion goods that warrant higher returns as labor rates increase.
Process Upgrading		• Machinery: Improving *productivity* through new capital investments. • Information and Logistics Technology: Improving the way the firm carries out these activities. Benefits both the firm and the chain because it reduces the total time, cost and increases the flexibility of the supply chain process.

Source: Duke CGGC.

V. Workforce Development in the Apparel Global Value Chain

Apparel production is a labor-intensive activity and more than 25 million workers from developing countries are officially employed in the sector (ILO, 2005).[7] The majority of workers are concentrated in the production-related segments of the value chain, and they are principally young, female workers with limited education.[8] Only 3%–4 % of total factory workers are not involved in assembly line positions, such as production planners, engineers, mechanical technicians and operations support (Nathan Associates Inc., 2006). However, while the required formal skill level is low in the CMT segment of the value chain, this rises rapidly as countries upgrade into higher value stages and workers with more advanced skills are needed to support new functions, such as logistics, finance, design and marketing. ***Table 3.4*** provides an overview of the most important job profiles in each segment of the value chain.

[7] See Appendix 3.A for a breakdown of employment by country. There is limited recent data available on a country basis, and estimates often do not account for informal labor.

[8] Around 80% of the labor force are woman and predominantly young. Many of these women entered the industry without qualifications, they usually work for long hours, are paid very low wages and have limited job security (Dicken, 2007; ILO, 2005). The share of female employment varies in different regions in the world. It is very high in Asia, with more than 89% in Cambodia, 80% in Bangladesh and 82% in Sri Lanka. In Africa, female employment is also high; for example, in Mauritius the female share is 73%. In other countries, such as India and Turkey, the share is lower.

Table 3.4. Job Profiles in the Apparel Global Value Chain

Position	Job Description	Formal Education Requirements	Training/ Experience	Skill Level
CMT/Assembly /Production				
Hand Sewers	Sew, join, reinforce, or finish—usually with needle and thread—a variety of manufactured items. Includes weavers and stitchers.	No formal education required	Required experience	
Sewing Machine Operators	Operate sewing machines to join, reinforce, decorate, or perform related sewing operations in the manufacture of garment or nongarment products.	No formal education required; literacy and numeracy skills	Experience: Need of speed and accuracy skills	
Garment Pressers	Clothing pressers use steam irons and vacuum presses to shape garments and remove creases.	No formal education required	Experience: Need of speed and accuracy skills	
Cutting Machine Operators	In automated facilities, cutters electronically send the layout to a computer-controlled cutting machine.	Technical education	Technical training	
Line Leaders	Supervisory roles; ensure work flows expeditiously along the line.	High school diploma/ technical education	Management skills	
Production Flow Supervisors	Supervisory roles; oversee the pace of the work and ensure stoppages are minimized, monitor production levels, train new workers, and manage constant problem solving.	Technical education/ Bachelor's degree	Management skills	
OEM/ Full Package				
Quality Control	Maintain final quality prior to distribution of product, monitored by buyers	High school diploma/ technical education	Knowledsge of quality systems	
Sourcing, Purchasing, and Supply Chain Management	Capabilities related to OEM production: Workers must have financial skills related to purchasing inputs and coordinating production schedules.	Technical education/ Bachelor's degree in finance/management	Industry experience	
ODM				
Fabric and Apparel Patternmakers	Create the blueprint or pattern pieces for a particular apparel design. This often involves grading, or adjusting the pieces for different sized garments	Technical education in apparel	Experience	
Tailors, Dressmakers, Custom Sewers	Design, make, alter, repair, or fit garments.	Technical education in apparel	Experience	
Designers	Workers must have training in the "aesthetics" of product development, some market and consumer knowledge, and technical skills required to translate ideas into samples.	Technical education/ Bachelor's degree in clothing design	Experience	
Senior Designers	Creative talent within the industry that can develop new design lines for production.	Bachelors/Master's degree in clothing design	Experience	
OBM				
General Business Skills	Responsible for financial management supply chain optimization, quality control and/or strategy, and new business development.	Bachelor's/Master's degree in business/engineering	Experience	
Branding and Marketing Capabilities	Responsible for market research, marketing/advertising, networking, and positioning brands in the market.	Bachelor's/Master's degree in business	Marketing specialization and experience	

Source: Duke CGGC.

Skill Level	Low	Low-Medium	Medium	Medium – High	High
					
	No formal education; experience	Literacy and numeracy skills; experience	Technical education/certification	Technical education /undergraduate degree	University degree and higher

In the first stage of the value chain, assembly or CMT workers mainly need to know how to operate sewing machines and cutting and pressing equipment. The actual skills required to operate these machines can be very extensive, especially since the piece rates paid to workers place a premium on speed and quality (i.e., few errors). However, formal educational requirements are very low. Firms usually only require minimal knowledge of reading, writing, and mathematics, and an aptitude for learning (Kelegama & Epaarachchi, 2001). Full-package suppliers engaged in integrated production activities require more highly trained workers with a knowledge of the textile industry to fill sourcing functions, while financial and logistics specialists are required for upstream and downstream activities. ODM and OBM activities require more advanced skills, sometimes related to marketing and consumer research. To facilitate the shift from assembly to full-package production, it is advantageous for firms to be able to train their workers and staff in-house. This upgrading depends to a significant degree on the firm's experience with global buyers, including international standards for price, quality, style, and delivery.

In today's post-MFA environment, apparel firms in developing countries need to seek out new sources of competitive advantage to support their growth (Pickles, 2010). Long-term viability of the "race to the bottom" sourcing strategy in the current global context is questionable and indeed industry experts note that firms are now looking for alternative sources of competitiveness (Carlotti et al., 2011). Nongovernmental organization (NGO) pressure on global brands has led to increased pressure on suppliers to improve working conditions and health and safety. Global buyers established a number of codes of conduct that producers must meet to retain their supply status (Bartley, 2005; Elliott & Freeman, 2003). These include a host of private standards of individual global buyers, as well as multilateral public standards, such as the ILO's Better Work program, and mixed efforts, such as the Ethical Trade Initiative.

An alternative to this strategy of driving down costs is to increase productivity not merely through automation but with an emphasis on high-performance work arrangements associated with lean manufacturing and modular production. Evidence from studies in the apparel industry in the United States found that improving opportunities for skill acquisition can indeed improve the productivity of the workers, lowering the relative importance of labor costs (Appelbaum et al., 2001; Bailey et al., 2001; Berg & et al., 1996). One study showed very positive results: Firms incorporating high-performance practices—including work arrangements that give workers the opportunity to participate in substantive decisions, the skills to make this participation meaningful, and incentives to encourage skills acquisition and workplace participation—reduced the time taken for cut pieces of material to be assembled into

finished garments by 94% (Appelbaum et al., 2001).[9] These results underscore the importance of investing in training and new production methods for the apparel workforce.

As the industry continues to evolve globally in the post-quota system, diverse models of workforce development across different stages of the value chain are likely to emerge, shaped both by the nature of the participating firms and particular training and institutional frameworks of the host nation. Country cases in the remainder of this report explore the variety of private, public, and multisector workforce development strategies that have been undertaken in five developing countries to support these market-entry or upgrading efforts of firms and countries in the apparel value chain.

VI. Developing Country Case Studies

In this section, we analyze the apparel industry of five developing countries, representing both low and middle income economies. As shown in ***Table 3.5***, Turkey is the most developed country analyzed and the most advanced in the apparel value chain; it exported US$13.6 billion of apparel items in 2008. Sri Lanka has upgraded its operations to full package plus design, and Bangladesh has been able to upgrade from assembly to the full-package/OEM stage of the apparel value chain. In 2008, Bangladesh exported US$10.9 billion in apparel, while Sri Lanka exported US$3.5 billion in the same year. In the cases of Lesotho and Nicaragua, both countries are still in the assembly segment of the chain. Bangladesh and Lesotho rely heavily on the apparel industry, which represents around 70% of their total national exports. For the majority of these countries, apparel is a main source of employment. The figures presented in ***Table 3.5*** shows only formal employment; however, it is known that this sector also employs a large number of informal workers.

[9] Improving the skills of the workforce appears to have been closely related to the production model employed in U.S. apparel factories. In an attempt to improve competitiveness of the industry in the United States in the 1990s, many factories adopted the modular production process, which relied on employees being trained in multiple tasks, as well as fostering soft skills in communication and teamwork (Berg & et al., 1996).

Table 3.5. Selected Economic and Industry Country Indicators, 2008

	Turkey	Sri Lanka	Bangladesh	Lesotho	Nicaragua
Gross Domestic Product (GDP) (current US$) (bn)	$730	$41	$80	$2	$6
GDP per capita (at PPP; $US)	$14,068	$4,571	$1337	$1,566	$2,682
Apparel Exports (bn)	$13.6	$3.5	$10.9		$1.0
Apparel exports % of total exports (2008)	10.3%	40.9%	71.1%	69.2%	36.8%
Apparel exports % of total exports (2000)	23.5%	51.8%	79.3%	73.1%	
Apparel exports % of total exports (1990)	25.7%	32.2%	38.5%	NA	
Total Labor Force (million)	26	8	77	1	2
Formal Labor force in apparel	500,000	270,000	2,800,000	45,310	51,300[a]
Female workers share of total apparel employment	67%	Over 80%	80%	85%	63%[a]
Apparel Factories	35,000 - 44,000	200	4,743	42	75[a]
Main Apparel Export Destinations	EU	EU & US	EU & US	US	US: 89%
Entry Year	1980s	1980s	1980s	1990s	Mid-1990s
Value Chain Entry Point	OEM	CMT	CMT	CMT	CMT
Highest Value Activity	OBM	ODM	OEM	CMT	CMT
Domestic Textile Production	Yes	Limited	Knitted Only	No	No

Notes: [a]: 2010; [b]2009.

Sources: Bennet, 2008, BGMEA, 2008, Evgeniev & Gereffi, 2008, Export Promotion Center of Turkey, 2010, ILO, 2010, MIGA, 2007WDI, Morris et al., 2010, UNAL 2010, WDI, 2010, WTO, 2010.

The case studies are structured as follows: First, each case presents an overview of the current state of the industry, highlighting the principal features of the workforce and related development initiatives in the country. This is followed by an examination of key stages of industry development and the identification of the most important workforce development strategies implemented to foster upgrading during each stage. Particular attention is paid to identifying the composition of the firms in the industry and the institutions involved in workforce development to identify best practices.

A. Turkey[10]

Turkey is the fifth largest global apparel supplier and the second largest supplier to the EU, which accounts for 80% of the country's exports (Istanbul Chamber of Commerce, 2008). Unlike most emerging economies that entered the industry by providing CMT assembly operations, Turkey leapfrogged by entering the industry in the 1980s as a full-package supplier to global brands facilitated by a strong domestic textile industry.[11] The sector has continued to upgrade, moving from full-package operations to design (ODM) and more recently developing its own brands (OBM). In 2008, Turkish textile and apparel manufacturers exported to over 170 countries, reaching a record high of US$23 billion, 17.5% of Turkey's total exports and 11% of total employment in 2010 (Demirsar, 2010; Turkey's Undersecretariat for Foreign Trade, 2010). The main export items are t-shirts, sweatshirts, underwear, sleeping wear, socks, men's shirts, and pants (Tan, 2001).

Industrial Organization

The sector is dominated by full-package providers (60%), who are linked to global buyers and who subcontract assembly operations to local firms and lower cost locations such as Egypt and Morocco (Demirsar, 2010; McKinsey, 2003). There are growing numbers of pioneer ODM and OBM firms that upgraded from full-package suppliers after acquiring skills from working with branded manufacturers including Hugo Boss (Evgeniev & Gereffi, 2008). The majority of the apparel companies are domestically owned with a low percentage of foreign firms. Foreign direct investment (FDI) in the sector is small (Seidman, 2004). All lead buyers that operate on the global market are present in Turkey (Evgeniev & Gereffi, 2008).

Workforce Development

Turkey has the fifth largest labor force and the youngest population in Europe.[12] The labor force has a global reputation for being hardworking, productive, and dependable (Evgeniev & Gereffi, 2008; Koçak, 2006; McKinsey, 2003; Smid & Taskesen, 2002). There are approximately 3 million workers engaged in textile and apparel production, and 2 million of them are women (Smid & Taskesen, 2002; ÜNAL, 2010). Informal labor is estimated to account for 50%–70% of this workforce.

Numerous workforce initiatives have been launched to upgrade the skill levels of the workers, including improving vocational and technical training and skills certification (Giris, 2010). The Turkish government declared 2007 to be the year of vocational training, and technical and vocational education and training (TVET) has become a national priority. Initiatives by the private sector have focused on

[10] The Turkey country case was developed by Ghada Ahmed.
[11] Turkey ranked seventh in the world production of cotton with about 675,000 tons in 2007/2008 and is projected to grow by 30% in 2010 (Demirsar, 2010).
[12] Turkey's labor force is approximately 24.7 million (22.2 million employed and 2.5 million unemployed), with large numbers of unskilled and semi-skilled labor (Dimireva, 2009).

improving working conditions, providing training in occupational safety and health, and ensuring quality assurance to meet international standards and maintain supplier certifications. Some global brands, such as Liz Claiborne; Hugo Boss; and Marks and Spencer (M&S), train, certify and audit Turkish suppliers on quality control, information systems, and working conditions (Tokatli, 2007). Higher value added training, such as design, is conducted at local and European institutions and by using consultants.

Stage 1. OEM/ Full Package: 1980s –2000s

Turkey has carried out full-package operations since its entry into the global apparel industry. The apparel firms are vertically integrated and source almost 70% of raw materials locally. Turkey began exporting apparel in the 1980s, and it became the fifth-largest exporter in the world, after China, Hong Kong, Italy, and Germany. Turkey offered an attractive combination of free trade zones, skilled low-cost workers, and proximity to Europe that enticed European companies to set up operations and establish full-package networks within its borders in the 1980s (Seidman, 2004) (Neidik & Gereffi, 2006). By the 1990s, Turkey had established deep networks with European buyers, especially German firms—including Karstadt, Hertie, and Kaufhof; mail-order companies, such as Otto, Neckermann, Baur, and Bader; and other specialty chains, including H&M, C&A, Peek und Cloppenburg, and Mexx. In the early 2000s, some retailers and branded manufacturers, such as Levi-Strauss and The Gap, also established regional purchasing offices and branches in Turkey (Neidik & Gereffi, 2006).

The apparel sector developed a variety of products and processes, flexible and fast production, swift decision making, and other advantages that gave them a strategic edge within the fast-changing European retail market (Koçak, 2006). Full-package manufacturers started incorporating international standards in the 1990s. By 2000, just under half of the 74 listed Fortune 500 textile and apparel companies in Turkey had acquired International Organization for Standardization (ISO) certifications. Turkey also complies with international environmental standards regulated by the EU, does not use harmful dyes, and meets social audit requirements (Tan, 2001). In January 2004, Turquality (Turk and Quality) was introduced through the joint efforts of the Under Secretariat of Foreign Trade, the Turkish Exporter's Association, and the Istanbul Association of Textile and Apparel Exporters (ITKIB). The Turquality brand is a mix of marketing, quality upgrading, and strategic positioning implemented in the Turkish and global markets. Fifteen apparel firms have qualified for the Turquality certificate (Koçak, 2006).

Workforce Development. Apparel workers acquired the technical skills for full-package supply through training, skill transfer, and a developed knowledge of textile production. Workers completed at least eight years of mandatory basic education, followed by training in technical high schools focused on industry-specific tasks—such as pattern and fabric operations, sewing, ironing, packing, labeling,

subcontracting, and production scheduling—at local vocational schools following high school. Apprenticeships also played a key role, with many employees being hired at 15 years old.[13]

Technology and information transfer was facilitated by returning émigrés who had worked in the industry abroad. Two examples are noteworthy. In 1992, the Dutch government closed companies operating in the Turkish apparel enclave in Amsterdam, and over half of these companies relocated to Turkey moving into the country´s Free Trade Zones (Seidman, 2004). Second, Turkish entrepreneurs working in Germany acquired skills abroad and then established German-Turkish firms in both countries facilitate upgrading (Seidman, 2004).

Due to the presence of the textile industry, there were workers with education, training and knowledge in textiles necessary for full-package manufacturing firms to emerge. Several universities such as Ege University offer Bachelor degrees programs associated with the textile industry. The Department of Textile Engineering at Ege has an integrated training mill, with seven different programs using industrial-size production machines (Ege University, 2010). The machines are used for training students as well as R&D. The department also has a separate Textile Research and Application Centre, which is mainly involved in industrial research projects, consulting, courses, and training activities. Ege University's Department of Textile Engineering is one of the founders of the Turkish Scientific and Technical Research Council-Textile Research Centre (TÜBİTAK-TAM), which provides applied research and training in textile and apparel.

These factors allowed firms to rapidly meet the buyers' required volumes on time and to fulfill their quality standards (Tokatli & Kizilgiin, 2004). Work process became standardized and workers began to specialize in specific skills such as overlocking. The majority of the workers that supply global brands must participate in training in order to meet certification requirements. The Joint Initiative on Corporate Accountability and Workers Rights was launched in 2003 between global buyers and local public institutions to monitor the adoption of these requirements and develop training programs. In 2009, the Professional Qualifications Authority (Mesleki Yeterliki Kurumu Resmi) was established to work with the private sector, NGOs, and other government institutions to establish professional standards, job profiles, qualifications, testing centers, and certifications.

[13] The Apprenticeship and Occupational Training Law requires companies to provide apprentices with 8 to 10 hours of education and training per week, to limit their working hours to 35 hours per week, and to offer them a minimum of 20 days of paid leave per year. The government covers the employers' social security costs for the apprentice. Regulation of this provision appears to be weak; some manufacturers have large portions of their workforce under "apprenticeship" status, even though the law limits their hiring to 10% of the workforce, and fails to provide the required hours of training (Erma, 2010).

Stage 2. ODM Design: 2000s to Present

Turkish firms moved into the design segment of the value chain as part of a broader strategy to establish the country as a fashion center, leveraging the country's OEM production model with short lead times (under four weeks). Industry associations and government organizations began working in collaboration to promote Istanbul as one of the world's top five fashion centers by 2023. In 2010, various industry groups collaborated to organize the third "Istanbul Fashion Week" to strengthen Turkey's competitiveness in fashion and design. Deep relationships with retailers such as M&S seeking additional services from their local suppliers also facilitated upgrading into design services. By 2007, firms such as Denizli were designing about 10% of M&S garments manufactured in Turkey (Tokatli et al., 2008). In addition, some firms such as Yavuz Tekstil developed their own designs. Firms that added design as part of their offering as full package manufacturers are seeking out regional opportunities in the Middle East and Africa, where Turkish ODMs offer a competitive advantage with unique designs that harmonize heritage and modern fashion.

Workforce Development. Upgrading into ODM requires access to highly skilled and trained human capital. In 1996, there were very few fashion designers in Turkey. However, this number grew considerably during the next 10 years (Tokatli & Kizilgiin, 2004). Today, there are hundreds of designers in the country. These designers are highly skilled and they are usually trained in European design and fashion schools. Numerous firms, such as Bilsar, the Turkish shirt maker for labels—such as Brooksfield, Arrow, and Rodier—also hired internationally recognized designers and consultants to research market trends and help clients to develop new designs (Tokatli & Kizilgiin, 2004).

While this segment of the value chain initially relied on international talent, over the past two decades, Turkish design has begun to emerge in its own right. Local designers have developed their own portfolios and worked directly for ODMs or as consultants. Organizations such as the IKTIB worked with the private sector and government institutions to establish fashion design vocational training schools that offer seminars and short courses on a variety of topics, in addition to organizing business trips. Istanbul Fashion Academy was established in collaboration with the EU and IKTIB as part of the Fashion and Textile Cluster in 2005. The Academy trains students on the use of the latest technology, fashion, design, fashion product development, as well as fashion photography, media, management, and marketing.

Stage 3. Own Branding (OBM): 2000s to Present

Turkish firms have also realized that in order to build a strong global presence as ODMs that could rival their Italian competitors, they need to upgrade into OBM, the next segment of the value chain. This was supported by the Turkish Government, which put incentives in place for firms to upgrade into branding and increase their competitiveness in global markets.[14] Leading local firms such as Sarar and Mithat already develop and produce their own brands, which they export to global markets and sell domestically. Others are focused on becoming global retailers, such as Bilsar that has retail stores in Milan and Paris. In 1998, Sarar withdrew from its 13-year partnership with Hugo Boss to establish its own global brands for men's suits. These suits are manufactured in Turkey and sold both locally and abroad (Tokatli, 2007). Mithat, previously a full-package supplier with a large number of European and American buyers, today designs and retails three brands of its own that are sold in Poland, Russia, and Turkey.[15] Erak clothing, a full-package supplier to international brands such Calvin Klein; Guess; and Esprit since 1984 (Tokatli & Kizilgiin, 2004), was an early mover and created its own brand, Mavi Jeans, in 1991. Since then, the firm has gradually transformed itself into an original brand-name manufacturer and retailer (Tokatli & Kizilgiin, 2004). Mavi Jeans has global sales of almost $80 million a year. The jeans are sold in over 4,600 specialty stores and department stores in 28 different countries (Tokatli & Kizilgiin, 2004).

Workforce Development. In addition to experience gained from working closely with global brands in the early stages of the industry's development, Turkey's apparel sector has relied on highly skilled employees to guide its upgrading into this segment of the value chain, particularly to staff their marketing departments. This is supported by a large number of university business schools and vocational schools that offer industry-relevant courses, such as marketing and brand management. External consultants also play a central role in providing training for staff. Today, almost all textile and apparel business organizations offer training seminars and courses on the development and retailing of brands from the high school level upwards (Tokatli & Kizilgiin, 2004). Organizations such as IKTIB offer short courses and training seminars on marketing, sales, brand management and value added production, as well as recruitment and selection strategies. KOSGEB, a quasi-governmental organization affiliated with Ministry of Industry and Trade of Turkish Republic, also provides marketing support to small and medium sized apparel enterprises and offers training and consulting services to build their capacity in the sector.

[14] These incentives include reimbursements of up to 60% of the cost for a maximum of three years for personnel expenses (including training and recruiting highly qualified personnel), machinery, equipment and software, consultancy, and R&D related materials (Dimireva, 2009).
[15] Although Mithat has successfully upgraded into OBM activities, the company has also maintained its full package services for its global buyers (Tokatli & Kızılgün, 2009).

Table 3.6 provides an overview of these key workforce development initiatives pursued in Turkey to foster upgrading.

Table 3.6. Turkey: GVC Upgrading and Workforce Development Initiatives

Stage 1 OEM (Full Package) 1980s–2000s	Stage 2 Design 2000s–Present	Stage 3 Branding 2000s–Present
Private Sector Workforce Initiatives		
• Global brands, such as Levi Strauss, assist subcontractors with management, and occupational safety *training* programs.		
• Turkish manufacturers provide formal internal training on quality control, logistics, management, marketing, and sales.		
	• ODM and OBM firms train designers in Europe and hire consultants to train on design and branding.	
Public Sector Workforce Initiatives		
• Public universities, vocational schools and high schools offer specialized courses and certifications in engineering, information systems, design, marketing, sales, tailoring, and others.		
Multisector Workforce Initiatives		
• Professional Qualifications Authority (Mesleki Yeterliki Kurumu Resmi) is established to work with the private sector, NGOs and other government institutions to establish professional standards, job profiles, qualifications, testing centers, and certifications. • Istanbul Textile and Apparel Exporters' Association (IKTIB) collaborates with the government and private schools to offer certificate programs in financial management, foreign trade, sales and logistics management; academic programs in fashion design and technology (master's and certificates), fashion prep, and foundation art and design; and continuing education programs in fashion design, management, photography and styling, drawing, accessorizing and other workshops. IKTIB has also started 6 industry specific schools such as Istanbul Fashion Academy, Technical and Vocational High School Girl Hunters IHKIB and Zeytinburnu İDMİB Technical and Vocational High School for Girls (IKTIB, 2010). • Horizons 2010: Turkish Clothing Manufacturers Association (TGSD) is working with the private sector and public institutions to improve the global positioning of Turkish apparel sector that includes on the job and in-house training and recruitment and selection of personnel (TGSD, 2010). • Turkish Textile Employers' Association (TUTSIS) collaborates with schools and started a vocational school to train young workers on skills such as computers, entrepreneurship and marketing (TUTSIS, 2010) • JO-IN Project (2003-2007) public private partnership training on management systems and industrial relations to improve labor standards, codes and working conditions among suppliers. NIKE is involved in the JO-IN Project (Joint Initiative on Corporate Accountability and Workers Rights) in Turkey, which involves six major multistakeholders initiatives to test common codes and monitoring programs. Seven multinational brands joined the initiative for the purpose of conducting the trial project in Turkey: NIKE, The Gap, Adidas, Hess Natur, Marks and Spencer, Patagonia, and Puma.		

Source: Duke CGGC.

B. Sri Lanka[16]

Sri Lanka is an ODM niche product supplier, with 90% of its apparel exports going to the EU-15 (48%) and United States (41%). The sector focuses on four complex products: (1) intimate apparel, (2) activewear, (3) swimwear, and (4) children's clothing. Quota systems, liberal trade, and investment policies, government support, and dedicated local entrepreneurs played central roles in the development of Sri Lanka's apparel sector. The apparel industry emerged after 1977, when the country liberalized its economy, and it has grown strongly over the last three decades to become Sri Lanka's largest industrial sector, accounting for over 50% of total exports by the turn of the century. In the 2000s, growth was

[16] The Sri Lanka case was developed by Stacey Frederick.

fueled by the EU granting Sri Lanka reduced and later duty-free access to the EU market under the GSP, and later the GSP-plus schemes. Today, the larger Sri Lankan apparel manufacturers have opened factories overseas in Africa and Jordan, among other locations, as well as developing backward linkages to textile industries in India and Bangladesh. This has positioned Sri Lanka as a regional sourcing hub that organizes production throughout the region (Kelegama & Wijayasiri, 2004).

Industrial Organization

Foreign direct investment initially played an important role in the establishment of the apparel industry in Sri Lanka. However, these early investments by East Asian apparel firms encouraged local entrepreneurs to invest in the sector and to exploit the markets guaranteed by quotas in the early and mid-1980s (Kelegama, 2009). By the early 1990s, local firms began to dominate the apparel industry in Sri Lanka, and by 2000, around 80%–85% of the factories were owned by locals (Kelegama & Wijayasiri, 2004).[17] The sector has consolidated over the past 10 years, with many smaller factories exiting the sector. Those that remain have contractual relationships with larger factories (Samaraweera, 2008). The main reason for this shift to leverage economies of scale is the comparatively higher cost of production in Sri Lanka once quota restrictions were lifted, as well as security risks related to the political turmoil there (Samaraweera, 2009).

Workforce Development

The labor force in Sri Lanka is better educated and more skilled than in most other Asian countries. This can be explained by a good general education system and the presence of specific education and training facilities for the apparel and textile sectors at different levels, including university degrees in technical capabilities and design. Foreign investment initially brought crucial technology, know-how, and skills to Sri Lanka, during which time 90% of training was conducted in house by internal training departments (Kelegama & Epaarachchi, 2001). Today, Sri Lankan workers often hold supervisory or management positions in other countries in the region. This availability of a more highly skilled labor allows firms to offer more services to buyers. However, the negative image of apparel manufacturing for the female-dominated workforce (over 80%) has proven problematic for labor availability in Sri Lanka amongst both skilled and unskilled workers.

Stage 1. Start-up Production–CMT: 1980s–1990s

During the 1980s and 1990s, the liberal trade and investment regime enticed East Asian apparel exporters seeking to bypass quotas to invest in Sri Lanka's CMT production facilities. European investors also established operations in the country (Kelegama & Wijayasiri, 2004). As a result, Sri Lanka had an early-mover advantage and built up relationships with transnational apparel producers and global buyers

[17] A survey by the Ministry of Industries (2004) provides the following distribution of ownership: Sri Lankan ownership, 74%; foreign ownership, 13 %; and joint ownership, 10% (Tilakaratne & Murayama, 2006).

before other South Asian countries did. In the late 1980s, local firms started to grow, including MAS Holdings and Brandix. Today, these firms are the two largest apparel manufacturers in Sri Lanka, together employing almost 70,000 employees, with 45 production facilities in Sri Lanka and India, and selling to major global buyers including Victoria's Secret, M&S, and Nike. By the end of the 1990s, these firms began to switch from basic outerwear products such as t-shirts, sweaters and polo shirts to produce more sophisticated products, upgrading into niche market segments in intimates and active wear. Product upgrading efforts have spread more broadly since the early 2000s, but important differences remain between large manufacturers and medium and small firms.

Workforce Development. In the early stages of the apparel industry in Sri Lanka, workforce development was not a priority. Training was primarily carried out on the job, and managers and supervisors were focused on minimizing training costs rather than improving productivity (Kelegama & Epaarachchi, 2001). Most initiatives at this stage were led by the public sector. In 1976, with the support of United Nations Educational, Scientific and Cultural Organization (UNESCO), the Department of Textile & Clothing Technology was created at the University of Moratuwa, in collaboration with Leeds and Manchester Universities (UK). The government also established two training centers in 1983: (1) the Sri Lankan Clothing Industry Training Institute, and the (2) Textile Training & Service Center under the Ministry of Industrial Development. Extension courses were added in 1991 in production planning, quality control, pattern production and merchandising, and Bachelor of Science (B.S.) and Master of Arts (M.A.) degrees were added to the department's offerings in 1993.

Stage 2. From CMT to Original Design Manufacturing (ODM): 2000s to Present

This period was characterized by both functional upgrading into apparel design, as well as product upgrading in the production of more complex and sophisticated products. This upgrading was facilitated by two key factors. First, the strong linkages established with four global buyers in early stages of industry development: (1) The Gap, (2) M&S, (3) Victoria's Secret, and (4) Nike. They accounted for around half of Sri Lanka's apparel exports by the turn of the century, and collectively they facilitated asset-specific investments by providing stronger guarantees for future orders. Local Sri Lankan firms set up in-house design teams to work on product design and development; they established offices in key markets, such as New York and London, so that their designers could work closely with teams of brand-owners to help streamline the production process and reduce lead times (Wijayasiri & Dissanayake, 2008).

Second, in 2002 the government collaborated with the private sector to establish the Joint Apparel Associations Forum (JAAF) to identify industry weaknesses and develop a comprehensive five-year plan (2002-2007) to drive growth in the sector (Kelegama, 2009). A central objective of the 5-year strategy was to transform the industry in two ways: (1) from a contract manufacturer to a provider of fully integrated services, including input sourcing, product development, and design; and (2) to increase market

penetration to the premium market segments by shifting from basic items to superior branded products. As a "total service provider" the industry would not only cut-and-sew apparel, but would cover more parts of the value chain. By upgrading into more sophisticated products, the sector could remain competitive in the face of the rise of low cost centers such as Vietnam.

Between 2000 and 2008, firms were able to shift production from 80% in volume, low-value products to 50% of their products in higher value items for specialty and department stores. While low-value production is still present, largely to the EU market because of GSP-plus scheme in effect from 2005 through August of 2010, a significant portion of the apparel sector in Sri Lanka today provides full manufacturing services, offering input sourcing and an understanding of product development and design. Some large manufacturers have even established their own brands in regional markets, but this is still limited.

Workforce Development. While workforce development was not prioritized during the early stages of the industry's development, human resources were viewed as particularly important in the post-MFA environment (Kelegama, 2009). JAAF's human resource development subcommittee focused on raising productivity by creating a competent and skilled human resource pool, rather than investing only in technological improvements. The government allocated part of the budget in its 5-year plan to increasing productivity in apparel by focusing on strengthening marketing capabilities, creating design capabilities, improving productivity within firms, developing technical competence, and encouraging a cohesive focus for apparel and textile education. In 2007, with the assistance of companies in the sector, JAAF launched a comprehensive training manual designed to help education providers align their courses with the needs of the clothing industry. The manual, *Competence and Beyond,* outlines the skills, standards and knowledge required for 139 jobs relating to the clothing supply chain, from spinning to customer care. JAAF believes the manual is the first documentation worldwide to map out all the key job roles in the apparel and textile industries (Tait, 2007).

Since 2003, MAS and Brandix have also been instrumental in establishing workforce development initiatives. Both firms have set up institute training facilities in Sri Lanka to train future workers, with a particular focus on female empowerment. Other lead firms, such as Nike, have invested in product development facilities in Sri Lanka, providing an avenue for workers to learn advanced skill-sets on the job.

Many of the initiatives launched by both the public and private sectors involved foreign educational institutions. These included JAAF's partnership with the Chartered Institute of Marketing from the United Kingdom to strengthen marketing competencies of the industry and strengthen links between local manufacturers and foreign buyers. JAAF also established an alliance with North Carolina State University's College of Textiles to strengthen the capacities of local training institutions to provide

world-class programs. The government also launched a new four-year B.S. degree program in Fashion Design and Product Development through the Department of Textile & Clothing Technology in collaboration with the London College of Fashion.

Table 3.7 provides an overview of the industry evolution and the corresponding workforce development initiatives that took place in Sri Lanka during the past three decades.

Table 3.7. Sri Lanka: GVC Upgrading and Workforce Development Initiatives

Stage 1: Cut-Make and Trim (CMT) 1980s – 1990s	Stage 2: Original Design Manufacturer (ODM) 2000s to Present
Private Sector Workforce Initiatives	
• 1980s: Brandix and MAS Holdings open in Sri Lanka by local entrepreneurs. They keep their training internal. These are the two largest apparel companies within the country.	• 2002: JAAF-Chartered Institute of Marketing (CIM-UK): Graduate Diploma in Apparel Marketing developed to strengthen marketing competencies of the industry and strengthen links between local manufacturers and foreign buyers. • 2003: MAS Holdings: Women Go Beyond: Program to empower women, both at work and at home, by providing skills and training while recognizing and rewarding special achievements. Has given MAS' corporate social responsibility (CSR) activities global recognition. • 2005: Brandix College of Clothing Technology: Training programs up to degree level in apparel; first of its kind in Sri Lanka. College is in collaboration with the Royal Melbourne Institute of Technology (RMIT) in Australia. Students in the 3-year degree program earn a Bachelor of Applied Science in Textile Technology. • 2008: MAS Institute of Management & Technology: Goal to provide affordable world class training facilities for youth and corporate organizations. Offer soft skills development and textile and apparel programs. • 2008: Initial lead firm investment in manufacturing and technical development facilities: Nike and M&S.
Public Sector Workforce Initiatives	
• 1976: Department of Textile & Clothing Technology established at the University of Moratuwa; in collaboration with Leeds and Manchester Universities (UK); support from UNESCO. • 1991: DCTC added T&C extension courses (production planning, quality control, pattern production and merchandising. • 1993: DCTC added B.S. Textile & Apparel Technology (4-year); M.A. Textile or apparel studies or textile and apparel management.	• 2002: new 4-year B.S. degree program in Fashion Design and Product Development through the Department of Textile & Clothing Technology in collaboration with the London College of Fashion. • 2009: Sri Lanka Textile & Apparel Institute formed: merger of the Clothing Industry Training Institute and the Textile Training & Service Center; mission is to facilitate sustainable development of Sri Lankan textile & apparel industry by producing competent workforce with specialized skills. • Government-run Vocational Training Authority offers 6-, 3-, and 1-month training courses.
Multisector Workforce Initiatives	
• 1984: Sri Lankan Clothing Industry Training Institute and the Textile Training & Service Center established under the Ministry of Industrial Development; technical assistance by United Nations Development Programme (UNDP) and United Nations Industrial Development Organization (UNIDO) and later the Japanese International Cooperation Agency.	• 2004: JAAF-Government: Productivity Improvement Program to provide leaner, more effective organizations, which would result in higher productivity, lower costs, better quality and on-time delivery. • 2004: JAAF-North Carolina State University's College of Textiles: Agreement to strengthen the technical capacity of the industry by delivering an affiliated diploma in collaboration with the Clothing Industry Training Institute and the Textile Training & Service Center. The alliance is to assist the institutes in raising their training programs to world-class standards. The focus areas of the six month to one year programs include technical competence, supply chain development, management and industrial engineering. • Grassroots' Skill Training Program: supported by the U.S. Agency for International Development (USAID) to create four model training centers within the 31 vocational training centers providing training for the textile and clothing sectors. Objectives include upgrading infrastructure, equipment and resource people, providing education in multiple disciplines, providing guaranteed employment upon completion of the program, industry accreditation, and empowering rural youth with valuable skills and knowledge.

Source: Duke CGGC.

C. Bangladesh[18]

In 2008, Bangladesh was the fourth largest global exporter of apparel. The majority of Bangladesh apparel exports are to the EU-15 and United States. In 2008, these two markets accounted for nearly 85% of apparel exports, at 58% and 27%, respectively.[19] The apparel industry in Bangladesh started in the late 1970s and became a leading sector within a short period of time. In 2008, apparel exports accounted for 75.8% of the country's total exports (Haider, 2007). In the 1980s, the apparel industry of Bangladesh was concentrated mainly in manufacturing and exporting woven garments. In the early 1990s, the knit section of the industry emerged, and surpassed woven exports by the mid-2000s.[20] In both categories, Bangladesh is in the process of moving from CMT to OEM arrangements to provide sourcing and logistics capabilities for full-package operations. Knitwear is now Bangladesh's largest export sector, contributing 41.8% of total national export earnings for the 2008–2009 financial year. The MFA-quota system, the availability of cheap labor and the presence of a domestic textile industry are amongst the key reasons behind the success of the industry (Haider, 2007; Knowles et al., 2008).

Industrial Organization

Foreign investment played a central role in establishing the apparel industry in Bangladesh; however, the industry is now dominated by locally owned firms. Lead buyers include U.S., European and Japanese firms, such as JC Penney, The Gap, Levi Strauss, H&M, Marks and Spencer, and Uniqlo. There are three different types of garment manufacturers in Bangladesh: (1) integrated manufacturing, where factories import the cotton and do the rest of the production process (spinning, weaving/knitting, cutting and sewing) on their own; (2) factories importing yarn and then completing the rest of the manufacture; and (3) factories importing fabric and sewing the garment in CMT factories. Most of the knit factories belong to the first two categories and woven factories belong to the third category (World Bank, 2005b). This is the result of regulations of the EPZs, which until 2005 required that FDI be associated with backward-linkage industries (spinning and/or weaving/knitting, dyeing and finishing).

Bangladesh Apparel Workforce

In 2008, the apparel industry employed 2.8 million workers in 4,743 garment factories. About 85% of garment workers are rural migrants, many are from poor and landless families, and the garment industry has given them their first opportunity to earn wages (Knowles et al., 2008). Female employees are preferred in apparel factories and 80% of garments workers are women. These employees tend to be young, unmarried, impoverished, non-unionized, and more tolerant of poor working conditions, long hours, and low pay (Knowles et al., 2008). Employment in this industry has made women visible in

[18] The Bangladesh case was developed by Stacey Frederick.
[19] UNCOMTRADE; apparel represented by HS1992 (61+62).
[20] Knitwear exports surpassed woven exports in volume by 2004, and in value by 2008.

national employment statistics and has brought about social change. A factory job is one of the few socially acceptable ways for uneducated or low-educated women to earn a living.[21]

Bangladesh has a lack of skilled workers in the apparel sector at both the machine operator and mid-management levels, including technical professions. At the operator level, the skills gap is an estimated 25% (Elmer, 2010).[22] By 2015, the entire textile and apparel complex is estimated to need 70,654 textile technologists, which represents a gap of 65,010 from the current number of degree holders in the industry. Workforce initiatives to close this gap have been implemented by buyers, local firms, educational sector and the government.

Stage 1. CMT: Mid-1980s-1990s

Bangladesh's first garment exports occurred around 1976 (Haider, 2007), followed by a boom in the industry in the early 1980s. During this time, the Bangladesh Export Processing Zone Authority was established (1980), and the two most significant EPZs were created in Chittagong (1983) and 10 years later in Dhaka (1993). In the early 1990s, Bangladesh also established a knitwear sector. At this time, the large majority of firms were CMT factories. By 2000, two-thirds of apparel firms in Bangladesh were involved in CMT production (World Bank, 2005a). Bangladesh's garment export industry flourished under the MFA framework. There were less restrictive import quotas for Bangladesh under the MFA, compared to those for traditional garment exporters, such as China, Hong Kong, Korea, and Japan, and this helped Bangladesh's export industry to grow. The tariff and quota-free access to the EU market under the GSP scheme since the early 1980s were additional advantages (Ahmed, 2009). The GSP scheme allows EU importers to claim full tariff drawback on imports from Bangladesh, provided that manufacturers adhere to the rules of origin requirements.[23]

Workforce Development. When Bangladesh's garment industry first started to expand in the mid-1980s, no systematic and organized in-house training for operators was available. Firms hired young female workers from rural areas with little or no formal education or training. They were first hired as "helpers" for a period of 3–6 months until they picked up the skills necessary to become machine operators. Floor supervisors were selected in-house from the most experienced and senior-level machine operators and were promoted without receiving any additional training (Elmer, 2010).

Formal workforce development programs were first introduced toward the end of the 1980s at the initiative of donor agencies and the two main private industry associations: (1) the Bangladesh Garment

[21] In rural Bangladesh, women live in a traditional environment, which does not permit them to go to cities alone (even outside the village in some cases). Rural women thus largely remain outside the purview of the visible cash economy, with job opportunities often limited to the domestic and informal economies. It is a relatively new development that a large number of women are going to work in the city- based apparel factories, inevitably changing their status and economic significance (Ahmed, 2009).
[22] Estimates range from 20%–30%, and the Bangladesh Garment Manufacturers and Exporters Association's (BGMEA) official estimate is 25%. Bangladesh has 2 million operators out of a total apparel workforce of 3.5 million people.
[23] On average, the tariff rate of garment products into the EU is 12.5%, but this is zero for Bangladesh under the GSP.

Manufacturers and Exporters Association (BGMEA), and (2) the Bangladesh Knitwear Manufacturers and Exporters Association (BKEMA). Foreign-owned firms in the EPZ began to provide more systematic and organized in-house training, followed by local firms around 1990, often through a combination of pressure and technical assistance provided by buyers. Foreign buyers went on to establish small-scale training academies and technical assistance projects financed through their CSR budgets, and with their preferred suppliers (Elmer, 2010). In 1995, the public sector also started to offer skill formation programs offering technical education and vocation training to supply the garment industry with qualified workers at both the operator and mid-management levels (Elmer, 2010). These workers were subsequently trained on-the-job by their supervisors. Mid-management level positions were filled with foreign workers from countries such as Sri Lanka or India.

Stage 2. Shifting from CMT to OEM–Present

Today, firms are moving from CMT to full-package production. Bangladesh's shift into the OEM stage has been through the development of a domestic textile industry for knitted textiles as apparel firms can source textiles locally to incorporate into final apparel exports. This was largely driven by the two-stage rule of origin requirement to export apparel duty-free to the EU under the "Everything but Arms" agreement for least developed countries.[24] Textile production began with knitted fabric, moved to yarn, and finally started to emerge for woven fabrics.

In 2008, the BGMEA developed a strategy to increase clothing exports from Bangladesh (2008–2013) by encouraging domestic manufacturers to increase labor productivity, diversify product lines and export markets, and invest in R&D and human resources. The plan also involved lobbying the government to improve domestic infrastructure—including gas, electricity, and roads—and to implement policies to encourage domestic and foreign investment in the textile and clothing industry.

Workforce Development. Initiatives launched in this stage of the industry's growth have focused on increasing productivity of the workforce and preparing employees for further upgrading into higher value segments. These initiatives saw an increase in demand for training and development programs for the sector at both the technical and university levels, driven by firms under pressure from global buyers to increase their productivity following the end of the quota regime in 2005 (Elmer, 2010).

New external training organizations emerged to meet this demand, most notably the Institute of Fashion and Technology (BIFT) established in 1999 by the BGMEA. BIFT's courses focused on market-oriented skills needed by mid-management professionals and fashion designers for the garment industry. Graduates are absorbed almost entirely by the garment industry. BGMEA initially hired a team of foreign lecturers with donor support from IFC, but BIFT has since become a self-financed institution with

[24] The two-stage Rule of Origin required raw materials to undergo two transformation processes in Bangladesh to qualify for duty free imports: yarn to fabrics, and fabrics to clothing.

revenues collected from student fees.[25] BIFT offers four-year B.S., Master of Business Administration, B.S. Honors, diploma, and certificate programs, awarding around 240 diplomas, 700 certificates, and 370 Honors and Master degrees per year. BIFT maintains collaborations with the London College of Fashion (UK), Nottingham Trent University (UK) and Niederrhein University (Germany) and will shortly be accredited as a university (GTZ, 2008). The Pearl Fashion Institute is another, smaller private sector garment training provider. Pearl offers diploma and certificate programs (GTZ, 2008).

Within the last 10 years, a few private universities, such as Ahsanullah University of Science and Technology, Prime Asia University, South-East University, City University, and Green University of Bangladesh, have established textile departments offering a B.S. in Textile Engineering. The Bangladesh Department of Textiles (DOT) runs four 4-year degree colleges, six undergraduate level textile institutes offering diplomas in textile engineering, and 40 vocational institutes, offering a 10-class equivalent vocational education in the area of textile technology and garments. Other government entities have created textile engineering departments at Dhaka University and the Mawlana Bhasani University.

In 2005, the government saw that strengthening skills in the textile sector would be key for driving continued growth into full package supply, and it began to address skill shortages by setting up more technical and vocational institutes. It upgraded the Bangladesh College of Textile Engineering and Technology to a textile university, opened textile facilities in all technical universities, and offered textiles as a subject in the curriculum of all technical schools, colleges, and technical institutes. Furthermore, the government converted TIDC into a national institute to serve the needs of the national textile and garment industry as the National Institute of Textile Training Research and Design project. The Bureau of Manpower, Employment and Training under the Ministry of Labor and Ministry of Overseas and Welfare today directs 38 Technical Training Centers in Bangladesh, of which 27 offer apparel-related classes. Overall student enrollment capacity more than doubled, increasing available labor at numerous levels with vocational training. Additional initiatives included donor-funded projects aimed at strengthening the public TVET system for the garment skills development (see ***Table 3.8*** for specific details of each of these initiatives).

The most comprehensive technical assistance program catering to the garment industry is the Promotion of Social, Environmental, & Production Standards (PROGRESS) project. PROGRESS is jointly sponsored by the Bangladesh and German governments, and implemented by German Technical Cooperation (GTZ). Since 2007, GTZ has sponsored a range of skill-development activities at both the operator and mid-management levels. It aims to enhance the competitiveness of the sector and establish

[25] BIFT also received support from the EU, Denmark, U.K. Department for International Development (DFID), Netherlands, Canada, and the Asian Development Bank (Elmer, 2010).

decent working and living conditions in the garment sector.[26] Both BGMEA and BKMEA have initiated operator training centers in poorer regions of Bangladesh in the north. These programs aim at providing socially marginalized groups with free training and guaranteed job placement in the garment industry around Dhaka. Some of those training centers have been operated jointly with government, with funding provided by donors or the associations themselves. Several of those operator training centers are public-private partnerships, but not all of them have been successful (Elmer, 2010). Private sector support of public programs has been limited because it has been viewed as competition.[27]

Table 3.8 provides an overview of upgrading and accompanying workforce development initiatives during the growth of the Bangladesh apparel sector.

[26] PROGRESS works in three main areas: social compliance; productivity improvement; and environmental compliance with a focus on eco-efficiency.

[27] According to BGMEA, BGMEA and BMET signed an agreement to utilize the resources of all TTCs; BGMEA works with 27 of the 38 TTCs with programs in the garment industry.

Table 3.8. Bangladesh: GVC Upgrading and Workforce Development Initiatives

<table>
<tr><th>Stage 1: CMT
1980s–1990s</th><th>Stage 2: Shift to OEM
2000s</th></tr>
<tr><td colspan="2">Private Sector Workforce Initiatives</td></tr>
<tr><td>• Operators: Young female workers from rural areas with little or no formal education were first hired as “helpers” for a period of 3–6 months until they picked up the skills necessary to become machine operators.
• No systematic and organized in-firm training for operators provided.
• Floor supervisors: Recruited in-house from the most senior and experienced machine operators without receiving any additional training.</td><td>• 2007: BGMEA: BIFT Sweater Manufacturing Training Center (BSMTC) created and offers a one-month sweater operator training program.
• 2007: Public-Private: BGMEA-BIFT and Department of Youth Development (DYD): One-month sweater knitting machine operator course. Upon graduation, students guaranteed employment in factories owned by BGMEA members. Land and building provided by DYD and BIFT covers the machines, trainers, accommodation, and food. Centers operate year round and train approximately 240 students every month. As of 2010, 3,500 people trained and placed.
• Lead Firm Programs: H&M (Sweden) has trained around 1,000 workers in supplier firms. This training model is often cited in Bangladesh as a good example of buyer financed garment skill training. Inditex (Spain), the parent company of Zara, trains union representatives at supplier firms to strengthen the capacity of worker unions in order to improve their collective bargaining power.</td></tr>
<tr><td colspan="2">Public Sector Workforce Initiatives</td></tr>
<tr><td>• 1978: Dhaka University’s College of Textile Technology launched the first four year degree program. A limited number of engineers typically went to work in the textile industry over the garment sector.
• 1995: Expansion of the TVET system led to the introduction of garment related skills training programs at the Technical Schools & Colleges (TSCs) under the Ministry of Education and the Technical Training Centers (TTCs) under BMET.</td><td>• 2006–2010: DOT: Establish 10 Textile Vocational Institutes
• 2006–2010: DOT: Upgrade Jorargonj Textile Institute and Pabna Textile Institute to Textile Engineering Colleges.
• 2006–2012: DOT: Establish Bangladesh Institute of Textile Technology (BITT)
• 2005–2009: MOTJ: Strengthen NITTRAD & TSMU Capabilities to Develop Textile Sector
• 2005-2013: DOT: Implement Diploma in Textile Engineering in six Textile Institutes</td></tr>
<tr><td colspan="2">Multisector Workforce Initiatives</td></tr>
<tr><td>• When the garment export industry in Bangladesh started to develop and grow in the mid-1980s, workforce development programs did not exist. Out-of-firm skills formation programs first developed in the period from 1985–1995 at the initiative of donor agencies and industry associations such as the BGMEA.</td><td>• 2007: PROGRESS Initiatives: Pilot Project with the Dhaka Ahsania Mission (DAM): GTZ and DAM with 30 factories: Two-month training modules for sewing and knitting machine operators with goal of training 2,000 disadvantaged youth over three years. PROGRESS Promote Female Operators to Line Supervisors: GTZ partnering with 30 factories. Project goal of training up 100 female operators to the supervisors' qualification standards set by the industry. The first group of 21 trainees graduated in June 2009.
• 2007: BGMEA; funding from the DFID Char Livelihoods Program (CLP); use of BMET TTC facilities: One-month woven machine operator course at four TTCs. BMET provided facilities and accommodations for students and trainers. BMGEA trained BMET trainers at BIFT and provided an employment guarantee to students. Curriculum was developed jointly by BMET and BGMEA and 1,000 people were trained and employed before the program was discontinued when CLP funding ceased. Many operators reportedly returned to their home villages.
• 2008: BKMEA Training Center: Payrabond, Rangpur BKMEA in partnership with Government with funding from GTZ and CLP: Free training provided in sewing, knitting, and quality for students at least 18 years old that have completed grade 8 with a focus on vulnerable females (widowed, divorced, or abandoned). In two years, 2,300 students have completed the training. Government provides infrastructure and other expenses (food, accommodation) and trainers covered by BKMEA. Trainees guaranteed employment by BKMEA members. Cost per year for the training institute is US$85,000, and the cost per student is around US$200.
• TVET Garment Courses: Funding from DFID to UCEP-Bangladesh (local NGO): UCEP provides TVET through eight technical schools. Garment related courses include (i) Tailoring and Industrial Sewing Operation (one-year course; 80 per group) (ii) Industrial Wool Knitting Operation (six-month course; 60 per group), and (iii) Garment Finishing & Quality Control (one-year; 40 per group).
• Skills Development Project: Funding from ADB (US$66.7 million); training provided by private entities and NGOs: Strengthen the TVET system by making it more responsive, flexible, and demand-driven. Will provide short-term training to 25,000 trainees in four sectors with a focus on the poor and those not completed grade 8. Ready Made Garments is one of the sectors.</td></tr>
<tr><td colspan="2">• Donor agencies mainly support training initiatives through the private sector, notably BGMEA and BKEMA. The most important donors supporting apparel skills formation programs have been the IFC, EU, and GTZ and some from UNIDO and the ILO.</td></tr>
</table>

Source: Duke CGGC.

D. Lesotho[28]

The Lesotho apparel industry exported slightly over US$350 million in 2008, accounting for approximately 60% of the country's total exports (Shakya, 2010). Apparel manufacturing activities are concentrated mostly in the assembly/CMT segment in the chain. Export growth of over 500% between 1996 and 2008 was driven initially by favorable trade agreements (Staritz, 2010). Most exports are directed to OECD markets (Lall, 2003), although South Africa has become an increasingly important market following the phase out of the MFA system (Morris et al., 2011).[29] Key global buyers, such as Levi Strauss and The Gap, have been among the most important drivers of responsible competitiveness in the industry (Hamann et al., 2008). The Gap alone is responsible for about one-third of Lesotho's total garment exports (Hamann et al., 2008). Production is largely concentrated in jeans,[30] slacks, knit shirts, and blouses, using both cotton and synthetic fibers. Lesotho faces a number of challenges to the sector's growth including water shortages, lack of industrial space, prevalence of HIV/AIDS, and low labor skills. The sector's stakeholders have recognized the need to develop labor skills, which is expected to have measurable results on productivity and the reliability of the supply chain in the long term (BEDCO, 2009; ComMark Trust, 2009; Shakya, 2010).

Industrial Organization

The sector is highly dependent on FDI, which accounts for about 95% of the investment in apparel. Taiwanese and South African apparel firms first shifted production from South Africa to Lesotho in the 1980s. There were 42 large apparel firms operating in Lesotho in the mid-2000s. They are foreign-owned and almost exclusively East Asian: 31 from Taiwan, two from Hong Kong, one from Singapore, and eight from South Africa (MIGA, 2007). So far, only two local apparel entrepreneurs have emerged in Lesotho. The majority of firms (71%) manufacture knitted garments, while 19% of the firms deal with denim jeans/woven garments. Lesotho has one vertically integrated denim manufacturing mill – the Formosa Mill, which produces its own yarn and more than 7,000 tons of denim fabric annually (Bennet, 2006).

Local Taiwanese operations in Lesotho are limited to manufacturing, while input sourcing, product development and design, merchandising and marketing, logistics, and the relationship with buyers are located at the headquarters in Taiwan. Local linkages are low, which is in line with the quota hopping and footloose strategy of these firms. The Asian firms in Lesotho do not have a regional strategy, they focus on long production runs for U.S. customers, and they do not invest in local capacity building.

[28] The Lesotho case was developed by Ghada Ahmed.
[29] Between 2006 and 2009, clothing exports from Lesotho to South Africa increased 14-fold to reach US$28 million (Morris et al., 2011).
[30] In 2006, Lesotho produced about 26 million pairs of denim jeans a year that were supplied by eight factories, collectively employing almost 15,000 workers. Almost 98% of all Lesotho-made jeans are sold in the United States; smaller volumes are sold into the EU, Canadian, and SACU (Southern African Customs Union) markets (Bennet, 2006).

On the other hand, the South African investors are in Lesotho to use low-cost labor close for their end market (South Africa), which they supply almost exclusively. These firms specialize in short, more complex production runs, with high fashion content. Although statistics are not yet available, the MFA phase out saw the beginning of a shift of Taiwanese firms out of the industry and a strengthening of South African ownership (Morris et al., 2011).[31]

Workforce Development

Lesotho has a large pool of low-wage, literate, but not technically, trained labor. The textile and apparel industry is Lesotho's largest formal sector employer, and jobs in apparel reached a peak in 2004 at 54,087 workers. Employment declined by about 26% with the phase out of MFA in 2005, but it has increased again in recent years (Bennet, 2008; Morris et al., 2011; Shakya, 2010). Over 80% of total employment is in foreign firms: 85% are female workers, many of whom are the head of households (Bennet, 2008; Staritz, 2010). Lesotho's worker productivity is low, ranging from 30% to 70% of that in East Asia (Lall, 2003), although apparel manufacturers that have begun to initiate internal productivity improvement training programs have noted substantial improvements in their competitiveness (The MFA Forum, 2006).

Meeting skill requirements of the industry is complicated by the prevalence of HIV/AIDS. Lesotho has the third-highest HIV rate in the world, with 23.2% of those aged 15–49 living with HIV and about 43% of the workers are estimated to be HIV positive (ALAFA, 2007; ILO, 2006 - 2009). In 2006, the private sector initiated the Apparel Lesotho Alliance to Fight AIDS (ALAFA) to provide prevention and treatment for about 43,000 mostly female workers in the textile and apparel industry (ALAFA, 2007). Impacts of the initiative on productivity, absenteeism and loss of trained workers are beginning to be felt, prompting further public private partnership prevention programs.

Stage 1. CMT: 1990s–Present

Lesotho entered the apparel value chain by attracting FDI, mostly from Taiwan in the CMT segment.[32] Foreign investors initially came to Lesotho because of political circumstances[33] (including sanctions on South African trade) and trade agreements, and not in response to lower production costs or other competitive advantages. By 1990, most of the Taiwanese firms present today were operating in Lesotho, having moved their production from South Africa. Their presence attracted other East Asian firms to relocate CMT operations to take advantage of the Lomé Convention, which gave the country

[31] Unlike the Taiwanese firms, which set up operations to take advantage of quotas and trade agreements, the South African investors that supply South African retailers were driven by lower operating cost (especially labor), duty-free market access to South Africa and tax incentives through SACU.
[32] Most South African firms operating in Lesotho prior to 1990 either closed down or sold out to Taiwanese firms.
[33] Lesotho had kept diplomatic relations with Taiwan, which facilitated this transition. Other Taiwanese firms then followed in the 1990s and set up apparel manufacturing.

preferential access to the European market,[34] and the 2000 U.S. African Growth and Opportunity Act (AGOA) (Masin et al., 2010). The East Asian manufacturers took advantage of Lesotho as a "lesser developed country" that could sell apparel in the United States duty- and quota- free under AGOA. In the first phase of AGOA (2000–2004), they were permitted to freely procure inputs from anywhere in the world (Staritz, 2010).[35] Lesotho moved ahead of other AGOA beneficiaries, because it had first-mover advantage from an existing base of apparel exporters that reflected its historic links with South Africa and Taiwan, the MFA quota regime, and its close ties with Asian full package suppliers (Lall, 2003; Shakya, 2010).

The Government of Lesotho developed industrial zones and serviced manufacturing space for rent to foreign investors to increase competitiveness and reduce bureaucratic processes. Currently, there are six industrial zones in Lesotho housing about 60 factories (Shakya, 2010). By 2002, the sector's exports totaled over US$320 million and employment surpassed 50,000, which was the first time employment in manufacturing outnumbered government employment (Masin et al., 2010). Despite these gains, the phase out of MFA and other trade privileges resulted in a decline in apparel exports. Between 2004 and 2008, Lesotho's total exports declined by about 25% (Staritz, 2010). Nonetheless, Lesotho's clothing exports continue to account for the majority of its total exports (Staritz, 2010).

While Lesotho's apparel exporters benefitted from a strong connection with the leading full-package global apparel suppliers headquartered in Hong Kong, Lesotho's apparel manufacturing has not upgraded. The sector has been locked into low value added assembly processes as a result of the global — strategy of Taiwanese firms. These firms have highly organized supply networks that act as intermediaries between buyers from the EU, Japan, the United States, and local apparel manufacturers (Lall, 2003). Supply linkages have been mostly outside of Lesotho, with local sourcing at a low 5%–15%,[36] which limited spillover impacts (Lall, 2003; Morris et al., 2011).

The potential for Lesotho to upgrade into higher value-added activities is more likely to occur through relationships with South African firms. These firms have a deeper presence in Lesotho, and are more interested in investing in upgrading. However, while South African companies started relocating production to Lesotho to service South African retailers after 2004 in order to lower production costs

[34] Initially access conditions to the EU were that garments needed to be sewn in Lesotho (Salm et al., 2002). During the late 1980s the regulations changed and required that two manufacturing processes must take place in Lesotho before clothing qualifies for duty-free access (Salm et al., 2002). In the late 1980s. Lesotho successfully applied for an exemption, which was granted for a period of four years and was then renewed for four more years (Salm et al., 2002).

[35] This privilege was not open to more developed beneficiaries like South Africa or Mauritius (Staritz, 2010).

[36] There are only few firms in textile production and most textiles are sourced from China (MIGA, 2007). In 2005, the Taiwanese Nien-Hsing Textile, the world's largest producer of denim, opened Lesotho's only vertically integrated denim manufacturing mill–the Formosa Mill–which produces its own yarn and more than 7,000 tons of denim fabric annually (Bennet, 2006). Large brands and retailerssuch as The Gap, Levi Strauss, Calvin Klein, J.C. Penny, Jones Apparel, Timberland, and Walmart—source denim from Lesotho. The textile sector remains in its infancy and is almost entirely low technology with minimal skills transfer taking place (Masin et al., 2010).

(especially labor) and take advantage of regional trade agreements. There are relatively few South African firms currently operating in the country.

Workforce Development. Lesotho's export-oriented manufacturing FDI has created demand for skills, such as operators for industrial sewing, cutting and pressing machines (Masin et al., 2010). All factories have some training for these basic skills (Salm et al., 2002). Companies that offer additional in-house technical training programs and developed better human resources practices reported positive results in productivity and labor relations (Masin et al., 2010). Training programs are mostly informal, conducted by floor supervisors, and focus on basic production and standardized assembly activities.

The approach to workforce development differs according to firm ownership. In Taiwanese factories, most workers are taught to perform one task or operate one machine, as opposed to cross-training on multiple tasks. More complex skills such as machine maintenance, layout, and pattern making are not taught. Taiwanese firms make little effort to transfer more advanced skills, even within the assembly operations (Masin et al., 2010), and, to date, there has been no systematic effort to train local workers on more complex tasks. Skill transfer has been low, especially since shortage in skilled shop-floor, technical, and managerial labor are filled with expatriates mostly from China (Lall, 2003).

While expatriate managers usually have shop floor knowledge, they have little management experience and are unable to communicate with the Basthoto workers (Lall, 2003). Differences in language, culture, and work practices[37]—and a footloose attitude of some the Taiwanese firms—are barriers to investing in training (Lall, 2003). In the management offices, the common language is Chinese, and imported labor is not trained in adapting to the Lesotho culture. There is quite a negative attitude toward locals in this type of firm; problems are attributed to "lazy workers" and "their unproductive culture" (Morris et al., 2011). Only one company has developed an in-house formal training program for supervisor-level positions that includes topics such as organization, planning, industrial relations, and health and safety.

South African operations typically follow a different business model. These operations are focused on short production runs that require multitasking, different production set up, and higher worker productivity. These firms thus see skill-based constraints as a significant barrier to growth (Morris et al., 2011). South Africans fill most management positions in the South African firms located in Lesotho.

Firms identified the lack of readily available skills at all levels of personnel—from basic machinists, to technical, managerial and professional staff—as a central challenge to continued growth and upgrading. South African firms also noted deficiencies in the support sector (embroidery, printing,

[37] For example, the Lesotho Labor Code forbids piece-rate (as opposed to time-based) payments of workers, as does the organized labor movement. Piece rates are widely used in the export-oriented apparel industry in most developing countries including China.

etc.), lack of access to finance, transport, logistics and customs-related costs, and lead times related to the unavailability of local and regional yarns and fabrics among their critical challenges (Morris et al., 2011).

External training and development for the industry is limited. Several vocational training institutions provide generic management and general studies, [38] but they do not offer industry-specific courses that meet the needs of employers requiring firms to develop internal training programs (Shakya, 2010). Industry-specific programs were mostly funded by donors or multiagency initiatives. The Lesotho Garment Centre, funded by DFID, was the only training center in the country, and it was closed down in 2002 (Lall, 2003). DFID supported a second initiative between 2004 and 2009, ComMark Lesotho Textiles and Apparel Project, which provided both funding and technical assistance to improve productivity and efficiency; industrial relations; human resources; health and safety; and supervisory and management skills. In 2008, the World Bank funded the establishment of two skills centers that offer programs in industrial relations, supervisory skills, basic and advanced machinist training, mechanic training, productivity interventions, and quality assurance (LTEA, 2010). The ILO Better Work program works with the Lesotho Industry Employers Association, Lesotho Textile Exporters Association and five major international buyers: The Gap, Jones New York, Levi Strauss & Co., Primark, and Walmart. The goal is to strengthen the competitiveness of the industry by providing training to improve workers' productivity while remaining committed to protecting workers' rights (ILO & IFC, 2010a).

Table 3.9 provides an overview of the evolution of the industry in Lesotho and the workforce development initiatives that have been implemented in the sector.

[38] Educational Institutions in Lesotho include: Lesotho Polytechnic, the Institute of Development Management polytechnic, the Commercial Training Institute (CTI), the Basotho Enterprise Development Corporation (BEDCO), and St Luke's Mission (Lall, 2003; Shakya, 2010). CTI offers courses that lead to the award of a Certificate in Tailoring and Dressmaking (Shakya, 2010). Students who train at these institutes are often employed in the local craft industry and their own enterprises (Shakya, 2010).

Table 3.9. Lesotho: GVC Upgrading and Workforce Development Initiatives

Stage 1 1990s to Present C-M-T Production
Private Sector Workforce Initiatives
• Some apparel manufacturers began to initiate internal productivity improvement training programs. • Only one company developed a formal in-house training program for supervisor level positions (Lall, 2003). • Private sector companies such as Walmart and The Gap are leading ALAFA to combat HIV AIDS among workers.
Multi Sector Workforce Initiatives
• In 2008, the World Bank invested in two skills development centers that will include human resources management, industrial relations, supervisory skills, basic and advanced machinist training, mechanic training, productivity interventions, and quality assurance (LTEA, 2010). • ComMark Lesotho Textiles and Apparel Project (2004–2009) was supported by DFID and provided technical assistance to the Lesotho National Development Corporation (LNDC), established a training fund to improve factory productivity and human resource management and provided capacity building to Lesotho Textile Exporters Association (LTEA). The training fund assisted garment and textile manufacturers get up to 50% co-financing for training undertaken to improve their productivity and efficiency; industrial relations; human resources; health and safety; and supervisory and management skills. The program worked with employer associations; trade unions, relevant Government of Lesotho Ministries and agencies; utility companies; potential investors in Lesotho; and existing and potential buyers and retailers.(ComMark, 2010) • ALAFA is a broad PPP that includes DFID, USAID, Irish Aid, The Gap, Edun, Walmart, Nordstrom, Levi Strauss, ComMark, and others. The program provides education and prevention services, voluntary testing and counseling (VCT), and health management and treatment for HIV-positive workers. By the middle of 2010, ALAF reached 94% of the sector's workers with preventive services, and 83% of the workforce with care and treatment services.(ALAFA, 2007) • ILO Better Work Program works with Lesotho Industry Employers Association, Lesotho Textile Exporters Association and five major international buyers: The Gap, Jones New York, Levi Strauss & Co., Primark and Walmart to strengthen the competitiveness of the industry while remaining committed to protecting workers' rights (ILO & IFC, 2010a). • St. Luke's Mission in Maputsoe offers a three-year course including pattern construction, machine knitting, small business studies, leadership, management and industrial garment production (Shakya, 2010).

Source: Duke CGGC.

E. Nicaragua[39]

The Nicaraguan apparel industry exported US$$1 billion in 2008, accounting for 36.8% of the country's GDP (WTO, 2010). Nicaragua mainly participates in the CMT stage of the apparel value chain to leverage the country's competitive wage advantage (Portocarrero Lacayo, 2010), employing more than 51,300 people in 2010 (ILO & IFC, 2010a).[40] Production is concentrated in firms located within the Nicaraguan Free Zone System, accounting for 99.4% of the country's apparel production (Portocarrero Lacayo, 2010) and 72.6% of all employment generated by the system.[41] In 2009, 89% of Nicaraguan apparel exports were destined for the United States. The country is still considered a small regional supplier, but since 2004 it has steadily gained U.S. market share in certain segments, such as woven pants and cotton shirts (Gereffi & Bair, 2010). Apparel manufacturers in Nicaragua focus on trousers, mainly

[39] The Nicaragua case was developed by Penny Bamber. Information for this case study is primarily drawn from a series of interviews with leading apparel firms in the Nicaragua textile and apparel industry between September and December 2010 carried out by CGGC researchers Gary Gereffi, Jennifer Bair and Ingrid Muñoz.

[40] The industry reached a peak in employment in 2007, with 88,700 employees. However, pressures from the economic crisis forced layoffs and closures during 2008 and 2009.

[41] Apparel production outside of the free zone system draws on a large number of small- and medium-sized firms, which rely on high numbers of employees due to their limited use of technology.

denim jeans and twill pants, as well as t-shirts. The sector has not undergone significant upgrading and mainly offers CMT services.

Industrial Organization

The industry consists of a large proportion of foreign-owned firms, with very few locally owned companies. Among the foreign firms, Korean and U.S. ownership dominate, with the remainder coming from El Salvador, Honduras, Mexico, and Taiwan. The first wave of companies to set up in the country was principally from Korea and Taiwan, while the second wave that occurred in the 2000s was of U.S. origin. A significant proportion of these firms are part of larger global or regional networks; particularly in Central America, this structure allows global firms to provide full-package services for their clients by leveraging the interactions of multiple country operations. The three largest knit-based firms in the free trade zone sector collectively employ 16,300 workers (Gereffi & Bair, 2010). In 2010, these three firms represented almost one-third (29%) of total apparel employment in the country's free trade zones; clients include Walmart, Target, and Ralph Lauren. Woven apparel firms are more regionally focused, with operations in neighboring countries such as Guatemala, Honduras, and Mexico, and leading buyers include Levi Strauss, Cintas and Kohl's.

Workforce Development

One of Nicaragua's key competitive advantages in the apparel industry is its strong industrial relations system, providing the country with important advantages for buyers focused on ethical sourcing and a good basis for workforce development (Gereffi & Bair, 2010).[42] However, there is no deep-rooted culture in workforce development in Nicaragua and human capital is a major weakness in the country (Portocarrero Lacayo, 2010). Illiteracy is high; 30% of the adult population has no formal schooling (FIAS, 2005), and enrollment in secondary education reached just 68% in 2009 (UNESCO Institute for Statistics, 2010).

The apparel industry draws predominantly on a young labor force with basic education. Employers have no minimum educational requirements for the majority of their production staff, and only test applicants for basic reading, writing, and arithmetic skills. The average age of employees in apparel factories ranges between 20 and 28 years old. While in 2010, women represented slightly more than half of the apparel labor force (63%), employment is highly gender specific for different positions within the factories. Sewing machine operators and quality control are positions predominantly held by women, while laundry technicians, packers, mechanics and cutters are typically male-dominated jobs (Gereffi & Frederick, 2010). Formal training in the apparel sector has one of the lowest levels across all productive sectors in Nicaragua, with just 17% of companies providing some type of formal training: 14% of the

[42] This has been a marked shift from earlier stages in the Nicaraguan apparel industry during which labor relations were notably poor.

training was in-house, while just 3% engaged external trainers (FIAS, 2005). Large foreign firms of U.S. origin tend to be more willing to provide training than smaller local firms.

The ILO Better Work Program selected Nicaragua as the first Latin American country in which to implement its program aimed at improving labor conditions as well as the competitiveness of the sector by facilitating compliance with global buyer standards. Implementation of the program will begin in 2011 (ILO & IFC, 2010b). Several organizations including Nicaraguan Textile and Clothing Industry Association and the Nicaraguan Chamber of Private Free Trade Zones also have projects focused on improving labor conditions through social awareness.

Stage 1. Entering the Apparel Value Chain (CMT): Mid-1990s

Entry into the global apparel value chain in Nicaragua dates from the mid-1990s, when the country began to stabilize politically and reinstated its free trade zones. Many Asian firms were attracted to the country due to its cheap labor force, combined with its proximity to the United States and the availability of MFA quotas prior to their phase out in 2005 (Portocarrero Lacayo, 2010). Growth was relatively slow until the implementation of the CAFTA-DR agreement in 2006 (Gereffi & Bair, 2010).These trade agreements guaranteed preferential access to the U.S. market for a certain quantity of apparel sewn in Nicaragua from materials that do not meet CAFTA's rules of origin, giving the country an important competitive advantage over its regional neighbors. Since then, Nicaragua has gained substantial ground in specific segments such as woven cotton trousers, as the result of being the only CAFTA country to receive TPLs that temporarily exempt the country from complying with the CAFTA requirement that imported textiles must originate in the United States.

No established textile industry exists within Nicaragua,[43] although the country has benefited from preferential trade agreements that allow it to source fabric from inexpensive suppliers in Asia.[44] In 2009, 83% of Nicaragua's exports to the United States entered the country duty-free under a variety of special trade regimes. Over a third of exports (35%) entered under the regional rules of origin established by CAFTA, while 47% of exports were imported under the TPLs granted to Nicaragua for non-originating exports (Gereffi & Bair, 2010).Overall, CAFTA has restored the position of Central America and the Caribbean among the leading U.S. suppliers of apparel and this led to growth in shipments from Nicaragua (Gereffi & Bair, 2010). In 1995, U.S. apparel imports from Nicaragua were only 2% of the total imports from CAFTA-DR, while in 2009, this share increased to 15%.

Despite this increase, Nicaragua has had limited success in moving up the apparel value chain. Within the past five years, the volume of exports grew by 8.6%, yet the value of exports only increased by 4.5% (ProNicaragua, 2010). This period was characterized by an increase in the production of t-shirts and

[43] In January 2010, there were only three textile firms in the country, one of which, Cone Denim temporarily closed due to the crisis in 2009.
[44] In 2008, 78% of knitted and 61% of woven fabrics were supplied from Asia (UNComtrade, 2010).

knitwear, which are low value added activities. Prior to the economic crisis, the country had seen increases in the value of its exports in higher value woven trousers, but due to the economic slowdown in the United States, 2009 exports fell back to their 2006 levels.

Workforce Development. Workforce development initiatives have focused on maintaining an adequate pool of labor for these early stages of the value chain, with the training emphasis on assembly functions. Initial training on entry into the firm for new employees may last from two weeks to three months.[45] Training needs are first assessed through an ability test, which includes manual dexterity and basic reading, writing and arithmetic. For those who pass this test, there is training on general company policies with respect to industrial labor laws, the rights and obligations of workers, ISO certifications and global buyer standards, and the company's operating system (e.g., modular or line production systems). With the exception of mechanics, all technical training is conducted in-house. While this initial training was required to develop talent for the industry, many firms note that it is now easy to find job applicants with sufficient sewing experience, which minimizes the need to provide further training.

On the assembly line, productivity is incentivized with bonuses or higher pay grades until the employee is transferred onto the "piece rate."[46] During this training period, trainers provide daily and weekly monitoring. Training departments are focused on improving all productivity levels of the staff to reach 100% efficiency. In a number of plants, productivity rates are calculated using the General Sewing Data program.[47] Skilled sewers may eventually be promoted to the limited pool of staff with training in more than one job function or to line supervisor. These positions are more highly compensated.

The government's vocational training institution, el Instituto Nacional Tecnológico (INATEC), is supported by a "training tax" or compulsory contribution of 2% of salaries for all companies in the country, offers training programs for the apparel industry, but most companies prefer to train technical staff internally (FIAS, 2005). There is reportedly a disconnect between the kind of skills that are in demand, particularly of a technical nature, and the courses that are offered (Gereffi & Bair, 2010). Shortcomings with this institution may derive from its broader mandate of servicing all industries, rather than just apparel, as well as the absence of coordination measures between the training institution and the private sector. Firms thus principally use INATEC courses for general skills such as management, leadership, conflict resolution or language courses. Mechanics stand out as an exception to this training rule, and many companies take advantage of INATEC's programs to ramp up the skills of these workers.

[45] "New employees" includes all employees with no previous experience in the apparel industry.
[46] Piece-rate refers to a common labor practice in the industry by which workers are paid according to the number of pieces that they work on.
[47] GSD is a manufacturing methods database and analysis process that establishes International Standard Time for complete products (styles), or individual product components (features) and provides the ability to establish and quantify each step or operation in the manufacturing process in the apparel industry.

Training programs for mechanics last approximately one to two weeks. In some factories, mechanics also take on apprentices. Engineers working in the plants undergo more intensive training for up to one month.

The apparel sector has relied on experienced foreign management from within the region, particularly in Guatemala and Honduras, or from the home countries of the Asian and U.S. multinationals to establish and manage the Nicaraguan plants. This continues to be a prevalent practice in the industry, with just a few firms hiring Nicaraguan professionals to take on senior management positions. In addition, the few firms that offer full-package services from within Nicaragua, including in-country sourcing or purchasing of textiles, use foreign staff in Nicaragua to carry out this work. Where quality control is conducted within the factories in Nicaragua, the position draws on professional personnel who are guided and trained by external monitors from global buyers.

Although employers in the sector offer a wide range of benefits, including permanent labor status for all workers, access to subsidized foodstuffs, meals and transport to and from work, the industry continues to face a very high level of attrition, with turnover rates at some firms of over 100 % annually. One outcome of these high levels of turnover is that firms are able to recruit experienced personnel more easily. This has led to a general decline in employee training in the sector, with many firms providing just one week of training.

Table 3.10 provides an overview of the evolution of the industry and workforce development initiatives employed to drive its growth.

Table 3.10. Nicaragua: GVC Upgrading and Workforce Development Initiatives

Stage 1 Mid1990s–Present CMT Production
Private Sector Workforce Initiatives
• Formal training in the apparel sector is low. Only 17% of companies in this segment provided formal training to their employees, and of those, 14% conducted the training using in-house trainers (FIAS, 2005). • Companies include induction training for new employees, introducing employees not only to company policies but also to the rights and obligations of the workers and detailed outlines of the standards required to meet the company's varying certifications by global buyers and/or ISO. • Engineers and mechanics also receive additional training in house. The high costs of the machinery in the sector places great importance on the role of the team required to maintain and repair them. • Most companies run training programs internally. In-house training for sewing operators consists of a brief training period on machines before being moved on the line. Ongoing on the job training continues for up to three months, with training teams focused on ramping up the employee to 100% productivity. • All labor in the Free Trade Zone apparel operations is hired as permanent staff, benefiting retention of knowledge within the company. However, the indemnization regulations within the country allow workers who resign voluntarily to demand indemnization payments, leading to attrition rates of over 100% in some firms. • Quality control personnel are briefed and guided by external monitors from global buyers.
Public Sector Workforce Initiatives
• INATEC, the government vocational training institution, is engaged for training of mechanics and engineers, as well as for general skill training, such as leadership development, conflict management, and language skills. • The education system in Nicaragua is weak (FIAS, 2005). However, the industry only requests employees be able to read, write, and do basic arithmetic, and, at the most, requires 6 years of education.
Multisector Workforce Initiatives
• ILO Better Work Program selected Nicaragua as the first Latin American country to implement its program aimed at improving labor conditions as well as the competitiveness of the sector by facilitating compliance with global buyer standards. Implementation of the program will begin in 2011 (ILO & IFC, 2010b). • A tripartite roundtable comprised of the different union organizations in the free trade zones, the Nicaraguan Textile and Clothing Industry Association, the Nicaraguan Chamber of Private Free Trade Zones, and the State institutions related to free trade zones was established along with a CSR Committee providing important instruments for raising the social awareness of the companies and strengthening further workforce projects within the Free Trade Zone Regimen in the future.

Source: Duke CGGC.

VII. Analysis and Discussion of the Country Cases

The global value chain perspective provides a useful framework to understand how countries upgrade along the value chain, the kinds of institutional involvement needed to facilitate upgrading, and the most relevant complementary workforce development practices. We summarize below our main findings for the global apparel industry.

A. Economic Upgrading

The most important conditions for successful entry are favorable trade agreements, abundant cheap labor, and proximity to end markets. Entry into the apparel value chain is often facilitated by foreign direct investment in establishing assembly operations, although 4 of the 5 five countries studied entered the industry principally because of favorable trade agreements. Bangladesh and Sri Lanka benefited significantly from preferential trade agreements with the EU and the United States, which

facilitated their early entry and growth, while more recently Lesotho and Nicaragua benefited from the African Growth and Opportunity Act (AGOA) and CAFTA-DR TPL agreements, respectively.

However, to upgrade into more advanced stages of the chain, other factors become relevant. These include the following:

- Upgrading from assembly (CMT) to full-package (OEM) apparel production is significantly facilitated by the presence of a domestic or regional textile industry. For instance, Bangladesh has been able to upgrade from assembly to full-package supply in large part because of its new textile industry. In Turkey, the domestic textile industry was already strong when the apparel industry was established, allowing the country to leapfrog into full-package supply. Sri Lanka leveraged regional textile opportunities and developed backward linkages with the textile industries in India and later Bangladesh to facilitate its upgrading.
- The national origin of lead firms and their business models affect a country's upgrading trajectory. The lead firms in Lesotho and Nicaragua are foreign-owned and part of large global supply networks, mostly headquartered in Asia. These firms have followed business models in which the relatively high-value upstream and downstream activities are carried out in their Asian headquarters, with minimal linkages or technology spillovers to local suppliers. As a result, neither country has undergone significant upgrading. In Bangladesh, Sri Lanka, and Turkey, locally owned firms play prominent roles in the industry, with direct linkages to global clients that have invested in upgrading operations locally.
- Upgrading into design and branding (ODM and OBM) requires a strong commitment to industry growth by both the public and private sectors**.** Turkey is the only country in our sample to have major inroads in ODM and OBM, and it has done so with collaboration between strong industry associations and government organizations to strengthen Turkey's competitiveness in fashion and design. In addition, the full-package capabilities of Turkey's large integrated firms facilitate close relationships with global retailers, who are willing to facilitate Turkey's upgrading into design and brand services. In Sri Lanka, the government collaborated with the private sector to establish a 5-year plan to upgrade the industry, with an emphasis on leverage their close ties with global buyers to develop design and brand capabilities. Sri Lankan firms have set up offices in key cities to work with their buyers' product development and design teams.

B. Workforce Development

Despite its potential for increasing productivity and upgrading, workforce development initiatives alone play a secondary role in improving competitiveness. The case studies provide several key lessons for workforce development in the sector. First, in the assembly stages of the value chain, all of the countries studied maintain a continued heavy emphasis on on-the-job training carried out by supervisors to address the skills gaps in the apparel labor force, rather than the use of formal training. This preferred method of training is less costly but also stems from the generally limited number of vocational and training institutions (public or private) dedicated to the apparel industry and the mismatch between skills provided by these institutions and the private sector needs.

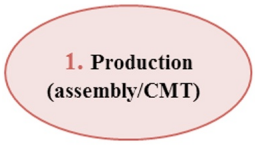
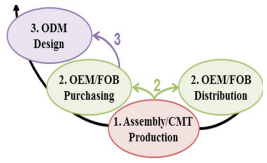
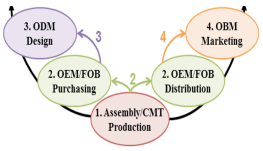
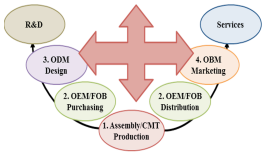
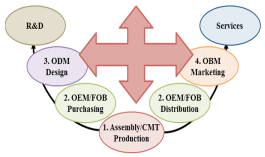
Second, there is often a shortage of skilled labor, in general, and qualified supervisors and management, in particular, to support industry upgrading in developing countries. Expatriates generally meet this skills gap or where possible.[48] When existing skills are not present in the local labor market, certain upstream or downstream activities are performed abroad in firm headquarters. Engaging expatriates may solve immediate technical problems. However, in many cases, as shown in Nicaragua and Lesotho, language barriers and cultural incompatibilities limit knowledge transfer. Specific management and supervisor development programs for local employees, such as the Bangladesh PROGRESS program to Promote Female Operators to Line Supervisors, would ease this challenge, while improving the efficiency and impact of on the job training by supervisors.

Third, despite the shortcomings noted above, important new initiatives are emerging from more mature suppliers to professionalize all levels of the apparel labor force, including managerial training to deal with growing pressures for lean manufacturing and compliance with corporate codes of conduct. In particular, JAAF's *Competence and Beyond* Manual in Sri Lanka should be highlighted. This manual was developed in collaboration with the firms in the private sector to fully understand the requirements of each and every job profile in the industry. The manual details the competencies new workers must have and will be used to help educational facilities to align their curriculum with the needs of the industry. The Turkish Professional Qualifications Authority, established in 2009 to work with the private sector, NGOs and other government institutions to establish professional standards, job profiles, qualifications, and certifications (Mesleki Yeterliki Kurumu Resmi, 2010), is another good example. These initiatives are important precursors to establishing comprehensive workforce development plans for upgrading.

Table 3.11 shows the different upgrading paths and related workforce development initiatives that can be identified in the cases.

[48] Sri Lanka is the exception to this rule in terms of supervisors, and many firms in India and Bangladesh employ Sri Lankan supervisors. This is likely due to Sri Lanka's well established basic education system.

Table 3.11. Workforce Development and Upgrading in the Apparel Global Value Chain

	Diagram	Workforce Development Implications	
Assembly (Entry in the value chain)		Reliance on in-house training provided by supervisors to ramp up new machine operators. Technical staff, such as mechanics and engineers, may benefit from additional external training programs.	
		Skills Preparation On-the-job training in operation of machines, cutting and pressing equipment.	**Institutions** Private sector/ Industry associations Donor agencies
OEM/ Full Package (Functional Upgrading)		Firms learn buyer preferences, build relationships with textile suppliers and retail outlets. Recruit experienced employees from the textile industry. New staff hired for financial and logistics functions.	
		Skills Preparation On the job training in textiles, sourcing, supply chain coordination, and logistics and cost optimization. Secondary and tertiary education	**Institutions** Private sector Educational institution
Product Design (ODM) (Functional Upgrading)		In-house designers worked in tandem with designers from the buyers to gain a deeper understanding of preferences. Design functions require innovative skills related to new product development and knowledge of global standards, process and information technology upgrading.	
		Skills Preparation Technical training in design. Tertiary education	**Institutions** Private sector/ industry association Educational institutions Government
Product Brand (OBM) (Functional Upgrading)		The supplier develops know-how related to brand promotion from lead buyers. Firms hire employees with skills related to marketing and consumer research. Developed country consultants can provide important training for the firm.	
		Skills Preparation Soft skills and managerial skills training Tertiary education	**Institutions** Private sector (in-house and external trainers) Educational institutions (universities)
Product Upgrading		Suppliers begin to produce increasingly complex apparel products. These products require numerous details and are typically more complex to produce and require specific inputs.	
		Skills Preparation On the job training Tertiary education	**Institutions** Private sector Educational institutions (technical schools, universities)
Process Upgrading		Improves efficiency and is usually part of a low-cost strategy. Performance improvements from process upgrading: lowers operating costs in the long-run; enhances quality and delivery performance; shortens time to market.	
		Skills Preparation On-the-job training Training for use of new equipment	**Institutions** Private sector (suppliers and lead firms) Government incentives for investment in training Equipment providers

Source: Duke CGGC.

C. Institutions

In those segments of the value chain focused on production, the private sector has played the leading role in workforce development and most firms offer internal training of entry level employees. While there have been a number of attempts by both the public sector and donor agencies to engage TVET training schools in the industry, such as in Bangladesh which doubled its available trained workforce for the industry through the expansion of TVET institution after the end of quotas in 2005, there are few examples of significant success. Indeed, in several cases, such as the 2007 DFID-funded program in Bangladesh and DFID's training institution in Lesotho, programs were closed after a short period and graduates of the training program did not necessarily enter the sector's workforce. Private training institutions established by industry associations or by private firms appear to have had greater success in this stage of the value chain. For example, in Sri Lanka, both Brandix and MAS spun off their training divisions into separate training institutions in 2005 and 2007, respectively. By 2010, Brandix College of Clothing Technology (BCCT) offered approximately 100 different programs, from the most basic levels though high fashion design.

In the two countries where the industry has upgraded to higher stages of the apparel value chain (Turkey and Sri Lanka), we observe superior degrees of stakeholder coordination, along with some public-private partnerships to support workforce development. These alliances are usually established to cover skill shortages in the country and to improve the quality of those skills. For instance, in Sri Lanka, JAAF, a collaboration between the private sector and the government, engaged with several different educational institutions to improve the curriculum at the state Sri Lankan Clothing Industry Training Institute and the Textile Training & Service Center. In Turkey, the Istanbul Fashion Academy was established in collaboration with the EU and the Istanbul industry association, IKTIB, as part of the Fashion and Textile Cluster in 2005. The academy trains students on the use of the latest technology, fashion, design, fashion product development, as well as fashion photography, media, management, and marketing.

Successful workforce development for the ODM and OBM stages in the value chain has leveraged know-how in the developed world by engaging foreign universities in successful apparel countries to help design curriculum for local programs, as well as hiring foreign consultants to help develop talent in-house. Bangladesh, Sri Lanka, and Turkey have all established relationships with universities in developed countries. The London College of Fashion has relationships with institutions in all three countries, while others include institutes and universities in both textiles and fashion in France, Germany, Italy, and the United States. Fostering collaboration with successful training institutions in the

developed world can speed firm level learning for upgrading, rather than the more timely process of learning through experience.

International organizations have also been active in efforts to link economic and social upgrading in the apparel sector. The ILO has partnered with the World Bank (through its IFC branch) to establish the Better Work program to raise labor standards in global supply chains. In Nicaragua and Lesotho, the Better Work program has focused primarily on improving working conditions through better social dialogue, but thus far it has not been able to link participation by developing countries in Better Work to more favorable contracts or other long-term benefits with global buyers in the apparel value chain.

D. New Global-Local Interactions

Broad trends are transforming the relationship between economic upgrading and workforce development in the global apparel industry. Following the phase out of the MFA quota system after 2005, there has been a striking concentration in the market share of the leading apparel exporting countries and an emphasis on fewer, larger, more capable and strategically located suppliers (Gereffi & Frederick, 2010). In 2008, for example, the top two apparel exporters, China and the EU, accounted for 64.3% of global apparel exports, and the top five developing countries (China plus Bangladesh, India. Turkey, and Vietnam) had 45.5% of the apparel total, whereas in 2000, China and the EU-27 represented 46.6% and the top five developing economies (China, Hong Kong, India, Mexico, and Turkey) 33.9% of apparel exports. This consolidation increases the importance of linking workforce development initiatives to economic upgrading in the apparel value chain, since those countries that cannot meet the more demanding requirements of OEM, ODM, and OBM production risk being marginalized in the chain.

The rapidly increasing labor costs in China, the dominant producer and exporter in the global apparel value chain, as well as a slump in demand by the advanced industrial economies, appears to be leading to a regionalization in apparel value chains, with large emerging economies like China, India, and South Africa becoming significant new markets for nearby developing country producers (Carlotti et al., 2011; Frederick & Gereffi, 2011; Morris et al., 2011). This provides new opportunities for low-income economies like Lesotho and Bangladesh to compete against dominant exporters like China and India, but they can only do so if they can meet the more stringent upgrading and workforce requirements of post-MFA supply chains, which in cases like Sri Lanka and Turkey, has evolved from active public-private collaboration around a long-term upgrading vision.

In recent years, global buyers and their suppliers have expanded their interactions beyond simple contractual relationships, with a focus on facilitating training in two key areas: (1) quality control, and (2) improving working conditions. In Turkey, global brands such as Liz Claiborne, Hugo Boss, and Marks

and Spencer (M&S), train, certify, and audit Turkish suppliers on quality control, information systems, and working conditions (Tokatli, 2007). Turkish firms adopted ISO standards, as well as comply with international social and environmental standards regulated by the European Union (Tan, 2001). In Bangladesh, the parent company of Zara (the Spanish multinational, Inditex) even provided training to union representatives in Bangladesh to strengthen their collective bargaining skills. In the area of the improved working conditions, attention has centered on the implementation of voluntary corporate codes of conduct that highlight compliance with national legislation and international norms in terms of working hours, overtime pay, child labor, freedom of association, and other aspects of work. While the most prominent global brands tend to have moved the farthest in publicizing these codes of conduct, their effectiveness in linking economic and social upgrading remains limited (Mayer & Gereffi, 2010).

The impact of lead firms on country upgrading through skill improvement and social compliance is affected by the length and capabilities inherent in the supply chain. Our research suggests that global lead firms influence functional upgrading in countries where large integrated suppliers are based and where the domestic pressures for economic upgrading are strong, but they do not promote upgrading in those countries where the factories engage only in assembly (CMT) activities. In Sri Lanka and Turkey, where there were direct linkages between the buyers and suppliers, pressure from global buyers for further services in design and niche product manufacturing led Sri-Lankan and Turkish apparel firms to hire designers and specialists and develop training programs specifically to provide employees with the new skills required. Pressure from global buyers also led local firms to establish training programs to increase productivity in Bangladesh, where linkages between buyers and their suppliers are strong. However, in Nicaragua and Lesotho pressure from global buyers on their suppliers to provide full-package services did not translate to increased skill acquisition in these countries because they currently are limited to assembly production.

VIII. Conclusion

The apparel sector is one of the most globalized industries of our time. It employs millions of workers around the world, especially in low-income countries. Developing countries have been able to enter in the value chain due to several important characteristics, such as access to cheap labor, favorable trade agreements and proximity to end markets. While the lead firms that govern this value chain continue to impose rigorous standards on their suppliers, workforce development initiatives receive limited attention.

Workers in the production stage are often trained by supervisors who do not have the capabilities to perform this task correctly; vocational training institutions offer courses that are not well aligned with the needs of the private sector; and many companies find it more efficient to engage expatriates rather than develop local talent. Nonetheless, influence from global buyers to improve working conditions, and initiatives that are emerging in more mature suppliers to professionalize the apparel workforce, indicate that the apparel sectors in developing countries are moving closer to establishing more effective and meaningful workforce development practices.

Appendix 3.A.: Global Employment and Labor Costs in the Apparel Sector

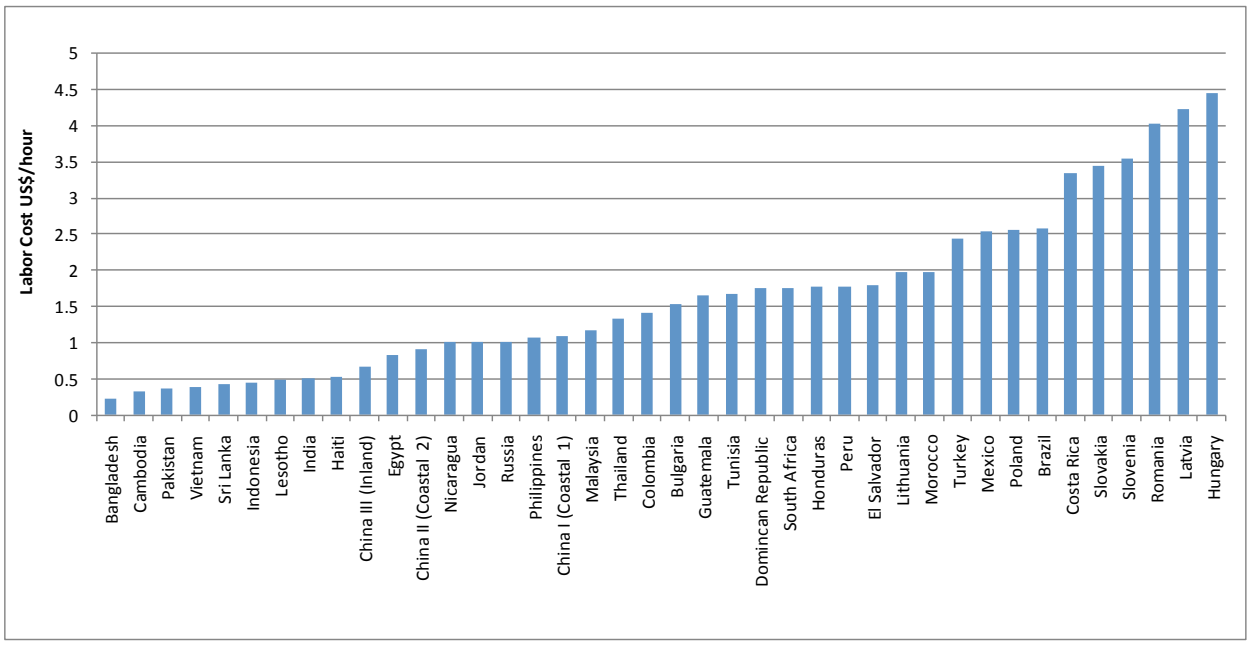
Table 3.A.1. Apparel Employment in Selected Countries

	Employment	Share of Total Manufacturing Employment (%)	Year
Lesotho	40,364	N/A	2005
Mauritius	76,963	66	2001
Nicaragua	80,500	28	2006
Madagascar	87,000	45	2001
Guatemala	104,464	23	2005
Morocco	176,894	18	2002
Cambodia	250,000	38	2005
Sri Lanka	270,000	20	2008
Romania	403,400	25	2002
Mexico	460,000	12	2005
Turkey	500,000	14	2009
India	463,319	6	2001
Pakistan	2,300,000	43	2001
Bangladesh	2,800,000	na	2008
China	19,000,000	19	2004

Notes: Data from China, Pakistan and Madagascar are for clothing and textile.

Sources: Bennet, 2008, BGMEA, 2008, ILO, 2005.

Figure 3.A.1. Apparel Manufacturing Labor Costs, 2008



Source: Jassin- O'Rourke Group, LLC.

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Duke
CENTER on GLOBALIZATION, GOVERNANCE & COMPETITIVENESS

CHAPTER 4

The Offshore Services Global Value Chain

ECONOMIC UPGRADING AND WORKFORCE DEVELOPMENT



Karina Fernandez-Stark
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Acronyms

BPO	Business Process Outsourcing
BPAP	Business Process Association – Philippines
CCC	Call Center Commission
CFA	Chartered Financial Analyst
CGGC	Center on Globalization, Governance & Competitiveness – Duke University
CMMI	Capability Maturity Model Integration
CORFO	Chilean Agency for Economic Development
CRM	Customer Relationship Management
DUKE CGGC	Duke University, Center on Globalization, Governance and Competitiveness
ERM	Enterprise Resource Management
eSCM	eSourcing Capability Model
ESL	English as a Second Language
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GSD	Global Service Delivery
GVC	Global Value Chain
HR	Human Resources
HRD	Human Resources Division- Government of India
HRM	Human Resource Management
ICT	Information and Communication Technologies
INSPIRE	Innovation in Science Pursuit for Inspired Research
IT	Information and Technology
ITO	Information Technology Outsourcing
KPO	Knowledge Process Outsourcing
LPO	Legal Process Outsourcing
MBA	Master's in Business Administration
MNCs	Multinational Corporations
NASSCOM	The National Association of Software and Services Companies – India
NGO	Nongovernmental Organization
OECD	Organisation for Economic Co-operation and Development
R&D	Research and Development
SENCE	Servicio Nacional de Capacitación y Empleo
SLA	Service Level Agreement
TCS	Tata Consultancy Services
TESDA	Technical Education and Skills Development Authority – Philippines
UK	United Kingdom
U.S.	United States
Y2K	Year 2000 Problem

I. Introduction

This report uses the global value chain (GVC) perspective to examine the role of workforce development initiatives in a number of developing countries that are participants in the rapidly expanding offshore services industry. The industry includes a wide array of skill-intensive activities that are now performed in developing countries, which were once considered strictly the domain of the industrialized world. They include information technology outsourcing (ITO), business process outsourcing (BPO), and knowledge process outsourcing (KPO), and other advanced activities such as research and development (R&D).

Offshore services are a potential vehicle for low- and middle-income countries to participate in the global knowledge economy. The industry offers attractive compensation and career development opportunities for graduates and professionals, incorporating previously marginalized groups—including rural women and youth—into the formal labor pool, creating employment in peripheral areas and second-tier cities, and reducing brain drain and promoting re-absorption of returning émigrés. Beyond employment, participation in the industry is seen as creating demand for education, stimulating creation of business and consumer services in the local market and stimulating domestic entrepreneurship (ECLAC, 2008).

By 2008, the offshore services industry had created an estimated 4.1 million direct service jobs in the developing world (McKinsey, 2008). Developing countries—including Argentina, Barbados, Colombia, Costa Rica, Jamaica, Kenya, Mozambique, Nigeria, South Africa, Tunisia, and Uruguay, among others—are actively seeking opportunities to enter and upgrade in the offshore services market (ECLAC, 2008; Radwan & Strychacz, 2010). Numerous developing country governments are offering significant incentives to attract international companies to use their countries as export platforms for services (Gereffi et al., 2009).

Workforce skills are essential elements to participate in offshore services. Strategic investments in workforce development by the public and private sectors have facilitated both market entry and upgrading to higher value segments of the industry. This report illustrates how national and subnational workforce development institutions and actors in developing countries can respond to globalization, work effectively with global "lead firms," understand new skills requirements that globalization places on their workforces, and establish workable division of responsibilities in effective public-private partnerships (PPPs).

This report is divided into the following sections. First, we discuss the global evolution of the industry and introduce the GVC for offshore services. Second, we identify potential entry points and upgrading trajectories for global services and discuss how they can be supported through workforce

development initiatives. Third, we present case studies of three developing countries—Chile, India, and the Philippines—that have succeeded in the industry and analyze the workforce development strategies they have pursued, providing examples of the long-term possibilities for developing nations. Fourth, we analyze the role of three small low-income countries—the Dominican Republic, El Salvador, and Guatemala— that have also managed to achieve significant growth rates in the industry during the past decade. These countries highlight that certain gains from the globalization of the service industry may be captured by nations with otherwise limited economic development if their workforces can meet global market requirements.

II. Global Organization of the Industry

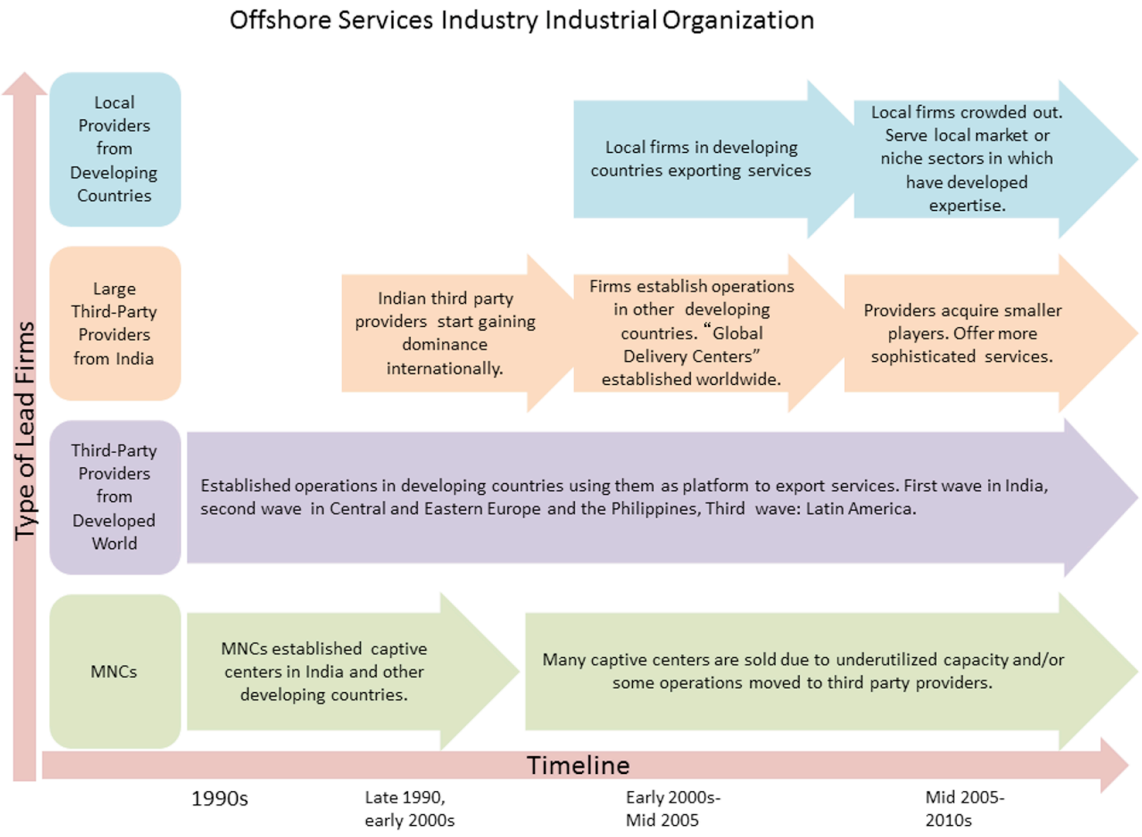
Over the past decade, the offshore services industry has experienced tremendous growth, emerging as a dynamic global sector and as a key employment generator for a number of developing nations. Structural changes in the global economy precipitated by the information and communication technology (ICT) revolution have transformed the way companies do business by allowing for the separation of production and consumption of services, and they have allowed emerging nations for the first time to contribute significantly to the world's services industry. In addition to the tremendous potential for direct employment, it is estimated that an additional four indirect jobs are created for every offshore services job that is created (ECLAC, 2008; NASSCOM, 2009).

The patterns of global industry development have been shaped by the business decisions of the industry's lead firms—multinational corporations (MNCs), third-party service firms from the developed world, and third-party service firms from India—which have evolved significantly since the early 1990s.[1] The decisions of these firms have been based on the need to improve efficiency levels (labor cost and supply), enter new markets, and gain access to "strategic assets" abroad (Lopez et al., 2008). Quality of service provision is not yet governed by global standards, although service level agreements (SLA) within business contracts between these lead firms and their clients are becoming increasing codified and standardized, including a range of performance metrics such as Average Speed to Answer and Turn Around Time.[2] ***Figure* 4.1** illustrates the evolution of lead firm roles and activities in this period.

[1] The role of service providers from other developing countries has differed across regions and segments of the market, and their role in the future is uncertain.

[2] Typical SLAs include services provided, standards of service, delivery timetable, responsibilities of supplier and customer, provisions for legal and regulatory compliance, mechanisms for monitoring and reporting of services, payment terms, how disputes will be resolved, confidentiality and non-disclosure provisions, and termination conditions. These contracts are negotiated on an individual basis between firms and specific terms of the contracts may vary substantially.

Figure 4.1. Industrial Organization in the Offshore Services Industry



Source: Duke CGGC.

In the early 1990s, **MNCs,** such as General Electric, Unilever, and Citibank, empowered by new information technology (IT) and communication technologies, began to relocate many of their routine business activities to lower-cost locations. They established the first "captive centers" through their subsidiaries in developing countries, which allowed them to reduce costs of back-office finance and accounting services, such as payroll and document management. In the late 1990s, many of these operations were spun off or sold to third-party providers by MNCs to further reduce costs and focus on core business functions.

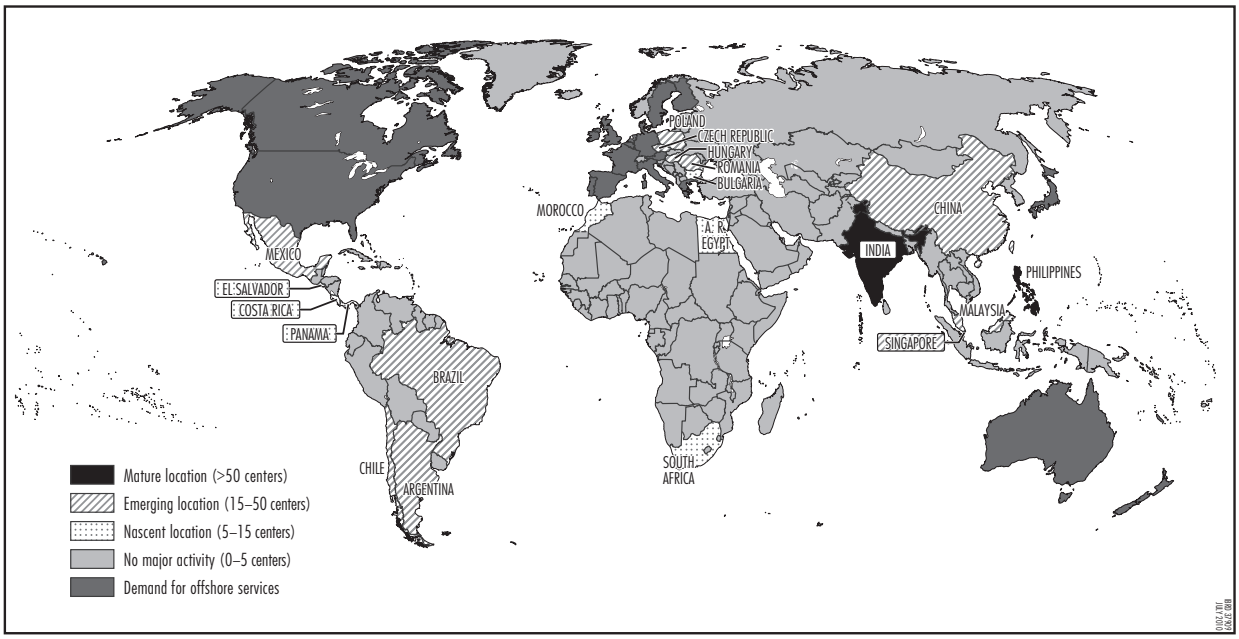
For the third-party providers who bought or took on the functions of captive centers from their MNC clients, this process simultaneously represented an enormous business development and knowledge transfer opportunity. Beginning in the mid-1990s, these **third-party providers from developed countries**—including IBM, Accenture, EDS (now HP enterprises), and Capgemini—began operating in developing countries, using these as platforms for lower cost service exports. In addition, these firms established new service platforms—first in India, then in Central and Eastern Europe, and later in Latin America.

Also in the late 1990s, **Indian third-party providers**—including Tata Consultancy Services (TCS), Infosys and Wipro—as well as entrepreneurial IT companies, began a phase of rapid growth, offering IT services related to Y2K[3] and ecommerce during the technology boom, particularly to the United States, where many Indian entrepreneurs had good business connections (Arora & Athreye, 2002). During the first half of the 2000s, these firms established sophisticated Global Service Delivery (GSD) systems in which they maintain a headquarters in India, delivery centers in developing countries, and customer support offices near their customers in developed countries. For example, in Latin America during the 2000s, TCS opened operations in Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay; Wipro in Brazil; and Infosys in Mexico (Gereffi et al., 2009). This innovative service delivery model has been slowly adopted by developed country third-party providers, such as IBM and Accenture.

A number of **third-party providers from other developing countries** began to export IT services in the early 2000s, targeting the Latin American regional markets in particular. In general, these organizations have not had the competency, scale, or global market presence to compete with established Indian and developed-market providers. A few large and sophisticated providers from Mexico (Softtek, Neoris), Brazil (CPM Braxis, Politec), and Chile (Sonda) have been able to export to regional markets and are beginning to export globally (Gereffi et al., 2009). However, most of the smaller indigenous companies have been driven to providing outsourcing services to local markets and a few have developed niche market strategies to serve vertical (rather than general business services) markets (e.g., IT services for regional retailers). ***Figure 4.2*** illustrates the geographic extent of the offshore services industry as of 2008.

[3] Y2K, the Year 2000 problem was a problem for both digital (computer-related) and nondigital documentation and data storage situations at the end of the 20th century, which resulted from the practice of abbreviating a four-digit year to two digits.

Figure 4.2. The Global Supply and Demand for Offshore Services in 2008



Source: Duke CGGC based on data from Everest and Datamonitor.

III. The Offshore Services Global Value Chain

The offshore services industry refers to the trade of services conducted in one country and consumed in another and encompasses firms' decisions to "perform functions or activities anywhere in the world" (McKinsey Global Institute, 2005, p. 454). The industry is composed of general business services that can be provided across all industries, as well as services that are industry specific.

General business services support generic business functions and include three main segments:

- **ITO** is the basic building block for the offshore services value chain and is centered around the production and use of software. It encompasses services such as network management, applications development, IT consulting, and software R&D. ITO services span the low-, mid- and high-value segments of the chain.
- **BPO** is a highly diverse category that contains activities related to the management of enterprise resources (ERM), human resources (HRM), and customer relationships (CRM). Specific BPO services include call centers, payroll, finance, and accounting; human resources (HR) activities are present in the low- and mid-value segments,
- **KPO** refers to specialized activities that often require professional licensing (such as in the medical, legal, and accounting fields). KPO services include market intelligence, business analytics, and legal services, which are the high value-added general segment of the chain.

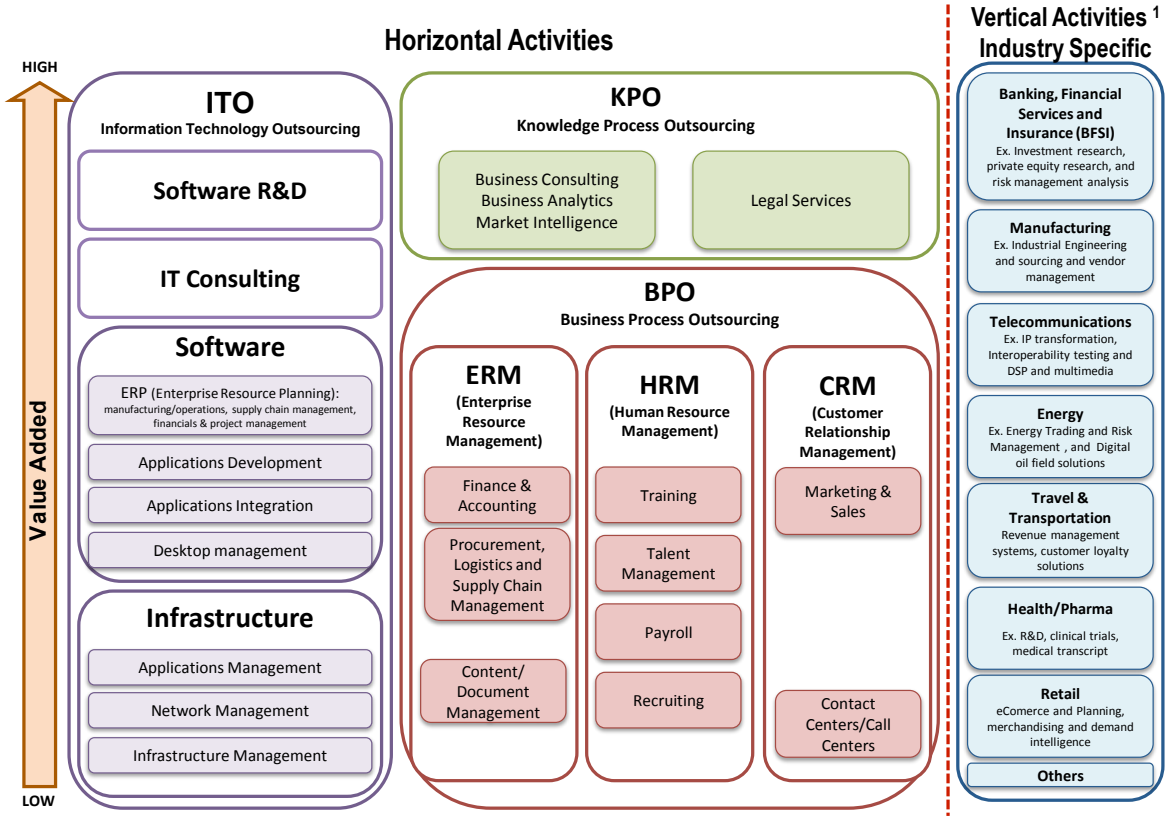
Industry-specific services include offshoring of activities that are not related to general business functions and that require specific industry knowledge. This might include pharmaceutical R&D, industrial engineering, and medical transcription, among others. These services may have limited applicability in other industries (Gereffi & Fernandez-Stark, 2010).

Figure 4.3 illustrates the industry's value chain, and highlights the main categories of activities in each segment (Gereffi & Fernandez-Stark, 2010), according to the level of value added.[4] The first categorization in the diagram refers to the three broad types of general business offshore services: (1) ITO, (2) BPO, and KPO. The second categorization refers to those industry-specific services. Within general business services, ITO contains a full spectrum of low-, middle- and high-value activities of the offshore services chain; BPO activities are in the low and middle segments, while KPO activities are in the highest-value segment of the chain.[5] Industry-specific services range from low to high value-added activities and may include (but are not limited to) ITO, BPO, and KPO activities.

[4] This classification was developed based on a series of interviews with leading firms in the industry in India and in Chile carried out between 2007 and 2009, compiling comprehensive employee, service, and client information, and complemented by secondary sources, including industry reports and 10 country case studies.

[5] This industry has continued to grow and evolve rapidly. While the global value chain presented in this article incorporates all activities conducted within this industry to date, each of the individual segments (ITO, BPO and KPO) can be considered as a separate value chain.

Figure 4.3. The Offshore Services Global Value Chain



Notes: [1] Vertical Activities, Industry Specific: Each industry has its own value chain. Within each of these chains, there are associated services that can be offshored. This diagram captures the industries with the highest demand for offshore services. This graphical depiction of vertical activities does not imply value levels. Each industry may include ITO, BPO, and advanced activities.

Source: Duke CGGC.

This diagram differs significantly from the representations of the value chains of manufacturing activities in which value added is measured through the analysis of inputs and outputs at each stage, and the output of one stage generally becomes an input of the next. In product-based industries, value is measured by the price of the inputs and outputs at each stage of a product's assembly. In contrast, in the offshore services industry, certain segments (ITO, BPO, and vertical services) contain high-, medium-, and low-value activities, and measuring value is complicated by the lack of reliable company-level data and trade statistics for services (Sturgeon & Gereffi, 2009).

To partially address this problem, the value of services in the offshore services value chain can be related to skill levels and work experience, that is to say, the human capital inputs of offshore services. Human capital has been found to be a key determinant of value creation, competitiveness, and success in service exports from developing countries (Chadee et al., 2011; Graf & Mudambi, 2005; Nyahoho, 2010;

Saez & Grover Goswami, 2010).[6] The visual representation of the offshore services value chain presented here is based on the available proxy for value added: wages paid to employees for different activities within industry segments. These relative wages, in turn, reflect required employee education and experience levels (Gereffi & Fernandez-Stark, 2010) and provide the best indication of "low" and "high" value-added activities. As a result, low-wage activities, requiring less education and experience, appear lower on the value chain map, while higher-wage activities, requiring employees with more formal education and experience, appear in the upper section.

Table 4.1 shows how both competitive salary and revenue data for different segments of the offshore services value chain in a middle-income country increase from segment to segment. As can be seen, employees in activities located in the lower part of the value chain have less preparation, particularly with respect to specialized skills, and earn lower wages, while the employees in the upper section of the value chain have more specialized skills and more years of experience and therefore command higher wages.

Table 4.1. Employment, Revenue, and Salary Information—Selected Segments of the Offshore Services Industry in a Middle-Income Country, 2008

Segment	Activities	Most populous position within segment	Average education level for employees	Average revenue per employee[a] (US$)	Median salary per employee[a]
BPO	Call Centers	Call center agents & technicians	High School / Bachelors degree	$19,720	$17,280
ITO	IT Infrastructure	Computer technician	High School/technical institute	$20,704	$16,932
	Software Development	Programmers	Bachelors / Masters Degree	$36,788	$28,065
	IT Consulting	Systems analysts	Bachelors / Masters Degree	$55,956	$45,455
KPO	Business and Financial Services	Financial analyst	Bachelors Degree in Business Administration	$127,081	$47,150
Vertical Activities	Engineering Services	Engineer	Bachelors Degree	$103,844	$53,514

Note: [a] This information is drawn from a confidential study published by Mercer 2008 for a certain country in Latin America.

Sources: Fernandez-Stark et al., 2010b; IDC Latin America, 2009; Meller & Brunner, 2009; Mercer, 2008; Wadhwa et al., 2008.

[6] Saez & Goswami (2010) find positive and significant correlation between human capital and service exports after controlling for institutional variables and electronic infrastructure. In addition, research by Nyahoho (2010) on the importance of factor intensity as a determinant of trade also finds that human capital is clearly related to exports of information services, while Shingal (2010) finds that human capital is one of three key variables that have the biggest impact on bilateral service trade. Chadee et al., (2011) found that human capital is considered to be the most critical source of competitiveness by management of offshore service providers.

IV. Economic Upgrading in the Offshore Services Global Value Chain

Developing countries have upgraded their participation in the offshore services industry by performing higher value-added activities related to ITO, BPO, KPO, and industry-specific services. This has occurred as clients in the developed world have become increasingly comfortable with outsourcing more sophisticated "core" business functions that were previously carried out in the developed world to offshore providers. In the process, a variety of third-party providers operating in the developing world have acquired additional capabilities to serve these clients.

In general, upgrading refers to "a process of improving the ability of a firm or an economy to move to a more profitable and/or technologically sophisticated and skill-intensive economic niche" (Gereffi, 1999, p. 51). Upgrading occurs when multiple firms or key lead firms operating within a country begin to provide higher value added products or services. Firms may upgrade by improving production *processes*, producing more valuable *products,* acquiring new *functions,* or by entering new value chains through *intersectoral upgrading* (Humphrey & Schmitz, 2002).

Upgrading Trajectories. Five principal upgrading trajectories for the offshore services industry can be identified: (1) entering into the value chain; (2) upgrading within the BPO segment; (3) offering full-package services; (4) expanding IT firms into KPO services; and (5) specialization of firms in vertical industries.[7] These five upgrading trajectories are presented in ***Table 4.2***. In each segment (ITO, BPO, and KPO), process, product, and functional upgrading may occur, and multiple upgrading (shifts) processes can happen simultaneously in a given country.

Entry into the value chain: The most frequently observed way to enter the offshore services value chain is through the establishment of call center operations. This represents an opportunity for low-income countries that seek to enter into the knowledge economy.[8] Companies seek employees with good general communication and problem-solving skills and typically hire young people with completed high school education, enrolled college students, and recent graduates. Further skills training is provided by the company. These operations rely on scalability in order to drive profitability, suggesting that these are best suited for developing countries with large populations.

Upgrading within BPO activities: This describes the shift of companies that have established basic BPO operations such as call centers into new services, including finance and accounting, payroll, and supply chain management. In other cases, upgrading can also happen by improving and expanding

[7] Process upgrading is also identified; however, due to marginal returns to economic development from this type of upgrading in offshore services, it is not discussed in detail in this paper.

[8] Since irregularities with misuse and sale of personal data were identified in the BPO industry India in 2006, a commitment to personal data protection has become very important for countries to enter the sector. Several countries subsequently introduced legislation to improve this; however, others such as India continue to hold a significant percentage of the market without having finalized this legislation.

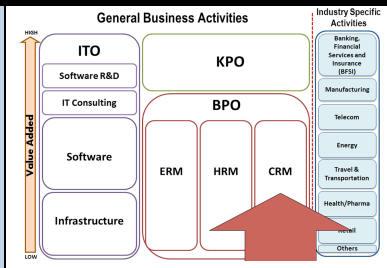
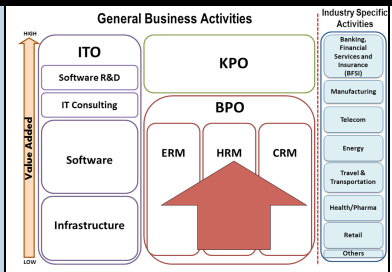
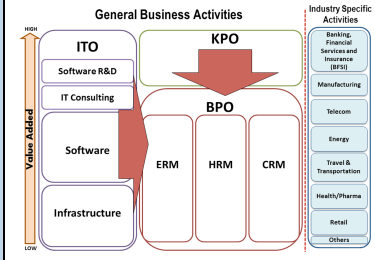
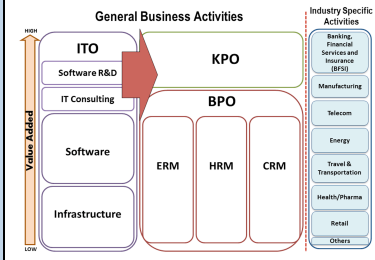
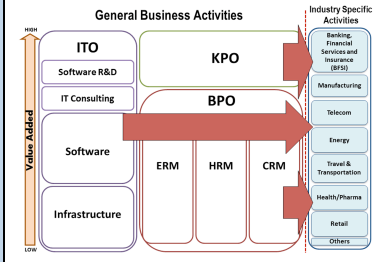
call center operations or even specialization in certain niches, for example, call centers for sophisticated financial services. The learning curve associated with overcoming the challenges of exporting services during the introduction of call center operations can be quickly leveraged to both improve upon current services and upgrade into higher-value services. Higher-value BPO activities rely on similar repetitive functions as call centers, although as a whole, they draw on a slightly more educated and/or experienced labor force.

Companies that have already positioned themselves in the ITO and KPO segments may opt to provide a more comprehensive range of activities including BPO services. This process usually happens with the acquisitions of smaller BPO firms and/or creating a new business unit within the company. Maintaining the provision of low-value services, while at the same time providing high-value services, requires a large but versatile and comparatively low-cost labor supply. In small countries, inflationary pressure on wages due to a limited but skilled workforce encourages countries to upgrade into higher-value services—or lose their competitiveness in the industry to lower-cost countries. On the other hand, a large country with a significant proportion of the population earning low salaries can successfully upgrade into higher value services and at the same time remain competitive in basic services.

IT service firms searching for new ways to diversify their revenue streams opt to include KPO activities in their portfolio. IT companies that previously only offered IT services to their clients engage their customers to find solutions for "unsolved business problems rather than incomplete programming tasks" (William F. Achtmeyer Center for Global Leadership, 2008, p. 3). IT firms leverage their successful global approach to the technology industry by becoming players in the business-consulting field and hire a large number of Master of Business Administration (MBA) graduates and workers with business experience and sharp analytical skills.

Companies offering some ITO, BPO, and KPO services for a wide range of industries often specialize and focus on key industries in which to develop expertise. This trajectory is closely correlated with leading productive industries in the host country. Companies hire area experts to sustain their competitive advantage in specific niche areas, drawing on existing highly qualified human capital and a well-established pipeline for educating and training professionals and technicians for the sector.

Table 4.2. Upgrading Trajectories in the Offshore Services Global Value Chain

	Diagram	Description
Entry into the Value Chain		• Common way to enter the offshore services value chain is through the establishment of call center operations. • Opportunity for low-income countries to enter into the knowledge economy.
Upgrading within the BPO Segment (Functional Upgrading)		• Companies expand their BPO services within the segment. • Improving and expanding call centers operations or specialization in certain areas such as inbound or outbound, sales, CRM management, etc.
Broad Spectrum Services (Functional Upgrading)		• Companies positioned in the ITO and KPO segments may opt to provide a more comprehensive range of activities and include BPO services. • Acquisitions of smaller BPO firms and/or creating a new business unit within the company.
Upgrading from ITO to KPO functions (Functional Upgrading)		• IT service firms include KPO activities in their portfolio. • IT companies engage customers to find solutions for unsolved business problems.
Industry Specialization (Intersectoral Upgrading)		• Companies offering some ITO, BPO, and KPO services for a wide range of industries start specializing and focus on key industries to develop expertise. • This can include both lower value and high value activities.

Source: Duke CGGC.

V. Workforce Development in the Offshore Services Global Value Chain

Since high standards must be maintained when the provision of services is transferred from developed to developing countries, the educational level and skills in local workforces have been key drivers of location decisions in the offshore services industry (Graf & Mudambi, 2005; Hollinshead et al., 2011).[9] The quality levels expected by clients, however, often far exceed those of domestic markets in the developing world; thus, in addition to access to employees with a minimum level of education, this necessitates specific additional workforce development measures. To meet these global demands, offshore service providers employ a similar approach to employee development as in the industrialized world. These include selective competency-based hiring, minimum formal education, induction sessions, specialized and on-the job training, skill certification, mentoring, and leadership development programs (Fernandez-Stark et al., 2010b; Wadhwa et al., 2008).

Table 4.3 outlines the different educational profiles and training requirements for each segment of the value chain.

[9] Other determining factors have included operating costs (principally driven by labor expenses), quality of the telecommunications infrastructure, language skills and cultural compatibility, time zone, government support of industry, political and economic stability, maturity of the legal system, and protection of intellectual property rights (Lewin, 2008; Manning et al., 2008).

Table 4.3. Job Profiles in the Offshore Services Global Value Chain

Position	Job Description	Formal Education Requirements	Training/ Experience	Skill Level
ITO				
IT Technician	Maintains equipment and network devices, provides software support for updates.	Technical diploma/degree	Specific technical courses, on-the-job training, and experience	
IT Software Programmer	Programs software applications for general or customized use.	Technical diploma/degree	Software programming courses and certifications	
IT Consultant	Provides advice to help firms align IT strategy with their business objectives (may include information risk management, IT infrastructure, strategy, data management).	Bachelor's degree in IT/ Master's degree in engineering	Consulting/ management experience	
Software R&D Engineer	Designs, develops, and programs innovative software packages and functions.	Bachelor's /Master's/ Doctoral degree in industrial engineering/computer science/informatics	Software programming courses and certifications	
BPO				
Call Center Operator	Answers in-bound calls regarding specific products and provides general customer services.	High school/ Bachelor's degree	Two – three week of training and on-the- job training	
Finance and Accounting Analyst	Provides accounts receivables and accounts payable processing, reconciliations, ledger keeping, and income and cash statement preparations.	High school/ technical institute diploma in accounting	Technical training and on-the-job training	
Marketing and Sales Representative	Supports inbound and outbound sales, sales order processes, and customer monitoring.	Technical/Bachelor's degree	Short training and on-the-job training	
BPO Quality Assurance and Team Managers	Ensure BPO agents meet specified client service standards and monitor agent performance.	Technical and university-level professionals	Technical training and on-the-job training	
KPO				
Finance Analyst	Provide guidance to businesses and individuals making investment decisions; assess the performance of stocks, bonds, commodities, and other types of investments.	Bachelor's degree in business administration	Charted Financial Analyst (CFA) certification	
Business Analyst	Provides business services, such as market research, business opportunity assessment, strategy development, and business optimization.	Bachelor's/Master's degree in business administration	Experience	
Legal Analyst	Reviews and manages contracts, leases/ licenses. May provide litigation support services or intellectual property services.	Law degree	Experience and training in specific country legal systems	
R&D				
Researcher	Undertakes projects to increase the stock of knowledge; develops new products based on research findings.	Master's/doctoral degree	Experience/industry specialization	

Source: Duke CGGC, based on Fundación Chile, 2009; Fernandez-Stark et al., 2010b; Wadhwa, 2008.

Skill Level	Low	Low–Medium	Medium	Medium–High	High
					
	No formal education/ experience	Literacy and numeracy skills; experience	Technical education/ certification	Technical education/ undergraduate degree	University degree and higher

As can be seen in the ***Table 4.3***, formal education is used as an preliminary screen for potential recruits; however, this is generally complemented by further competency evaluations (Wadhwa et al., 2008). For example, the minimum level of formal education required to work in the BPO sector is a high school diploma, but this can vary by country, and the same position may sometimes require a college degree.[10] Required competencies, however, are consistent across countries and include communication skills—such as active listening and voice clarity; analytical, decision-making and basic computer skills; and language ability—as required by the firm's market. These competencies differ according to the service performed in the value chain. In higher-value ITO and KPO activities, for example, in addition to formal tertiary education, globally recognized certifications are almost as important as signal quality and skill level of potential employees. These can include working knowledge of global software platforms (e.g., Microsoft, Cisco, and Oracle certifications) or development of financial analysis skills (e.g., CFA certification from the global CFA Institute).[11]

Providing services in any level of the value chain, be it through entry into the value chain or upgrading, thus depends on the availability of the required labor qualifications and skills noted above for that stage (Graf & Mudambi, 2005). Lower levels of the value chain require a significantly larger number of employees than higher levels, which depend on quality rather than quantity. This search for suitable skills can draw on unemployed labor pools, existing employed labor attracted to the industry by higher relative wages and opportunities to work with global clients, new graduates from the growing higher education sectors in many developing countries or, as is becoming increasingly common in the industry, further developing the skills of the firm's current workforce.[12]

The dynamic and rapid growth of employment in this industry across developing countries, however, has put significant pressure on this labor supply. This has had two important consequences for workforce development. First, it has led to significant competition between firms for existing talent (Chadee et al., 2011). Firms must now focus not only on recruiting new employees, but also on retaining current employees.[13] Second, clients are placing increased demands for more sophisticated services from their service providers as they become more comfortable with the offshoring model. Thus, many firms have begun to provide their employees with a broad range of additional training and education programs, including mentoring, career planning and providing access to formal degree programs, such as MBAs or other Master's programs (Wadhwa et al., 2008). In the short term, these employees are bound to their

[10] Preliminary research suggests that this depends on the opportunities in the local labor markets and the quality of the education system.
[11] Appendix 4.A.1 provides an overview of several of the different certifications required at each level.
[12] Kumar and Chadee (2001) note that internal training and development can "result in specific advantages, where tacit organizational knowledge and specific on the job skills are more easily learned, transferred and applied."
[13] For example, the new "cohort" of working professionals in India is known to be highly ambitious. Leaving to pursue alternative, higher paying jobs or further education is cited as one of the main reasons for employee attrition in many segments of the industry (Wadhwa et al., 2008; Williams, 2004).

firms by contractual agreements to repay the costs of education facilitating firm upgrading; in the long term, the portability of these new skills can lead to positive externalities in local labor markets resulting in country-level upgrading. In addition, firms with "strong human capital orientation usually enjoy lower attrition rates, lower absenteeism, more competent workforces and higher productivity, all of which contribute to greater competitiveness" (Chadee et al., 2011).

These workforce development initiatives for employees differ according to the firm's position in the value chain. Training programs in the BPO sector tend to include the extensive use of internal e-learning platforms covering areas such as domain expertise certification, soft skills, and process quality improvement in order to upgrade the skills of large workforces. Some firms also offer BPO employees access to formal degree programs in higher education. High value ITO firms focus on maintaining their workforce at the cutting edge of technology, which includes acquisition of up-to-date certifications and training that foster innovative thinking.

As the industry continues to grow and evolve both at the global and local levels, diverse models of preparing, engaging, and developing current and potential employees for different stages of the value chain have emerged across developing countries. Country cases in the remainder of this report explore the variety of private, public, and multisector workforce development strategies undertaken in six developing countries to support these market entry and upgrading efforts of firms and countries in the offshore services value chain.

VI. Developing Country Case Studies

The cases of developing countries presented in this section illustrate the role of specific workforce development initiatives in supporting the process of entry and upgrading in the offshore services industry. The cases were chosen to represent the variety of upgrading experiences in the industry, including countries of different size and geographic locations. The pioneer cases with the longest and most diverse experiences in the offshore services industry (Chile, India, and the Philippines) are presented first to outline the full range of economic upgrading stages and workforce development initiatives for the offshore services industry. Subsequently, we discuss three low-income countries in Central America and the Caribbean that have entered the industry more recently.

We examine three country cases in depth: (1) Chile, (2) India, and (3) the Philippines. Each illustrates an alternative path of rapid growth and development of the industry. India and the Philippines are mature exporters of offshore services. India is the worldwide offshore services market leader, with both international and domestic lead firms. Over the past decades, it has upgraded to offer all services in the value chain, including industry-specific services. The Philippines has drastically expanded

employment in the BPO/call center segment to become the world's largest BPO destination and is also expanding into niche services. Chile is an emerging exporter in the sector, which has leveraged its small but highly educated workforce and developed strengths in the higher end of the value chain in ITO, KPO, and innovation services in specific industries. These cases reveal distinct workforce development initiatives that helped to promote upgrading.

In addition, we analyze the entry strategies and workforce practices of three low-income countries in the Central America and Caribbean region: (1) the Dominican Republic, (2) El Salvador, and (3) Guatemala. These countries provide examples of how smaller low-income countries have more recently entered the industry and they allow us to discern the role of workforce initiatives in supporting market entry. ***Table 4.4*** provides an overview of the economic and offshore services indicators in each country.

Table 4.4. Selected Economic and Industry Country Indicators, 2008

	India	Philippines	Chile	Dominican Republic	El Salvador	Guatemala
Gross Domestic Product (GDP) (US$ billions)	1,260	167	170	46	22	39
GDP per capita (at PPP)	3,011	3,306	14,579	8,446	6,721	4,749
Offshore services revenue (US$ billions)	47[e]	6	0.86	NA	NA	NA
Offshore services % of GDP	4	3.6	0.05	NA	NA	NA
Total labor force (millions)	475.6	38.8	7.1	4.4	2.8	3.9
Labor force in offshore services	2,236,614	475,000[b]	20,000	22,000	6,800	6,500
Entry Year	Mid1990s	Early 2000s	2000-2002	2000-2002	2004-2005	2005-2006
Entry Point	Low value IT	Call Center	IT & Call Center	Call Center	Call Center	Call Center
Highest Value Activity	High IT, KPO, R&D	BPO, F&A, HRO	High IT, KPO R&D	BPO, F&A HRO	Contact Center	BPO, F&A
Enrolment in higher education (millions)	12.82 [a]	2.48[a]	0.86	0.42	0.12	0.20
Gross Enrollment Rates (GER) **in higher education** (%)	11[a]	29[a]	47	35	21	9

Notes: [a:] 2005–2006; [b] 2009; [e]: estimates 2009. PPP is Purchasing Power Parity.

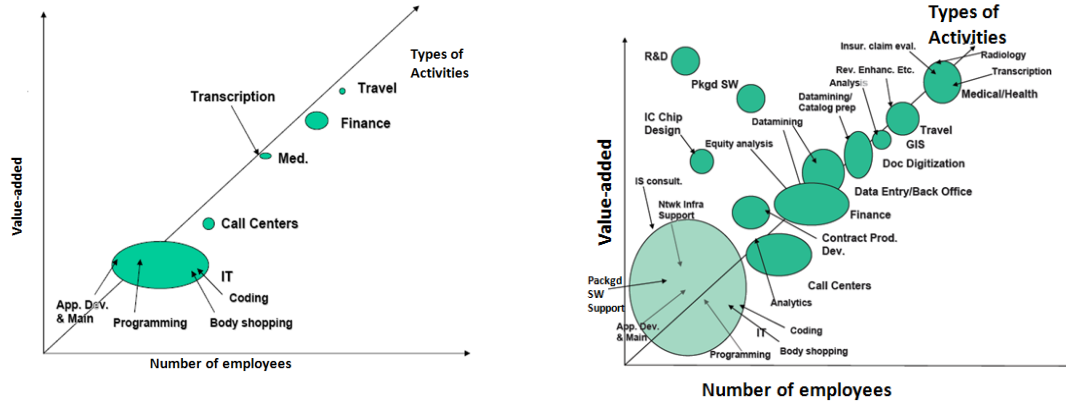
Sources: Economist Intelligence Unit, International Labor Organization, Business Processing Association of the Philippines, NASSCOM, IDC, Ministry of Human Development- Government of India, Ministry of Education-Chile; Commission on Higher Education-Philippines; UNESCO.

A. India

India is the global leader of the offshore services industry, accounting for approximately 40% to 45% of the world market (NASSCOM, 2008). India offers services in all segments of the offshore services value chain, including ITO, BPO, KPO, and a significant number of advanced services for specific industries such as finance and health care. In 2009, revenues reached US$47 billion, accounting for 4% of the country's GDP (NASSCOM, 2009). By 2008, the industry employed 2.3 million people, with an indirect job creation of approximately 8 million (NASSCOM, 2009). The industry estimates demand for new recruits will reach 1.4 million for 2009 and 2010 (OECD, 2010).

India's upgrading trajectory involves continued expansion in all segments of the industry. The country has not abandoned the provision of low-value services in favor of high-value services. As a result, Indian services provision is marked by significant overlap, with upgrading and workforce development often occurring in parallel in different segments. ***Figure 4.4*** below illustrates this simultaneous evolution and expansion of India's capabilities in the offshore services value chain from 2000 to 2006. Firms initially entered the industry to support the IT sector, and, by 2006, they had also moved into the provision of higher-value services, such as financial and legal analysis (Dossani & Kenney, 2007; Sako, 2009).

Figure 4.4. Upgrading in the Indian Offshore Services Industry



Source: Dossani & Kenney, 2007.

Industrial Organization

A mix of large foreign providers, MNCs captive centers, and local Indian firms has characterized the offshore services sector in India since its inception. Early captive centers were closely followed by global providers, such as IBM and Accenture. Indian firms grew quickly alongside these firms to become

important sources of competition in the industry. Today in India, IBM is the largest employer in the country; however, TCS, Infosys, and WIPRO follow closely.

Workforce Development

A shortage of qualified human capital in early stages of the industry led firms in the private sector to develop highly functional and efficient training and development programs, matching specific skills development to client needs. With sophisticated internal development capacity, firms now draw on college graduates from a broad range of disciplines and hire across the male-female pool, focusing on general ability and attitude rather than specialized domain and technical skills. These programs offered greater flexibility and sharper focus to training than traditional universities, and recently firms have begun to play a direct role in shaping curriculum design within universities and other established training academies. As the global market becomes more competitive and India upgrades across all industries, this ability to leverage initiatives such as formal classroom-based training, on-the-job training and mentoring in order to rapidly a large number of workers provides a country with an exceptional asset.

The following three key phases of industry upgrading can be identified (also see ***Table 4.5***):

Stage 1. Entry into IT services in the value chain: 1990s-2010

India's offshore services industry began with the ITO segment. The country entered the new market by offering simple IT support services and continued to upgrade successfully into sophisticated software R&D. By the end of the 20th century, India was considered to be one of the most important IT providers in the world. This entry into IT services has its roots in the country's sizeable supply of low cost, English-speaking engineering talent, the phenomenon of innovative Indian "body-shopping"[14] solution during the protectionist years in India, and the Y2K crisis at the end of the 20th century. As large global providers such as IBM began to seek out this cheaper talent to resolve the challenges presented by Y2K, a number of Indian IT professionals who had worked in the United States returned home having gained considerable domain expertise and began to work in these new centers and also established new Indian firms. These initiatives have evolved into India's well-known leading firms, such as TCS, Infosys, and WIPRO (Dossani, 2005). These firms leveraged their relationships with multinationals in the country, adopted and adapted leading management practices to the Indian reality, and were able to emerge as successful competitors in the global IT sector.

Workforce Development. During this period**,** firms quickly found that the tertiary education system, while large, was unable to sustain the supply of quality engineering talent required to satisfy the exploding demand for IT services. In 2003, one firm alone, WIPRO, was hiring 1,000 employees a month

[14] Body-shopping was the name given to the practice of sending IT programmers from India to the United States to work directly on client sites. This practice was common during the 1970s and 1980s.

(Williams, 2004). Enrollment in tertiary education increased by four million students between 1999 and 2005 and reached 12.8 million by 2006 (Agarwal, 2009), thanks to a large number of private institutions that emerged to support this growing demand for education.[15] This showed remarkable progress in increasing access; however, competing for limited, well-qualified teaching staff, these new institutions struggled to maintain high quality standards for the growing IT sector (Altbach, 2009).

Many of the new graduates emerging from these universities were under-skilled and few were employable without further training (Wadhwa et al., 2008). To meet demand for services and maintain their position in the market, the private sector thus had to fill the gap by developing significant in-house training practices. Human capital recruitment, training, and development became a central part of corporate strategy in India and all senior management was actively involved in this development. Firms also established sophisticated feedback mechanisms to constantly refine recruiting strategies to meet their projected needs. A substantial proportion of employee technical training continues to be carried out internally, matching specific skills development to client needs. Several of the larger firms, including Wipro and Infosys, have established their own training campuses (Wadhwa et al., 2008), which increased the efficiency with which they can upgrade.

During this initial phase of upgrading, there were also a number multisector initiatives in workforce development. To improve the education provided at universities for the offshore sector, a number of private-sector firms reached out to established institutions. Cadence India, for example, launched a partnership with over 100 colleges to train trainers, provide discounted software, and offer practical experience in design for students (Wadhwa et al., 2008). This program continues to ensure that students are already experienced users of the widely adopted Cadence software programs when they enter the workforce. Another example is Accenture's Campus Corridor Program, which has facilitated their deployment of electives for third-year engineers across numerous universities in India. Accenture also reaches out to faculty of these universities, inviting them to their Indian facilities to keep them up to date on cutting edge technology (Accenture, 2010). Public initiatives included the establishment of the Very Large Systems Integration (VLSI) Special Manpower Development Program by the Human Resources Division (HRD) in a joint initiative with both the private sector and educational institutions to develop qualified HR for VLSI and the related software design sector, which is aimed at facilitating further upgrading in IT R&D (Department of Information Technology-India, 2010).

[15] Earning "University" status in India requires an Act of Parliament and thus many of these new institutions have only gained "deemed university" status, which allows them to confer academic degrees. The lack of transparency and quality standards in the assignment of this status led to the suspension of further awards in 2007 (Agarwal, 2009).

Stage 2. Expansion into BPO and Upgrading into KPO Operations: early 2000s

Toward the end of the 1990s, MNCs, such as GE, had experimented with using India as a backoffice provider for BPO services. However, it was only in the early 2000s that the BPO segment began to take off in the country. The burst of the Internet bubble in 2001 highlighted the vulnerability of the IT sector focused on the provision of just one service, and the early success of these captive back-office centers encouraged IT firms to embark into BPO services to diversify revenue streams.

As Indian firms expanded across the ITO and BPO segments, they came into direct competition with global service providers such as IBM and EDS. These global providers had a distinct advantage over the Indian firms as the result of their acquisition and development of business consulting divisions in the 1990s. This second phase is also marked by the country's upgrading from ITO to KPO activities. Indian firms, such as Infosys and WNS Global Services, recognized the importance of shifting their sales strategy and began offering business consulting services.

Workforce Development. Rapid growth in the BPO sector through the mid-2000s was supported by the same efficient private sector recruiting and training techniques, such as Enterprise Resource Planning systems that track and analyze existing skills and attrition data to forecast recruitment needs (Wadhwa et al., 2008).[16] Upgrading into the ITO consulting and KPO segments, however, required firms to recruit heavily from existing labor pools and MBA programs. Adjusting their compensation packages to attract top talent, companies sought out experienced consultants from leading global competitors and focused on hiring the top 10% from MBA programs. These firms recognized that their value proposition in these segments was drawn directly from their access to their IT and BPO operations. Thus, in addition to training opportunities in leadership and management that are more common to traditional consulting practices, training focused on developing awareness of the power of the GSD model and leveraged successful techniques such as e-learning platforms developed for the BPO and ITO segments. BPO firm Genpact sought to harness its internal workforce by launching a program in 2006 to train their BPO workers to take on roles of the company's growing analytics domain. They also established a customized executive education program in partnership with Duke University; 300 employees participated in this program in 2007 (Wadhwa et al., 2008).

In order to meet global standards in accounting practices, CFA certifications by the CFA Institute became increasingly important for Indian BPO operations as well as firms providing offshoring in the financial services sector. The number of people taking CFA tests in India increased fivefold between 2002 and 2006 and had reached 4,500 by 2008, compared to a 25% decline in the United States during the same period (Everest Group and Letsema Consulting, 2008; Onaram, 2006).

[16] Unlike ITO services, BPO services do not require engineers and can be drawn from a broad range of disciplines.

Nongovernmental organizations (NGOs) have also played a small role in bringing marginalized groups such as rural women to the industry. With fewer opportunities to move to the city than men, these women have been found to be more loyal, helping companies to reduce their attrition rates (India Knowledge@ Wharton, 2010). Training programs ensure that high quality standards are maintained.

Due to the success of private sector initiatives, government workforce development initiatives were largely absent in this upgrading phase.

Stage 3. Vertical Industry Specialization: Mid–Late 2000s

The most recent upgrading in India has been a shift into vertical industry specializations, with increased intersectoral upgrading. By mid-2000s, the global service markets became increasingly consolidated, with smaller providers being absorbed by large firms. In order to differentiate themselves, firms began to specialize in vertical industries offering high- value, industry-specific services, such as R&D offshoring. In the healthcare industry, for example, by 2010, multinational pharmaceutical companies, such as TCS, began offering clinical trial services for pharmaceutical giants such as Roche (Gupta, 2008). The IT giant also leveraged its position as a subsidiary of TCS, to enter specialized R&D services for the aeronautical, automotive, and healthcare industries and had soon established six R&D labs (Tata Consultancy Services, 2009). Mid-sized IT firms such as KPIT joined forces with Cummins to provide high value IT services for the automotive industry (KPIT Cummins Infosystems, 2009), while Infosys honed in on becoming the leading outsourcing provider for the financial services sector (Infosys, 2010).

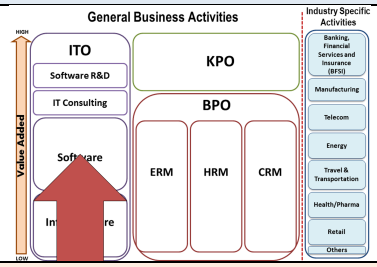
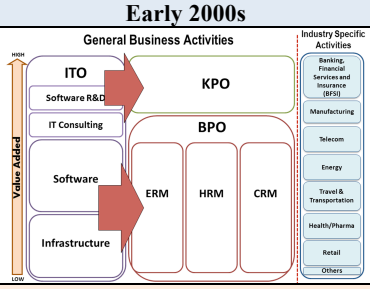
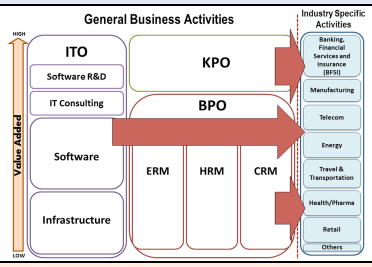
Workforce Development. As the offshore firms advance into higher-value services, the availability of highly skilled researchers is required. In initial stages of this upgrading, the private sector tapped into the existing labor pool (both university graduates and experienced professionals) of specialized talent from different industries combined with human capital from high-value IT services. However, India currently has a comparatively low number of researchers and technicians working in R&D compared to other developing countries. Firms thus focus on fostering educational upgrading and sponsoring employees to pursue doctoral programs, and this is becoming an important driver of talent development. Training emphasis has been placed on building cross-functional teams and providing technical training specific to the industry, as well as the GSD model. Training takes place both in-house, as well as through customized programs with different science, technology, and management institutions in India.

To further boost the low number of doctoral candidates in the country, a new government program, INSPIRE (the Innovation of Science Pursuit for Inspired Research) was launched in 2008. This three-part program is aimed at discovering talent at an early stage and setting them on the path of research

careers through the provision of scholarship and internships (Department of Science & Technology - India, 2010). The National Competitiveness in the Knowledge Economy program was set up by the Department of Education to identify potential demand for highly qualified human capital and determine the best means by which to develop the appropriate workforce.

Table 4.5 provides an overview of the industry evolution and the corresponding workforce development initiatives that took place in India during the past two decades.

Table 4.5. India: GVC Upgrading and Workforce Development Initiatives

1990s–2010	Early 2000s	Mid–late 2000s
		
Private Sector Workforce Initiatives		
• In-house training supplements poor quality tertiary education. Several firms begin to work with universities to improve quality of graduate skills. • Companies began hiring recruits from numerous different fields in the middle of their university degrees and providing in-house training to quickly get new hires up to speed. • Recruitment, training and development, management and process improvement, and retention become a key part of corporate strategy.	• Firms hire top talent from rival firms and MBA programs for KPO and IT consulting. Workshops held on benefits of the GSD model. • Training programs for BPO with accent neutralization and cultural programming. • In-house university training includes graduate-level training including MBAs and courses in leadership and management (Cohen, 2008). • Call center training. English accent neutralization	• Firms hire staff from the industries they are serving. • Highly technical industry specific training is provided for cross-functional teams.
• Wipro open university campus with 300 professors on staff and offer courses from Japanese to advanced engineering. Basic training begins with 12–14 weeks of introductory courses in the Wipro methodologies, technical knowledge, languages, and accents. • The Infosys Global Education Center trains over 4,000 "freshers" or new recruits per year during 14-week training sessions in state of the art facilities in Mysore, India (Schlosser, 2007). • Other firms established customized programs for potential employees through leading science, technology, and management institutions or worked closely with different universities to improve curriculum development in different disciplines, as well as providing workshops for both faculty and students. There is limited evidence of new training institutions emerging to address this growing need for HRD.		
Public Sector Workforce Initiatives		
• Government established an HRD in the Department of Information Technology. • New regional institutes in Kohima, Nagaland, and Agartala created programs to increase regional employment opportunities and facilitate availability of quality IT manpower (Department of Information Technology-India, 2009). • IT programs focus on course content, generating mentors, improving the quality of existing engineering and IT university programs, and expanding access to increase the number of skilled graduates in the IT sector.		• Government launched INSPIRE in 2008 to build R&D capacities by recruiting talent early (15 years old), providing scholarships for all tertiary education levels, and guaranteeing research fellowships. • The National Competitiveness in the Knowledge Economy program was set up to help identify demand for highly qualified human capital and the best means to develop that talent.
Multisector Workforce Initiatives		
• Cadence India launches a partnership with IIT Kanpur and Kharagpur to train faculty and provide scholarships and software. • HRD launched a 5-year Information Security Education and Awareness Program and engaged educational institutions to offer diplomas, certificates, Bachelor- and Master-level courses in information security. By 2010, 25,000 students and government officials had participated in these training programs.	• NGOs focus on drawing marginalized groups meeting the minimum education and skills requirements into the industry labor pool through the establishment of rural BPOs. With fewer opportunities, this group has shown greater loyalty and decreased the cost of attrition. • Gram IT, a rural BPO focused on youth recruitment, put new employees through a 12-week full time training program to improve their fluency in English, as well as develop computer and typing skills (Byrraju Foundation, 2010)	

Source: Duke CGGC.

B. The Philippines

The Philippines is quickly becoming the leading destination in the world for call centers and finance and accounting outsourcing. In addition, the Philippines has also moved into vertical services with the provision of medical transcription services. In 2008, revenues reached US$6 billion, and the BPO industry alone accounted for 3.6% of the country's GDP. That same year, IT/BPO sectors together accounted for 12.4% of the Philippine exports (BPO Services Association, 2009). By August 2009, the number of full-time employees had risen to 475,000, with an average annual increase of 40% in employment generation between 2004 and 2008. Call centers represent 61% of all employees in the industry**.**

Industrial Organization

The industry's success is mostly due to the numerous international BPO firms that have set up operations in the Philippines to serve the U.S., Asian, and Australian markets. These firms include leading third-party call center providers Sitel, Sykes, Convergys, and Teleperformance. In 2010, Sitel was operating seven major call centers in the country. Teleperformance offered 7,000 seats across six centers, while Convergys has a 2,041 seat center, making it the biggest call center in the world. Local firms have been present in the industry. However, with the exception of E-telecare, which ranked third in revenues before merging with Stream Global Services in 2009, these firms are quite small and they have been overshadowed by the large global providers.

Workforce Development

The development of the offshore services industry in the Philippines has been fueled by the large and steady supply of university graduates emerging from the country's tertiary education system who consider BPO service an attractive career alternative. In addition, there are industry-wide efforts to enhance both spoken and written English of these graduates and a commitment by the government to provide specific training programs to facilitate their entry into the sector. The tertiary education system in the Philippines is recognized for its high enrollment levels: 29% of the university-aged population are enrolled in one of approximately 2,000 higher education institutions in the country (UNESCO Institute for Statistics, 2010). In 2008, the Philippines graduated approximately 490,000 college students. This has provided an ample supply of human capital for the offshore services industry. Most workforce training initiatives were focused on improving competitiveness in the BPO segment.

The offshore services industry in the Philippines has evolved rapidly and three upgrading stages can be identified:

Stage 1. Entry into the value chain through BPO call center services: Late 1990s

The Philippines entered the value chain through the provision of call center services around the turn of the century. Pioneer firms such as Sykes set up call center operations in the country in 1997, with just 16 employees, and by 2003, it had grown to over 2,000 agents (Sykes, 2010). By 2009, the country had the same number of call center agents as India (The Economic Times, 2010).

Workforce Development. The Philippines' successful entry and expansion into the call center industry can be attributed to the large number of English speakers in the country and low labor costs. Given the country's historical ties with the United States, a significant proportion of the population are fluent in American English,[17] and offshore service providers soon found that Philippines agents were more culturally compatible with American clients than those in India. Thus, the minimal need for voice and cultural training has helped the fast growth of call centers in the country. In addition, the Philippines call center sector provides an attractive career alternative for college graduates in the country, and salaries in the industry are highly competitive in the domestic labor market (Friginal, 2009).

Primary and secondary education is two years shorter in the Philippines than in India, and college graduates have the equivalent of associate degrees in the United States. During entry, the private sector easily hired from this pool of graduates, offering short 2–3 week training for employees to be effective on the job. The companies provided in-house trainers for ongoing monitoring, assessment, and coaching of staff. In addition, several initiatives were established by the private sector to improve the language skills of the industry workforce, particularly of "near-hires" (Friginal, 2009). These initiatives include hiring American expatriates or Filipinos with advanced English skills to provide ongoing language classes for employees, and ADEPT, a joint initiative between the industry association Business Process Association of the Philippines (BPAP) and educational institutes to enhance language skills of university students.

Furthermore, BPAP established a new National Competency Test. Interested participants complete an online test covering basic skills, English proficiency, and computer literacy, as well as behavioral competencies, required for successful participation in the industry. Results are published in a hiring database available to firms in the industry to diminish both recruiting costs and to help sustain the significant demand for new employees.

In multistakeholder initiatives, the BPAP has opted to share information from the National Competency Test with educational institutions to help them ensure their curriculum meets global industry requirements. The government supported this initiative through the Commission for Information and Technology by providing financing for the first 10,000 applicants to take the test for free (Valermo, 2010).

[17] The Philippines is the third largest English-speaking country in the world, and 72% of the population is fluent in American English (BPO Services Association, 2009).

It is hoped that this will provide a forum for those in workforce development to learn how to adapt their curriculum for better industry results (BPAP, 2010). Other collaborations between firms and universities have been established to train future call center employees, such as a pilot program between the BPO firm Sitel and the University of Cordilleras.

Stage 2. Upgrading throughout the BPO segment: Mid-2000s

The country's offshore services sector has upgraded through the BPO segment, expanding services from call center operations to finance and accounting, allowing the industry to establish a dominant presence on the global market. By 2010, Manila had become the world's largest city destination for BPO activities (Vashistha & Nair, 2010).

Workforce Development. The sector continued to expand into higher value BPO services, thanks to the relatively high percentage of the population that hold college degrees, as well as the general suitability of the labor force to work in MNCs. Employability rates for finance and accounting graduates are twice as high in the Philippines as in India, and 2.5 times for generalists, given that higher education in this country has followed Western models (Beshouri & Farrell, 2005). Most university courses in finance and accounting are taught according to U.S. standards, providing widespread talent for the establishment of back-office operations for many American banks and financial institutions (Singh et al., 2008). Overall, it is estimated that two-thirds of the 490,000 college-degree graduates in 2008 completed programs suitable for the offshore sector (BPO Services Association, 2009). The private sector was thus able to draw on this segment of the labor pool in order to drive growth through the value chain.

The sector also focused on developing middle management to remove a potential bottleneck in the growth of both call centers and other back-office operations. Pre-MBA programs have been developed with local universities, as well as with Harvard Business Publishing, in order to help the industry meet developed world standards.

In both the first and second stages of upgrading, the government has focused on providing substantial funding for training to direct underutilized labor capacity towards the growing BPO segment in the country. ***Box 4.1*** highlights these initiatives. These initiatives were expanded in light of the 2008–2009 economic crisis, when the government contracted several private sector partners and training institutes including the Trade Union Congress to provide month long "finishing courses" for unemployed engineers and returning overseas Filipinos to enter the call center industry.

Box 4.1. Training-for-Work Scholarship Program—Philippines

In 2008, through the **PGMA Training for Work scholarship**, the government distributed around 40,000 scholarships focused on workers across the ITO and BPO sectors. The call for applications invited "recent high school graduates, employees looking for a career change, underemployed or unemployed" people to apply on a need-blind basis. Over 30,000 people have graduated from these training programs and 67% of them are now employed in the offshore services industry (BPAP, 2009). In 2009, President Gloria Macapagal-Arroyo expanded this training for work program to quickly ramp up near hires.* According to the BPAP, 75% of these near hires subsequently found work in the industry, and an estimated 8,000 people were expected to complete this program in 2009.

*"Near hires" are potential employees for the sector that are rejected in the recruitment process due to specific shortcomings in their skills. Program training focuses on developing near hires weaknesses in order to usher them into the workforce as quickly as possible (Oliva, 2008).

Stage 3. Vertical industry specialization: late 2000s

In addition to these two previous upgrading trajectories, the Philippines have also sought to upgrade into industry-specific offshoring sectors with the inclusion of services for the medical industry, establishing the country as a destination for medical transcription. The foray into the medical transcription industry draws on the enormous supply of trained medical professionals in the country.

Workforce Development. The establishment of a medical transcription service sector tapped into a large and predominantly jobless medical workforce.[18] The scarcity of jobs in the past had led many of these Filipino workers to migrate abroad to find employment, resulting in a large brain drain. Medical staff are widely recognized for their quality internationally and a significant number of them work in hospitals and medical facilities around the world. This makes them very suitable to serve developed countries in all type of medical transcription activities.[19] In order to facilitate the growth of this niche, initiatives were taken by the private sector to provide certifications for staff to meet global transcription standards. The privately owned MTC Academy, the largest medical transcriptionist certification institution in the Philippines, established a partnership with the American Association for Medical Transcription (AAMT), matching the curricula and central examination system (MTC Academy, 2010).

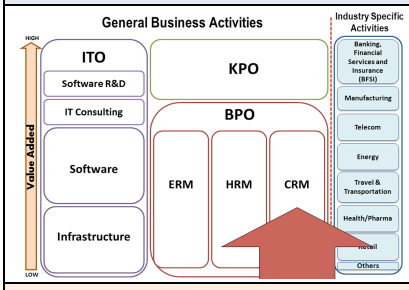
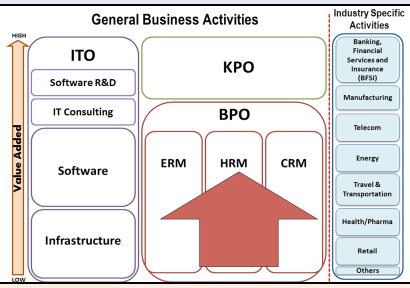
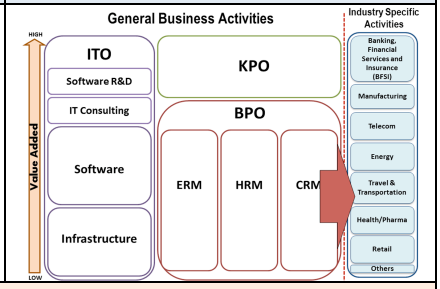
The government has also supported the growth of this segment, offering scholarships to healthcare professionals for specialized training including laboratory work, knowledge about foreign healthcare systems, particularly that of the United States, and accents and idioms to prepare them to provide high-quality services for mainly U.S.-based doctors (Philippines Medical Transcription, 2007).

[18] Medicine is the third most popular career choice in the country,

[19] The Philippines has a large and growing number of nurses. Enrollment in the medical field increased from 150,000 in 1999–2000 to 550,000 in 2005–2006 (National Statistical Coordination Board, 2010). Salaries for medical transcriptionists are on par with those of registered nurses (approximately US$220 a month).

Table 4.6 provides an overview of the industry evolution and the corresponding workforce development initiatives that took place in the Philippines over the past two decades.

Table 4.6. The Philippines: GVC Upgrading and Workforce Development Initiatives

Late 1990s	Mid-2000s	Late 2000s
		
Private Sector Workforce Initiatives		
• Short 2–3 week training for call center operations.		• Focus on raising awareness of medical transcription as a viable career alternative (Sibal, 2009). • MTC Academy establishes partnership with AAMT to provide training for transcriptionists based on the U.S. model and standards.
• Opportunities to practice and in-house language trainers provide constant monitoring and coaching. • National Competency Test and database helps to reduce recruitment delays and costs.		
• American expatriates work with agents in various areas of language production and task performance. • ADEPT, a program designed to improve English language skills of BPO applicants, is launched in universities. Additional English language improvement programs introduced to raise "near-hires" to U.S. standard levels amongst graduates.		
Public Sector Workforce Initiatives		
• 40,000 PGMA Training for Work scholarships offered for the ITO and BPO industry. • In 2009, program expanded to "near hires". • In 2009, government also provides crash training for out of work engineers and overseas. Filipinos returning to the country for hiring in the BPO sector.		• Government offers scholarships to healthcare professionals for specialized training, including laboratory work; knowledge about foreign health care systems, particularly that of the United States; and accents and idioms to prepare them to provide high quality services for mainly U.S.-based doctors (Philippines Medical Transcription, 2007).
Multisector Workforce Initiatives		
	• Educational system has favored curriculum related to BPO rather than ITO activities, particularly in finance and economics. Two-thirds of college-degree graduates in complete programs suitable for the sector.	
	• As a result of the crisis, the Trade Union Congress was contracted by the government to provide finishing courses for call center agents and for medical transcriptionists (Boboy Syjuco, 2010).	
• In 2007, University of the Cordilleras launched a pilot preparatory course in English proficiency, technical competency, and customer relations collaboratively designed with a U.S.-owned BPO Sitel Philippines (Cabreza, 2007).	• Middle management training programs developed by BPAP with Ateneo de Manila University and De La Salle University. Harvard Business Publishing, BPAP also developed an e-learning tool, combining online and class activities. 100 managers graduate in first year.	

Source: Duke CGGC.

C. Chile

Compared to India and the Philippines, Chile is a small, but high-value player in the offshore services industry (Fernandez-Stark et al., 2010a). Chile offers services in the high-value ITO and KPO segments, as well as services such as R&D in select industries, including agriculture and mining. The country continues to offer some call center and lower-value BPO activities, as well, but these have mostly migrated to lower-cost countries in Latin America. By 2008, the country registered close to US$1 billion in service exports (IDC Latin America, 2009b). The offshore services industry employed 20,000 people at the end of 2008. The development of this industry benefitted substantially from targeted industrial policy driven by the country's economic development agency, la Corporación de Fomento de la Producción (CORFO).

Industrial Organization

MNCs and large global services providers have led the offshore services sector in Chile, although several mid-size companies and the largest firm, Sonda, also play an important role in the IT segment. Small local IT firms can be found at the high end of the value chain, contributing to advanced software development and R&D. The engineering service export sector has been dominated by large foreign firms, including Fluor, Bechtel, and SNC-Lavalin. Smaller companies have contributed to exports in a minimal way, and typically export their services to Peru or Colombia. In 2005, Comicrom, Chile's largest domestic BPO firm was sold to TCS, and subsequently the sector has been almost the exclusively realm of large global service providers including Capgemini, Sitel and Teleperformance.

Workforce Development

Two key factors have provided Chile with an important source of competitive advantage in entry and upgrading in offshore services. First, the government has played an essential role through the provision of the high-tech workforce development incentives for foreign offshore companies (see ***Table 4.7***). These incentives facilitated investments in certification and English-language training, as well as recruiting and training highly specialized personnel.

Table 4.7. List of Incentives under the High Tech Investment Program-Chile

Incentives	Financial Support	Maximum
On-the-job Training (HT3)	New employee training program	Up to 50% of annual salaries (Max=US$25,000 per person)
Specialized Training & Recruitment (HT6)	Acquirement of specific knowledge or recruitment of experts	Up to 50% of specialized training or recruitment. (Max = US$100,000 per person)

Source: CORFO, 2009.

Second, Chile's strong tertiary education has been important for providing a small but technically qualified labor pool to support the development of high-value niche activities for the value chain. The past two decades in Chilean tertiary education have been characterized by tremendous growth, and the number of graduates doubled between 1998 and 2007, reaching 82,200 in the latter year (Ministerio de Educación, 2009).

The following three major upgrading phases can be identified within the country:

Stage 1. Entry into the value chain through ITO and BPO services: Early 2000s

Chile entered the offshore services value chain in 2000, offering both IT and BPO services. The country initially attracted regional shared service centers for MNCs operating in Latin America, such as Citigroup and Unisys. However, with its small population and no particular strengths in the IT sector, this small middle-income country was an unlikely choice for entry into the industry. Chile's successful entry as an offshore services provider is to a large degree the result of the active role played by the government in promoting the country as an offshore services platform. In 2000, the High-Tech Investment Program was launched by the government to provide a wide range of investment incentives to attract foreign companies. These efforts began to pay off when Chile was ranked ninth in AT Kearney's first Global Services Index for offshore service activities (AT Kearney, 2007). However, growth continued to be slow until 2006, when the government launched the second phase of the High-Tech Investment Program and legislation regarding data protection came into effect. That year, over 20 new IT and BPO third-party providers established operations in Chile.

Workforce Development. During the initial period of entry into the value chain, many of those newly enrolled in the tertiary education system were the first generation in their family to attend university, and many had to combine studies with work (Brunner, 2007). This group fed into the newly established BPO segments as part-time employees with quality education. BPO firms provided short two- to three-week induction and training programs. The scalability of many of these services, however, was restricted to Spanish-speaking markets, due to the limited number of English speakers in the country. While some firms offer language training to help alleviate this problem, salaries for English speakers remained on average 30% higher than for Spanish speakers, reducing competitiveness for English services from Chile. A large number of government-accredited training institutions[20] now offer English language classes; however, quality varies and this problem continues to limit upgrading and expansion through the BPO segment.

[20] The government offers economy-wide tax incentives to encourage companies to invest in human capital development. Only those training programs offered by accredited organizations are eligible for the tax relief.

On the other hand, existing talent in engineering was a significant driver for the installation of IT centers in the country. Strong engineering faculties at Chile's well-respected universities and an evolving domestic IT market provided a limited but high quality supply of talent.[21] The private sector complemented this strong educational base by providing English training, as well as certifications and workshops in leading software platforms, to ensure their staff remained on the cutting edge of technology. Many companies financed training initiatives through the incentives of the High-Tech Program and training was conducted either in-house or by existing external training organizations.

The government also offered English training scholarships for IT specialists. Between 2008 and 2010, the government awarded 3,000 of these scholarships. In addition, the technical training institute DuocUC invited company directors of MNCs in the sector to join the board of its IT department to help focus curriculum to meet the industry needs. The institute established specific agreements to provide training for employees of GenShare, GE´s joint venture with UST Global in Chile. GenShare's facilities will be established on the DuocUC campus (Barriga, 2009).

Stage 2. Upgrading into high value ITO and KPO segments: Mid-2000s

Chile rapidly upgraded into the high-value ITO and KPO segments after 2006. These segments continue to become more specialized, and, in IT services, many Chilean teams are dedicated to providing solutions for highly complex and unique problems. Following the selection of the industry in 2007 as 1 of 8 key clusters to drive economic growth, renewed support from the government provided further impetus for expansion. That same year, the government established a Public-Private Strategic Council to manage the newly created Global Services Cluster. This council represents foreign service providers in Chile, industry associations, educational institutions, and representatives from the public sector, including the Ministry of Economy and the Ministry of Education (Castillo, 2008). CORFO continued its outreach program to attract firms in these high value-added segments, and in 2009 and 2010, it hosted several international conferences focused on the industry.

Workforce Development. As offshore services continued to evolve, the high-quality and limited supply in engineering forced rapid upgrading into high-value niche sectors. As firms realized they would be unable to compete with countries such as India on large scale projects, they used a relatively small number of high-quality engineers to develop expertise in specific areas of software development. The private sector focused on improving the innovative environment for its workforce by increasing global exposure through online forums with offices around the world, providing certification training in global platforms and software, and offering mentorship to improve leadership and teamwork development (Gomez et al., 2009). Furthermore, in many of the captive centers (for example, Citigroup, J.P.Morgan,

[21] In 1999, the Chilean government introduced the Digital Agenda to increase ICT readiness of the economy.

Equifax), upgrading was facilitated by transfer of knowledge through both formal and on-the-job training carried out by employees based in the developed world and India.

Government initiatives include its eagerness to tap into the mobile, professional workforce that was once captured by Silicon Valley. An open immigration policy has allowed for talent to move to Chile to help bridge the gap as new skills are developed locally (Schenkel & Knezovic, 2009). In 2010, the government created Start-Up Chile, an innovative program to attract entrepreneurs to set up IT companies in Chile.[22] If successful, this program will help build world-class domestic IT companies that few countries outside of India have been able to do. In addition, the offshore services industry became one of a limited number of priority sectors for national study abroad scholarships for technical training and internships administered by BecasChile.[23]

Upgrading into KPO activities has drawn principally on the large number of graduates in business administration and experienced professionals in the business community. As in India, private sector training in this segment includes GSD workshops provided in-house, as well as programs focused on leadership and management skills, with both internal and external trainers. The private sector firms that established service export operations—such as Evalueserve, leverage their e-learning tools, such as global teleconference calls lead by trainers based in India—and incorporate a high level of on-the-job training and mentoring provided by experienced managers who help their trainees work through projects on a step-by-step basis.

Stage 3. Vertical industry specialization: Mid 2000s

A third upgrading trajectory can be identified in the country's expansion into the provision of specialized engineering and R&D services. As offshoring of higher value services has expanded globally, Chile has tapped into its considerable expertise developed around its key productive sectors: mining, agriculture, forestry and aquiculture. This has been particularly successful in engineering services for the mining industry, which accounts for one-third of the country's offshore service exports (IDC Latin America, 2009b). The importance of engineering services to the offshore services industry is reflected in their special representation on the Public-Private Strategic Council.

Workforce Development. The private sector has focused on raising awareness of R&D as a career alternative, fostering collaboration with researchers from abroad and creating opportunities for technical and professional staff to work together to improve efficiencies (Campos & Schlechter, 2009). Upgrading has occurred most rapidly in the mining sector, where Chilean engineering had established a

[22] The program provides 90% of start-up costs, including employee salaries, as well as providing infrastructure and logistics support for a total of up to US$40,000 (CORFO, 2010).
[23] These scholarships are based principally on merit and career trajectories, with socioeconomic means accounting for just 10% of the evaluative process.

solid reputation worldwide. The country graduates approximately 5,000 engineers annually, the majority of whom are very highly qualified technically. With the commodity boom in 2007, firms based in Chile rapidly began exporting their know-how, particularly in copper extraction, to all parts of the world and service exports in engineering exploded. Existing expertise in agriculture and food production has also been leveraged recently with a number of captive R&D stations being established in the country. All of these sectors have been supported by the expansion of tertiary education led by private institutions,[24] which has increased the number of students pursuing postgraduate degrees.

Government workforce initiatives that promote upgrading into the sector include the establishment of the National Innovation System in 2007, which helped place R&D and innovation as high national priorities for investment and development. New scholarships to pursue Master's and doctoral degrees abroad increased the number of researchers available in these high value segments. The government also extended the High-Tech Incentives Program in 2009 to cover R&D functions in industry-specific sectors, and it awarded support to Monsanto, Pioneer and Seminis to establish R&D labs in northern Chile, focused on improving seed production. ***Table* 4.8** outlines these upgrading stages and the corresponding workforce development initiatives that took place in Chile.

[24] Between 1990 and 2006, enrollments in private independent universities increased by 900% and in state universities by 160%, while professional institutes also saw a rise in enrollments (Ministerio de Educación, 2009).This growth was largely the result of reforms carried out by the military government in the 1980s that saw a decline in government involvement in higher education and the creation of a private market higher education system.

Table 4.8. Chile: GVC Upgrading and Workforce Development Initiatives

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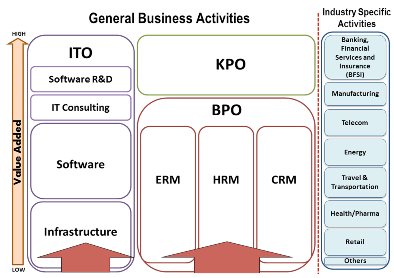
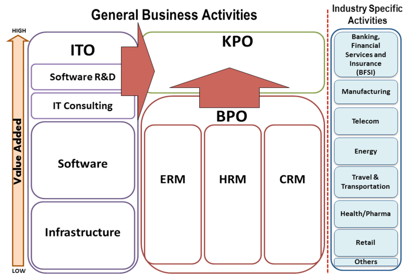
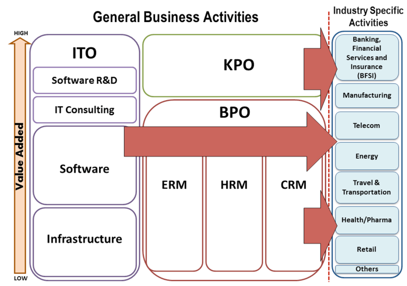
<tr><td> 
</td><td> 
</td><td> 
</td></tr>
<tr><th colspan="3">Private Sector Workforce Initiatives</th></tr>
<tr><td>• BPO sector draws on large number of new university students and provides 2–3 week induction workshops and training.
• IT companies draw on engineering talent and provide extensive certification training in Microsoft, Cisco, Sun Microsystems, etc.
• Firms offer English training.</td><td>• Firms leverage their e-learning platform for employees offering broad range of programs from English to accounting and leadership.</td><td>• Private sector focused on raising awareness of career alternatives in research and development.
• Engineering firms focused on improving management and leadership skills, English, and global exposure of employees.</td></tr>
<tr><td colspan="3">• The country's strong technical tertiary education system provides the industry with a small but qualified labor pool.</td></tr>
<tr><th colspan="3">Public Sector Workforce Initiatives</th></tr>
<tr><td rowspan="2">• Perfeccionamiento Intensivo en Inglés: English training scholarships offered for IT specialists. 3,000 scholarships provided in three years.
• BecasChile extends academic scholarships to technical programs and internships abroad for the global services industry.</td><td></td><td>• BecasChile Scholarship program launched to increase the number of highly skilled workers in the labor force in niche industries.
• HiTech program also extended to cover niche industries.</td></tr>
<tr><td colspan="2">• Start Up Chile launched to attract entrepreneurs in high-value export services sectors in both ITO and other niche sectors.
• National Innovation System established to promote innovation in all economic sectors facilitates growth in the sector.</td></tr>
<tr><td colspan="3">• HiTech training incentives (HT3) offers provide 50% of new employee on-the-job training costs (maximum: US$25,000 per employee).
• HiTech Program training incentives (HT6) offer 50% of training costs (maximum: US$100,000 per employee) for specialized training or recruiting
• Servicio Nacional de Compensación y Empleo offers income tax deductions for firms' training expenses (available to all companies in the country).</td></tr>
<tr><th colspan="3">Multisector Workforce Initiatives</th></tr>
<tr><td>• Increased interaction between private firms and technical institutions improves IT curriculum.
• GenShare and DuocUC sign an agreement for training of IT programmers in application development.</td><td></td><td>• Engineering firms represented on Public-Private Council of the Offshore Services Cluster and contribute to human capital development policy.</td></tr>
</table>

Source: Duke CGGC.

D. Low-Income Nations entering the Value Chain: Spanish-Speaking Central American and Caribbean Countries

A number of small, Spanish-speaking nations in Central America and the Caribbean have moved into offshore services, supported by investment agencies targeting the numerous benefits the industry has bestowed upon other developing countries. With small populations and only limited access to higher education, these small nations seem like unlikely candidates for entry into the industry. However, they have successfully leveraged their low costs and the "nearshore" platform concept of similar time zones and cultural and language compatibility to enter the offshore services as low-value service providers, principally for the Hispanic market in the United States.

Three country examples are analyzed in this section: (1) the Dominican Republic, (2) El Salvador and (3) Guatemala. These cases represent a clear entry path that has been emulated across the region and can be replicated in others—that is, entering into the call service business to cater primarily to the U.S. Hispanic market. Guatemala and the Dominican Republic have since upgraded within BPO services to provide not only Spanish, but also English-speaking call centers, finance and accounting services, HR outsourcing, and supply chain management to their clients.

The investment promotion agencies of all three countries continue to support upgrading into higher-value IT, animation, and KPO services through several initiatives, such as building dedicated science parks. However, to date, these initiatives have not moved the countries into new segments of the offshore services value chain, although they continue to provide and expand BPO functions (Dominican Republic Export and Investment Center, 2010; Gereffi & Fernandez-Stark, 2010). ***Table 4.9*** below provides an overview of the industry in these countries.

Table 4.9. The Offshore Services Industry in Dominican Republic, El Salvador, and Guatemala

		Dominican Republic	El Salvador	Guatemala
Entry Point		Call center, Spanish speaking	Call center, Spanish speaking	Call center, Spanish speaking
Highest Value Activity in 2010		BPO, finance & accounting, HRO	Contact center	BPO, finance & accounting
Industry Employment	**2006**	18,000	4,700	
	2008	22,000	6,800	6,500
	2010	25,000	9,000	9,000
Number of Offshore Centers in 2010		65	38	50

Sources: Casiano, 2010; Dominican Republic Export and Investment Center, 2010; ECLAC, 208; Frost & Sullivan, 2010; Gereffi et. Al, 2009; Invest in Guatemala, 2010; PROESA, 2010; World Bank, 2010. Also review of company websites of those with installed capacity in these countries including STREAM, Sykes, Teleperformance, Capgemini, and Transactel.

The Dominican Republic, which entered the industry in the early 2000s, has achieved significant growth with 25,000 employees in 65 centers, compared to 9,000 employees in 50 centers in Guatemala, while supply in El Salvador is slightly more consolidated. All countries currently project continued expansion, although it is clear that the 2008–2009 economic crisis did slow the installation of new centers.

Both the Dominican Republic and Guatemala place heavy emphasis on maintaining global standards for call centers. In Guatemala, to manage quality standards, new call center operations must pass an internal certification to become a member of the Call Center Commission (CCC). The CCC was established with government support to attract new talent to the industry, rather than competing for talent and driving up attrition rates (Cuevas, 2010; Nearshore Americas, 2010). In the Dominican Republic, where the industry has matured, the growing number of training institutes that serve the industry must be accredited by the Dominican Republic Call Center Association and face heavy competition from the U.S.-based Resource Center for Customer Service Professionals, which offers programs for both incoming agents (two weeks) and call center supervisors and managers (three days). The Dominican Republic claims to have more U.S.-certified agents than any other country in the region (Cuevas, 2010).

These three countries have created a "nearshore" platform that focuses on the United States. While they principally serve the Hispanic market, the use of "Spanglish" by clients requires call center agents to also understand English. English training is thus a leading challenge for workforce development. All three countries offer programs to improve English. The government carries out most of these initiatives; however, the private sectors of each country also provide ongoing English training for their employees. In the Dominican Republic, the government sponsors English as a Second Language programs (ECLAC, 2008); in 2010, the Guatemalan government offered 2,000 scholarships to study English to members of the Call Center Commission (George, 2010; Gereffi et al., 2009). El Salvador created the National English Center in 2006; in 2010, Access to Employment, a joint effort between the government and the U.S. Agency for International Development (USAID), was launched with the goal to train 8,000 students and workers over a 4-year period in English language and computer skills (Felperin, 2010). Both Guatemala and El Salvador are further integrating English into their primary and secondary school curricula (ECLAC, 2008; Gereffi et al., 2009). El Salvador has tried even more creative measures of enticing children of the diaspora in the United States back to the country to spend a year "Meeting their Roots" while working in call centers (Zappone, 2006).

Most companies in this region have also established training programs focused on improving customer service, such as the 100-hour finishing school for near-hires that Sykes, Teleperformance, and Transactel operate in El Salvador (Felperin, 2010). In all three countries, companies rely on enrolled university students for their workforce, although Guatemala is keen on promoting the industry as a long-

term career alternative. A large and rapidly growing Guatemalan firm, Transactel, is working to replicate the Indian corporate-university model, creating an in-house university in 2009. The university provides courses in English, accounting, and finance, as well as leadership and management. In 2010, 200 employees opted to pursue the in-house Bachelor's degree in Business, while a further 22 are enrolled in the company's MBA program (Sigloxxi.com Guatemala, 2010).

The relative success that these countries have achieved in entering the offshore services value chain highlights the potential of the nearshore model in facilitating entry for countries that would otherwise remain at the margins of the industry.

VII. Analysis and Discussion of the Country Cases

The GVC perspective provides a useful framework to understand how countries upgrade along the value chain, the kinds of institutional involvement needed to facilitate upgrading, and the most relevant workforce development practices. We summarize below our main findings for this complex, global industry that geographically spans both developed and developing nations.

A. Economic Upgrading

The preceding country cases reveal a clear pattern of entry for low-income countries into the offshore services value chain. The El Salvador, Guatemala, Honduras, and the Philippines all entered the industry through call centers, the lowest value segment of the value chain. This pattern has emerged as result of the limited conditions required for entry into the value chain at this stage: Available low-cost labor with a minimum of high school education, language, and cultural compatibility with clients and adequate telecommunications infrastructure.

In the Philippines, the large supply of American-style English speakers at highly competitive salaries gave the country a major advantage to enter the industry. Despite a significant time zone difference for serving the U.S. market, language and cultural compatibility gave the Philippines an edge over India, and the country is rapidly becoming a world leader in call center provision. The Spanish-speaking Central American and Caribbean countries studied (the Dominican Republic, El Salvador, and Guatemala) were not obvious candidates to enter the industry, as each country has a relatively small labor force of 3–4 million. However, they were able to compensate for this by using their language and cultural proximity to target a niche market of voice BPO services for the Hispanic market in the United States.

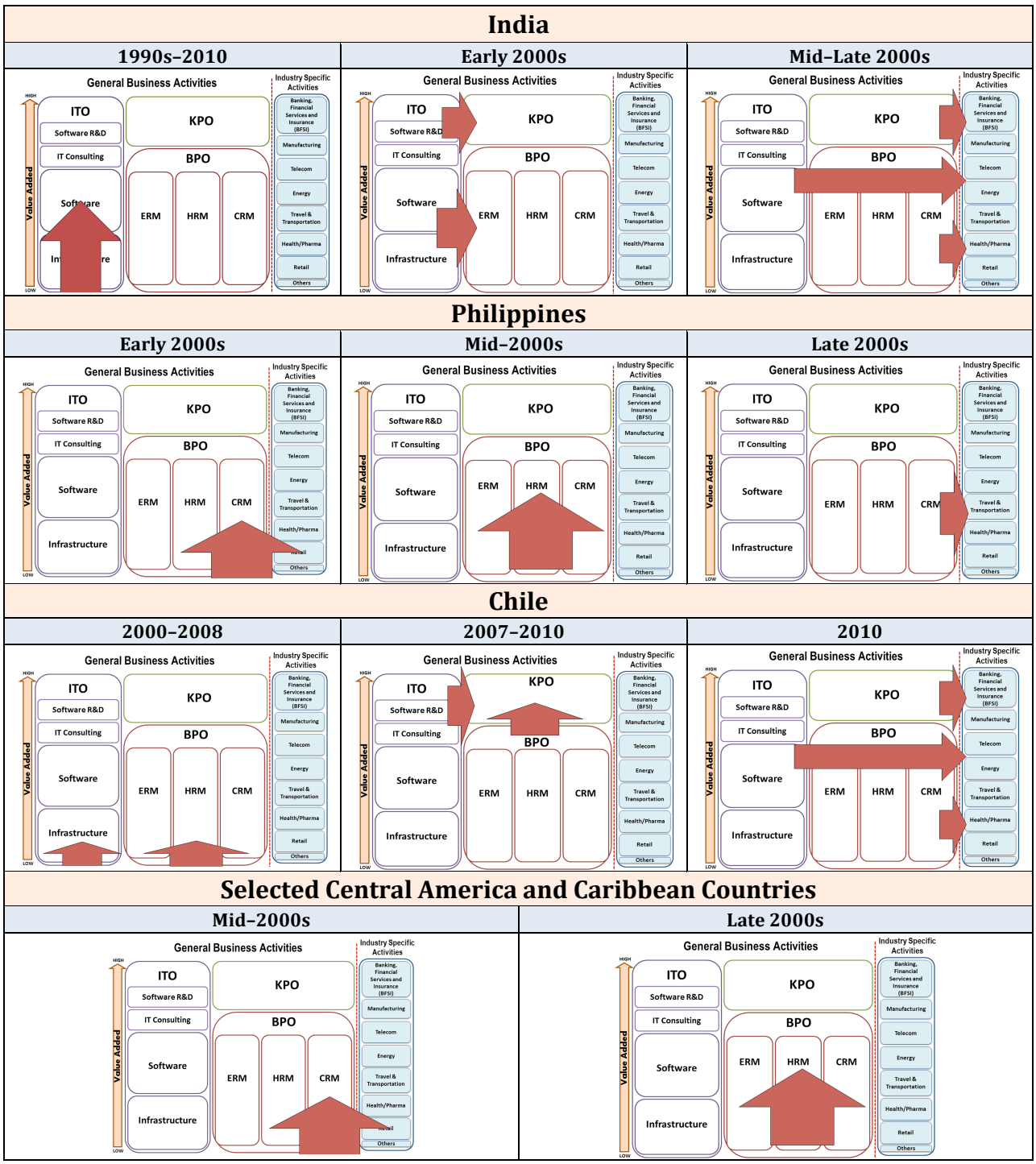
India, as the first mover in the industry, is an exception among low-income countries entering the GVC through ITO services. The presence of low-cost, experienced, and well-prepared IT workers with

connections to firms in the United States prior to the Y2K crisis was a critical factor in facilitating India's entry strategy. Chile's entry into ITO services in parallel to entry into some higher-value BPO activities, on the other hand, suggests that middle- to high-income countries[25] may follow distinct strategies for entry into this chain. As with India, a key factor facilitating Chile's entry into the ITO segment at the beginning of the 2000s was the presence of well-educated, experienced engineering talent. Many low-income developing countries, however, lack the engineering, mathematical, and science talent that India had accumulated prior to the 1990s. Thus, it is questionable whether this entry strategy is replicable for other low-income countries.

Although entry into the BPO segment appears to be the main alternative for developing countries to join the value chain, once a country has entered the industry, upgrading is nonlinear and several possible upgrading trajectories can be pursued. This is highlighted in ***Figure 4.5***, which provides a representation of the upgrading trajectories followed by the six countries analyzed. India entered the value chain first and upgraded through the ITO segment, followed by simultaneous upgrading into BPO and KPO services, and finally specialization in industry-specific segments. Chile's upgrading trajectory began with entry into the ITO and BPO segments, followed by upgrading into KPO and industry-specific services, while at the same time, moving out of BPO services. The Philippines upgraded and expanded mainly through BPO, with a particular industry-specific shift into medical transcription, while the countries in Central America and the Caribbean have not yet upgraded beyond BPO services.

[25] GDP per capita is below US$8,500 in all countries in the study, with the exception of Chile, which has seen the most success in higher value services. Countries with the highest employment in the segment, India and the Philippines, both have GDP per capita of less than US$3,500. See Table 4 for further comparisons.

Figure 4.5. GVC Upgrading Trajectories for Selected Developing Countries in the Offshore Services Global Value Chain



Note: For the full version of the offshore services GVC background diagram, see Figure 4.3.

Source: Duke CGGC.

Analysis of these cases confirms that the supply and quality of human capital and the capacity to improve the skills in the workforce are two key factors that govern the upgrading trajectories a country may pursue. Low-cost labor is key for the lower segments of the value chain, where labor arbitrage is important, while highly qualified workers are essential for access to the higher end of the value chain that favors competency and skill. The country cases provide several examples of this.

Upgrading trajectories into labor-intensive segments: India had a large supply of low-cost college graduates with a broad range of degrees not suitable for the IT industry that allowed the country to move into labor-intensive BPO operations. Efficient 2–3 week training programs by the private sector continued to increase the potential labor pool for these activities. Similarly, in Guatemala, the supply of college graduates eager to work in the BPO industry, combined with initiatives such as Transactel's university training, have facilitated the country's continued upgrading into higher-value BPO services, including finance and accounting.

Upgrading trajectories into knowledge-intensive segments: In Chile, the presence of a large number of engineers and the country's mining expertise facilitated the country's upgrading into offshore services for engineering in the mining sector. In the Philippines, the presence of a large number of under-employed medical practitioners gave the country a solid advantage to move into the medical transcription field. The government's scholarship programs in conjunction with private sector initiatives for U.S. medical transcriptionist certifications quickly opened the market for the Philippines to upgrade into this industry segment.

The importance of available skilled labor for upgrading is clear in the case of the Spanish-speaking Central American and Caribbean countries. In each of these countries, the government development agencies actively engaged in trying to attract firms in the ITO segment. However, due to the lack of personnel or educational institutions capable of developing the required workforce, these countries have not been able to advance very far along this trajectory.

B. Workforce Development

While national education systems have provided the basic skills necessary in all countries, the case studies show that the majority of workers in this industry require some level of specific training to fill the knowledge gap between the education systems in developing countries and the high-quality standards required to serve the global market. A number of different initiatives to feed the labor pipeline are thus required to sustain growth and drive upgrading. Although these initiatives differ across the range of activities included in the value chain, the most relevant for developing countries seeking to enter the market are as follows: the acquisition of English-language proficiency; job-specific training to meet market needs; the acquisition of appropriate international certifications; and skill training for "near hiring."

Tertiary education also plays a major role in upgrading into higher value activities that require formal education qualifications.

- **English-language skills training** has been central to all upgrading initiatives in the six countries studied. In the Philippines, ongoing classes for employees and joint initiatives with educational institutes to enhance language skills of university students have played an important role in all upgrading phases. In the Dominican Republic, Guatemala, and El Salvador, English training has been important despite serving principally Hispanic markets. Furthermore, for most segments of the value chain, English is key to upgrading the workforce, and many of the third-party providers operating in developing countries around the world offer online training and development resources in English only. English training is also necessary for upgrading into high-value services. These include significant collaborative interactions with global communities, of which English is the main language. For example, Chilean engineers in the mining industry are required to interact with clients and colleagues in Australia, Canada and South Africa, among other countries.
- **Job-specific or demand-driven training** refers to practices whereby job seekers are trained for a specific role within the organization. This type of training has provided a rapid and efficient solution to filling the skills gap. Widespread adoption of this practice for driving upgrading in the offshore services value chain emerged in India in response to the mismatch between the skills being provided by the tertiary education system and those demanded by the industry. Uncertainty regarding return on investment in training is reduced for both the firm and the employee, and thus both are willing to invest the required amount to drive skills development. In India, private-sector training programs at Infosys and Wipro expanded to the point where both companies today have large in-house universities for trainees. In Guatemala, Transactel has moved to copy this initiative, although its impact is yet to translate into country-wide upgrading. In Chile, government training subsidies awarded to companies in the offshore service sector incentivized companies to invest in the industry-specific training needed to meet their clients' demands. In the Philippines, in-house, on-the-job training and "finishing school" programs are used to prepare college graduates as BPO call center agents.
- **Certification training** has been an essential workforce development initiative for driving upgrading in developing countries (see ***Appendix 4.A.1***).[26] The agreement between the Medical Transcription Associations in the Philippines and in the United States to provide certifications for medical transcriptionists was vital for the former country to access the U.S.

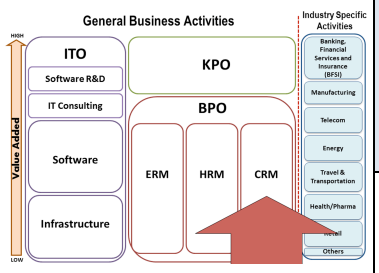
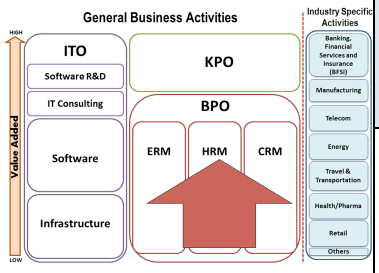
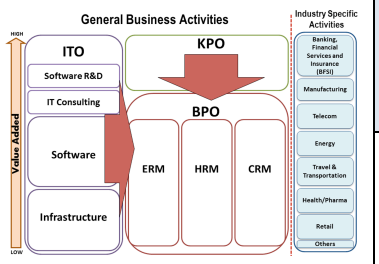
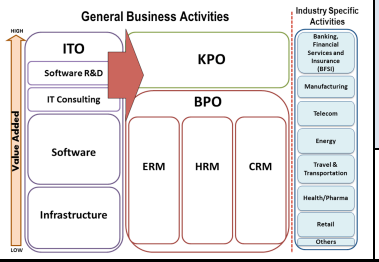
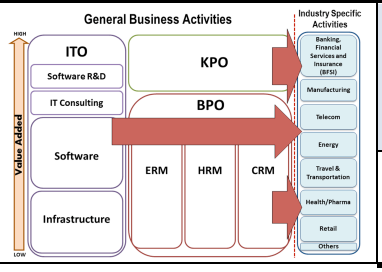
[26] Different segments of the value chain require different certifications and standards and are thus broadly referenced as "certifications" in the text. Appendix 4.A.1 provides a detailed review of most commonly used certifications and standards.

market. In Chile, IT firms moving into higher-value R&D services had to provide certification training in different software platforms to ensure their staff were on par with peers in developed countries, while expanding into BPO call center services required certifications in data and security protection. In the Dominican Republic, a growing number of training institutes accredited by the Dominican Republic Call Center Association provides certifications for both incoming agents and call center supervisors and managers to serve the U.S. market. The Dominican Republic claims to have more U.S. certified agents than any other country in the region, and the country employs more than twice as many agents as its neighbors, Guatemala, and El Salvador.

- **Training of near-hires** (i.e., potential employees for the sector that are rejected in the recruitment process due to specific shortcomings in their skills) has also become an important workforce development practice. This effort to capture talent that is not hired due to small skills gaps increases the available labor at different points of the value chain, while focusing training for specific job segments. This has been important to maintain the continued expansion of the Philippines BPO segment, which experienced average annual increase of 40% in employment generation between 2004 and 2008.

Table 4.10 outlines the most common workforce development strategies that have accompanied upgrading between stages of the value chain, drawing on both our country cases, as well as other countries that have successfully upgraded along the value chain.

Table 4.10. Workforce Development Implications and Upgrading in the Offshore Services Global Value Chain

	Diagram	Workforce Development Implications	
Entry into the Value Chain		Call centers hire people with high school diplomas or Bachelor's degrees. Further skills training is provided by the company or private training institutions.	
		Skills Preparation Short technical training	**Institutions** Private sector Government
Upgrading within the BPO Segment (Functional Upgrading)		Skills development is carried out by the private sector, either through in-house or contracted training programs. Further technical training is provided to existing and new employees.	
		Skills Preparation Short technical training Formal education (degree required)	**Institutions** Private sector Government Tertiary educational institutions
Full Package Services (Functional Expansion)		Expansive hiring process targets candidates with high school diploma and/or colleges graduates to work in the BPO segment. New hires must complete BPO training programs to guarantee quality services.	
		Skills Preparation Short technical training Formal education (degree required)	**Institutions** Private sector Government
Upgrading from ITO to KPO functions (Chain Upgrading)		Personnel with higher education qualifications recruited. Typically MBA graduates and workers with business experience. Workers must have sharp analytical skills.	
		Skills Preparation Formal education (degree required)	**Institutions** Tertiary educational institutions
Vertical Specialization (Chain Upgrading)		Companies hire experts to sustain their competitive advantage in specific areas. For example, a BPO company providing medical transcription services must hire nurses and doctors to ensure accurate service provision.	
		Skills Preparation Formal education (specialized degree required)	**Institutions** Tertiary educational institutions

Source: Duke CGGC.

In product[27] and process upgrading shifts, when offering new services or improving internal processes requires only short-term training that can be provided easily by the private sector, the firm is likely to train existing staff rather than hire already skilled staff due to high recruiting and induction training costs per new employee. However, in functional and chain upgrading, where firms wish to move into value chain segments or activities that require more in-depth education, they are more likely to pursue one of two strategies: (1) hiring already qualified employees or providing this formal education either through an in-house university, or (2) helping to finance university degrees for existing staff. This latter option helps employee retention by providing options for career development.

Indeed, the case studies reveal an interesting trend toward a preference for in-house training provision versus hiring external training organizations. In-house training is divided between formal training, on-the-job training, and online e-learning modules. The e-learning model offers both scale and flexibility, allowing employees to access the online system during down periods at work. The extensive use of internal resources is particularly prominent in India, where firms have developed internal training capacity to rapidly meet the demands of their growing clientele. A similar system has been adopted by Indian firms based in Chile, where firms leverage their relationships with their Indian offices to provide direct internal training from India to Chilean employees. In the Philippines, firms provide internal language classes for employees in addition to on-the-job training by supervisors.

Existing external training organizations were identified in those cases principally catering to English-language training, soft skills training, and training for certifications—that is, for highly portable skills that are required by a broad range of economic sectors. In Chile, for example, this skills training is provided through the existing workforce development framework, SENCE. The Dominican Republic was the only country studied where industry specific training institutions were operating. The failure of external training institutions to emerge as leaders in the offshore services workforce development sector is of particular interest and further research will be important to understand why this has occurred.

C. Institutions

The case studies also indicate that there are emerging differences in the roles that different institutions play in driving workforce development across the value chain. This is influenced by the existing educational and training frameworks in the countries in which the chain is embedded, the stage of the value chain in which firms in the country are located, the portability of the skills developed, and the commitment of the government to promoting growth in the industry.

[27] Product upgrading in this industry refers to offer a more sophisticated service. An example of product upgrading would be when a Spanish call center expands to offer English.

Language training: As economies become increasingly globalized, English language skills have grown in importance to facilitate international trade in goods and services across all economic sectors. This skill is highly portable and relevant for most jobs in the labor market for emerging economies. In the offshore services industry in particular, language skills are key in all stages of the value chain and in many countries, firms must still pay a premium for English-language speakers. It is thus not surprising that there are numerous public and multistakeholder initiatives to drive the development of language competencies in non-English speaking countries promoting the offshore services industry. In Chile, the government provided 3,000 scholarships for IT professionals of all levels of expertise to study English. El Salvador created a National English Center and, together with USAID, embarked on a project to provide language training for 8,000 people. Additionally, El Salvador, along with Guatemala, incorporated English into the primary and secondary school curriculum.

BPO: Given that the short-term training programs focus principally on internal company protocols and software (limited portability of skills)—while leveraging general communication, problem solving and decision-making skills are developed in high school and college—additional workforce development in the BPO segment is generally carried out internally by the private sector (e.g., Chile, Dominican Republic, and India). However, in the Philippines, due to the importance of the sector to the national economy and limited alternative employment opportunities, the public sector has also committed to driving workforce development for this sector. Existing government vocational training institutions were used to provide a "finishing school" for potential call center agents. State-funded scholarships play a key role in developing the labor pool for the industry, as well as financially supporting the private sector's National Competency test initiative.

ITO: The institutional approach to workforce development for the ITO segment is more complex, as the industry requires a depth of technical knowledge that must be accumulated through numerous training programs and ongoing education. Given the disparities in the quality and availability of technical and engineering education in the different countries studied, a variety of approaches can be identified. In India, as both the public and private educational institutions struggled to maintain high quality in the face of growing enrollment, the private sector was forced to take a highly proactive role in developing their workforces. Some companies almost bypass the tertiary education system completely by hiring second-year students and training them internally. Having created this internal capacity, Indian firms can now leverage this, allowing them to establish operations in countries that have more limited IT capacities. In Chile, the government had launched a country-wide digital program in the 1990s and showed clear commitment to continuing to develop this segment of the value chain, offering training subsidies to firms and fostering collaboration between technical educational institutions such as DuocUC and the industry through the Public-Private Strategic Council.

KPO and high value industry specific segments: Where the offshore services industry depends on high-level technical and analytical skills that are developed over time and rely on rigorous university education, multistakeholder initiatives appear to be the most prominent approach. Many of the skills required for this sector are portable across different economic sectors. Training for these skills can also strengthen general managerial competencies that are seen as important bottlenecks in emerging economies. As in the other segments of the offshore service value chain, however, there remain certain gaps between the education sector, and the industry that must be filled. In Chile, the government invited representation from the engineering sector to join the Public-Private Strategic Council to facilitate interaction with educational institutions. In the Philippines, government scholarships were provided to ramp up medical staff in private academies to become medical transcriptionists, thus providing the catalyst for upgrading into services for the health care industry. In India, the government-launched INSPIRE to raise awareness of long-term opportunities in research work to support the development of R&D initiatives in the country working with both educational institutions and the private sector to secure internships for participants of the program during their training.

Workforce development requires an active and innovative commitment to investments in education and training. While a detailed discussion of these changes is beyond the scope of this paper, two key trends emerge from the case studies that warrant analysis. First, there appears to be a strong shift away from a sole focus on education and training for this industry to firm-level provision, as firms compete for talent and offer increasingly attractive opportunities for further education to retain and attract qualified personnel. Second, government or public sector financing increasingly is provided through tax incentives and subsidies for private sector investments in workforce development. The meteoric rise of India's offshore service sector and the subsequent opportunities for developing countries to enter the global knowledge economy with higher wages, better jobs, and transfer of technology have proven to be highly attractive to developing countries. These promising spillover effects have encouraged governments to directly finance education and training for the sector.

Due to the fierce competition that has emerged between developing countries to serve as hosts for the large third-party providers and captive firms, numerous governments have launched initiatives to reduce both fixed and variable costs of doing business for offshore services firms, including minimizing labor training costs. These trends highlight the movement away from supply-driven workforce development to demand-driven workforce development. In both cases, the private sector determines the training to be provided.

D. New Global-Local Interactions

Lead firms in the offshore services GVC played a critical role in entry into the industry in all of the countries studied. These firms established captive centers (i.e., wholly owned subsidiaries) in developing countries to provide low-cost services to their operations in the developed world. With a significant deal of headquarter oversight, these firms facilitated the transfer to knowledge, implementing corporate training programs and streamlining services to meet their global standards. As a result of both staff turnover and the eventual sale of these captive centers to third-party providers, multinational lead firms left considerable know-how installed in these developing countries. By continuing to demand the highest levels of service controlled by certification processes such as the ISO standards (see ***Appendix 1*** for a summary of industry standards), many MNCs continue to facilitate workforce development and industry upgrading around the world.

In a number of the countries we studied, buyers drive upgrading by increasing the demand for services from their suppliers around the world, especially where there are large third-party providers installed. In the Spanish-speaking Central American and Caribbean countries, which began by providing Spanish incoming voice services, clients continued to request additional, slightly higher value services, such as outgoing calls, e-mail, and text messaging services, as well as more sophisticated BPO services. In India, increasing demand from clients has led Indian firms to expand into high value R&D services.

The modus operandi of the global third-party providers, and the Indian providers in particular, has been driving upgrading around the world. When these providers establish service centers, their training programs leverage the workforce development model that has been so well refined in India. Staff in other developing locations have access to tremendous online university resources and teleconference training from the main headquarters, and many senior managers are taken to India for months of onsite training. As these firms seek to expand into regional markets, such as Latin America, they are using these training systems to rapidly upgrade the capabilities of their regional suppliers.

The diffusion of the high standards required by leading third-party providers and their MNC clients have ensured the widespread adoption of professional certifications and industry standards in developing countries. Where providers meet both domestic and export demand, this has facilitated broader adoption of world-class standards in the domestic industry as local firms are required to raise their levels to compete with these large foreign firms. Standards have been clearly established on the low end of the value chain, in particular with respect to the growing awareness of security issue in the protection of personal data and call centers. In the higher segments of the value chain, global skills requirements in terms of English and a global perspective are important for upgrading, because there is

more interaction between the client and colleagues based abroad. Know-how, innovation, and specialized university education are more important as one advances along GVCs.

VIII. Conclusion

The offshore services industry provides an opportunity for developing countries by offering increased employment in service jobs, facilitating the entry of these countries into the knowledge economy, and providing access to new markets. Entry into the value chain is found to be relatively easy for low-income countries, requiring a reliable telecommunications infrastructure and language or cultural proximity to clients, but most importantly providing access to educated low cost labor. Entry into the lower segment of the value chain provides significant employment opportunities—even for small countries, such as those in the Caribbean—for many developing countries, which are also considered better jobs with competitive salaries. As a country moves into more sophisticated services that provide higher paying jobs, as well as increased export revenue, the level of knowledge transfer increases along with the technical skills required to perform these services.

In evaluating workforce development policy for this industry, policy makers must be keenly aware of the rapid evolution and highly competitive nature of offshore services and develop a broader understanding of how to engage in workforce development to facilitate upgrading. The skill level and qualifications of the existing and rising workforce determine the entry and upgrading potential of a host nation in this sector. The analysis highlights the shortcomings of traditional workforce development frameworks in developing countries to provide both the flexibility and quality to meet the skill levels required by the industry. It also shows, however, that institutional approaches that foster effective collaboration between the private, public, and educational sectors can help to narrow this gap to meet global service standards.

Appendix 4.A.1: Standards in ITO

Industry Quality Standards

The offshore services industry has not yet adopted any official "legal" standards; however, certain voluntary standards or best practices models have been encouraged to enhance the credibility of superior services of a third-party provider in the global market. The most popular quality standards in this industry are:

ITO: Software Development

- **CMMI.** Capability Maturity Model Integration (CMMI) is a process improvement approach that helps organizations improve their performance. CMMI was developed at Carnegie Mellon, Software Engineering Institute. CMMI focuses in the three following areas:
    - CMMI for Development (CMMI-DEV): Product and service development;
    - CMMI for Services (CMMI-SVC): Service establishment, management and delivery; and
    - CMMI for Acquisition (CMMI-ACQ): Product and service acquisition.

For example, Accenture has certified their operations is these developing countries: Argentina, Brazil, China, Czech Republic, India, Latvia, Mauritius, Mexico, the Philippines, and Slovakia, among others (Software Engineering Institute-Carnegie Mellon, 2010).

- **eSCM-SP.** The eSourcing Capability Model (eSCM) is a framework developed by ITSqc at Carnegie Mellon University designed to allow service providers to continue their organizational improvement (ITSQc, 2010).
- **ISO 9001-2000/2008**. This certification applies to specific requirements for quality management systems. This certification aims to enhance customer satisfaction through the effective application of the ISO system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements. Developing countries are leading the growth in certification.

Table 4.A.1 shows an overview of the growth rate of ISO 9001:2000/20008 certifications around the world.

Table 4.A.1 Growth Rate ISO 9001:2000/2008 Certifications, Worldwide

	Dec. 2005	Dec. 2006	Dec. 2007
North America	19.4%	3.0%	-22.5%
Europe (including CEE)	17.6%	9.8%	4.2%
Australia/ New Zealand	-2.6%	3.1%	-57.6%
Africa/West Asia	53.7%	47.8%	10.5%
Central and South America	32.2%	30.6%	33.9%
Far East	11.8%	21.8%	14.8%

Source: ISO.

- **ISO/IEC 27001:2005** is designed to ensure the selection of adequate and proportionate security controls that protect information assets and give confidence to interested parties. In recent years, India has been awarded the second highest number of certifications annually after Japan. (ISO, 2009).
- **ISO/IEC 20000-1:2005** promotes the adoption of an integrated process approach to effectively deliver managed services to meet business and customer requirements. For an organization to function effectively, it has to identify and manage numerous linked activities. Coordinated integration and implementation of the service management processes provides ongoing control, greater efficiency and opportunities for continual improvement.

Appendix 4.A.2. Selected Career Trajectories in the Offshore Services Value Chain

Table 4.A.2 provides an overview of how the accumulation of these skills can potentially advance employee career trajectories in the industry.

Table 4.A.2. Selected Career Trajectories in the Offshore Services Global Value Chain

Advanced ↑ Entry

ITO		BPO		KPO	
Project manager software development	Master's degree + certifications + interpersonal skills			Business/account manager (representing client)	MBA+ interpersonal skills+ experience
Team leader	Bachelor's degree + certification + interpersonal skills	Team Leader	Bachelor's degree + company certification skills + interpersonal skills	Consultant	MBA+ interpersonal skills+ experience
Software engineer/ Developer/Programmer	Bachelor's degree + certifications	Project manager	Bachelor's degree + company certification skills + interpersonal skills	Senior or lead Business Analyst	MBA + interpersonal skills
Test software	Associate's degree plus certifications	Supervisor	Associate degree + interpersonal skills	Business Analyst	MBA
Technical writing	High school diploma/Associate's degree	Trainee	High school diploma/ Associate degree	Junior business analyst	Bachelor's degree
Position	**Education/Skills**	**Position**	**Education/Skills**	**Position**	**Education/Skills**
Software Development		**Call Center Agent**		**Business Analyst**	

Note: Interpersonal skills include those important nontechnical skills that are required in all human interactions. These include personal qualities such as emotional intelligence, perseverance, motivation, self-discipline, assertiveness and creativity, and social skills such as the ability to work well in a team, empathy, effective communication, conflict management and leadership (Jordan, 2009).

Source: Duke CGGC.

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CHAPTER 5

The Tourism Global Value Chain

ECONOMIC UPGRADING AND WORKFORCE DEVELOPMENT

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Acronyms

ACCSTP	ASEAN Common Competency Standard for Tourism Professionals
ACOT	Asociación Costarricense de Operadores de Turismo (Costa Rica)
ACOPROT	Asociación Costarricense de Profesionales de Turismo (Costa Rica)
ACTUAR	Association of Community-Based Tourism (Costa Rica)
APL	Acknowledgement Program for Laborer
ASEAN	Association of Southeast Asian Nations
CARIBCERT	Caribbean Hotel & Tourism Association Regional Certification System
CBI	Centre for the Promotion of Imports from Developing Countries (EU)
COOPRENA	Cooperative Consortium National Ecotourism Network (Costa Rica)
DUKE CGGC	Duke University, Center on Globalization, Governance and Competitiveness
DFID	Department for International Development (United Kingdom)
ECP	Export Coaching Program
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GDS	Global Distribution System
GWU	George Washington University
ICT	Instituto Costarricense de Turismo (Costa Rica)
IDB	Inter-American Development Bank
ILO	International Labor Organization
INA	Instituto Nacional de Aprendizaje (Costa Rica)
IT	Information Technology
JAU	Jordan Applied University College of Hospitality
JITOA	Jordan Inbound Tour Operator Association
JTB	Jordan Tourism Board
LDC	Least Developed Country
MICE	Meetings, Incentives, Conventions and Exhibitions
MIF	Multilateral Investment Fund
MNC	Multinational Corporation
NGO	Nongovernmental Organization
TITC	Tourism Information Technology Center (Vietnam)
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNWTO	United Nations World Tourism Organization
USAID	United States Agency for International Development
VCTB	Vietnam Tourism Certificate Board
VNA	Vietnam Airlines
VNAT	Vietnam National Administration of Tourism
VTET	Vocational and Technical Education and Training

I. Introduction

The global value chain (GVC) perspective will be used to examine the role of workforce development initiatives in several developing countries that participate in international tourism. This industry has grown substantially over the last 10 years, and by 2009, international tourism generated $852 billion in export earnings and employed 235 million workers around the world (World Travel and Tourism Council, 2010a).[1] Indeed, tourism has become an essential and fast-growing economic activity in low and middle income nations, and today it accounts for about 45% of service exports from the developing world. It is an industry that harnesses natural assets, and incorporates regions and localities with limited development options and provides an important alternative to extractive industries.

Growth of international tourism can be attributed to factors such as the declining cost of travel, improvements in travel technologies that shorten time in transit, and the information technology (IT) revolution that allows consumers to easily learn about potential new destinations. While challenges persist, arising from the industry's seasonal nature and its sensitivity to high transportation costs, concerns about safety, and fluctuating tourism preferences, its global footprint has substantially expanded. Today, tourism provides important employment opportunities for many developing countries in a wide range of services, from accommodation to transportation, food services, and guiding.

At the heart of international tourism is the delivery of a service that is based on international customer service expectations (Kusluvan, 2003), and the industry relies heavily on the value added by a variety of interpersonal skills[2] (Burns, 1997). Although the importance of human capital in tourism is well known,[3] many developing countries struggle to develop their workforce to meet the high demands of international travelers due to weak educational institutions, a shortage of adequate trainers, and "only a vague sense of what the provision of services entails" (Liu & Wall, 2005, p. 700). Furthermore, low living standards and pervasive poverty in many destination countries highlight the international disparities in service amenities, cultural norms and professionalization.

Workforce development programs can help service providers in developing countries to understand these needs and to develop the necessary skills to serve them. The United Nations World Tourism Organization (UNWTO) supports strategic investments in workforce development by the public and private

[1] This is compared with 79 million workers and US$571 billion in exports in 2000. The United Nations World Tourism Organization (UNWTO) forecasts that the sector will consist of approximately 296 million jobs by 2019 (ILO, 2010).
[2] Soft skills are important nontechnical skills that are required in all human interactions. These include personal qualities (such as emotional intelligence, perseverance, motivation, self-discipline, assertiveness and creativity), and social skills (such as the ability to work on a team, empathy, effective communication, conflict management, and leadership).
[3] Human capital has been found to be a key determinant of value creation, competitiveness and success in service exports from developing countries. Saez & Goswami (2010) find positive and significant correlation between human capital and service exports after controlling for institutional variables and electronic infrastructure. Shingal (2010) finds that human capital is one of three key variables that has the biggest impact on bilateral service trade.

sectors that facilitate economic upgrading. This study uses selected developing countries to illustrate how national and subnational institutions and actors can respond to globalization, work effectively with global lead firms to understand which new skills are needed, and establish appropriate criteria and objectives for effective public-private partnerships.

The report is structured as follows. First, we review the global organization of the tourism industry. Second, we map the different segments of the tourism value chain and indicate how developing countries can move or "upgrade" into higher value activities. Third, we outline workforce skill requirements for the industry. Fourth, we analyze the tourism industry in three developing countries— Costa Rica, Jordan and Vietnam— and identify key workforce development practices pursued in each to drive upgrading. Finally, we summarize our main conclusions in terms of economic upgrading, workforce development, the role of institutions, and the impact of global–local interactions.

II. Global Organization of the Industry

We adopt the comprehensive definition of tourism presented by Judd (2006), quoting Debbage and Danials (1998): "tourism is no single product rather a wide range of products and services that interact to provide an opportunity to fulfill a tourist experience that comprises both tangible parts (e.g., hotel, restaurant, or air carrier) and intangible parts (e.g., sunset, scenery, mood)" (Judd, 2006, p. 325). Natural assets in destinations are used to promote particular tourism products. The broadest tourism types are sun, sand and surf, environment, cultural, medical, and business.[4] Reflecting this wide range of experiences in numerous destinations, the global organization of the tourism sector is highly complex.[5] We examine the sector from the top down to understand the relationships between global and local actors.

International airline carriers, cruise lines, global tour operators, and multinational hotel brands are the lead firms in the tourism GVC. These firms from developed countries play a key role in shaping tourism trends through strong marketing campaigns and close contact with the consumer. They cater to the travel preferences of consumers from high end to budget travel, and they create transnational "linkages" with tourism destinations in a variety of ownership, alliances, and outsourcing strategies.[6] When top-tier tourism companies move into new destinations, they consider factors such as level of economic development in the country, the policy and regulatory environment, human resources, infrastructure level, and market demand.

[4] Specific forms are embedded in these types, e.g., environmental can include nature-based, adventure, and safari. Cultural tourism can be religious, indigenous, or historic. Most countries develop multiple tourism types and products.
[5] This study seeks to understand how insertion at a global level affects tourism provision in developing countries; thus, we concentrate on the flow of all tourists from developed to developing countries rather than on domestic tourism.
[6] Linkages are the connections between firms along the global value chain.

Many tourists from developed countries choose to mitigate the risk and uncertainty of international travel by working with these global firms for their trip planning services. Traditionally, travel agents were important channels for providing information, bundling tourism products, and confirming and paying for reservations[7] (Buhalis, 2001, p. 8). In the process, global distribution systems (GDS), such as Sabre and Travelport, became essential. These systems provide a shared platform for information regarding airline, hotel and tour scheduling, and prices; and travel agents can reserve and book directly in real time. Being listed on these GDS platforms is a key step for countries to gain access to the global tourism market.[8]

IT, however, has altered the relationship between GDS firms and suppliers in developing countries. On one hand, by allowing service providers to develop a web presence and handle online reservations, the IT revolution has given them more direct access to tourists; on the other hand, it fueled consolidation among these larger distributors. GDS firms sought to offset direct in-country bookings by setting up virtual travel agencies. For example, Sabre created Travelocity in 1996; and by 2000, it had captured 35% of online gross bookings (Raventos, 2006, p. 381). In 1996, Microsoft joined forces with WorldSpan, one of Travelport's brands, to create Expedia.com. Travelocity, Expedia, and hotel-owned Orbitz are now emerging as new virtual middlemen between outbound tourists and destinations. These systems have helped to lower the costs of travel programs by streamlining sales, reaching independent and geographically dispersed buyers, and allowing for last minute-purchases.

Within developing countries, incoming agents or national tour operators play the lead roles in destination management. Incoming agents are chosen by global tour operators based on their ability to meet coordination, logistics, insurance, and product offering needs. Hotels in developing countries have excursion operators and tour guide suppliers with whom they work directly, and they usually require their providers to have insurance.

Unlike in many other global industries, there are still no industry-wide international standards for tourism, and the market continues to be characterized by a range of initiatives designed to signal quality to the market. International and national firms alike, including hotels, airlines, and tour operators, operate under their own standards. International associations have worked on establishing standards, although these are not mandatory or are only regional in scope. The closest certification scheme is the Star Rating System that rates hotels from a zero to five, but there is no global universal hotel rating system. Each country rates its national hotels and consumers have complained about the fickle rating system that fails to provide an adequate indication of quality.

[7] The independent selection route allows developing countries to capture more economic gains by pushing out global middlemen; however, global intermediary firms provide the consistency, quality of service, marketing strength, and tourist access that many developing countries lack.
[8] Often the cost of joining these systems, combined with the technological infrastructure required create significant barriers to using these GDS systems for smaller firms in developing countries (Benavides, 2002).

Developing Countries in Tourism

Global tourism demand has increased and new developing countries are entering the industry. The United States saw an increase in outbound tourism of 12% between 2000 and 2008. In 2007, Germany, the United Kingdom, and the United States together accounted for over 220 million outbound travelers (Euromonitor International, 2008). With growth in middle class populations in emerging economies like China, India, and South Africa, the number of international tourists is likely to continue to increase. Developing countries have sought to meet the expansion of tourism by promoting themselves as attractive getaway destinations, and international development organizations like the World Bank, UK Department for International Development (DFID), United States Agency for International Development (USAID) , and the Asian Development Bank have begun to advocate harnessing tourism as a form of pro-poor development and a conduit to achieve the Millennium Development Goals.

Tourism has grown substantially in many developing countries, and by 2008, it accounted for about 45% of service exports (UNWTO, 2010). Table 1 compares the increase in international visitors in 15 of the world's least developed countries (LDCs), as well as the four large emerging economies of Brazil, China, India, and South Africa between 1995 and 2008. Of the LDCs, Cambodia, Vietnam, and Kenya lead the group in international visitor arrivals (***Table 5.1***).

Table 5.1. International Visitor Arrivals ('000 people)

Emerging Economies	1995	2000	2005	2008
Brazil	1,991	5,313	5,358	5,050
China	46,387	83,444	120,292	130,027
India	2,143	2,677	4,038	5,492
South Africa	4,684	6,001	7,518	9,729
LDCs				
Benin	580	1,068	960	999
Cambodia	220	466	1,422	2,125
Cape Verde	28	115	198	285
Ethiopia	103	136	227	330
Gambia	45	79	460	643
Kenya	974	1,037	1,675	2,016
Lesotho	209	302	304	293
Malawi	192	254	438	742
Mali	42	86	143	190
Nepal	363	464	375	500
Senegal	268	400	779	971
Tanzania	295	501	613	770
Uganda	160	193	468	844
Vanuatu	82	106	126	197
Vietnam	1,351	2,140	3,468	4,254

Source: World Travel and Tourism Council, 2010a.

The capacity of a country to capture the gains from tourism growth depends on the linkages both within the local industry and the global industry.[9] Linkages are spurred by the development level of the industry, including the existence of domestic tourism; and the ability of governments to plan for tourism growth by facilitating institutions, infrastructure, and management capabilities, and global firms (e.g., airlines, tour operators, travel agents, and hotels) that bring international tourists to the destinations and/or open a business locally. In absence of these strong linkages, a destination becomes merely "a place" taking advantage of its natural assets but providing little in terms of domestic firm ownership, supplier connections, and workforce growth. The International Labor Organization (ILO) argues that for developing countries to benefit from foreign direct investment (FDI) in tourism, a comprehensive legislative framework is needed that fosters higher local participation (ILO, 2010, p. 20). Over the past decade, national governments with the aid of nongovernmental organizations (NGOs) and international multilateral agencies have become more proactive in creating comprehensive tourism development strategies to drive growth and upgrading**.**

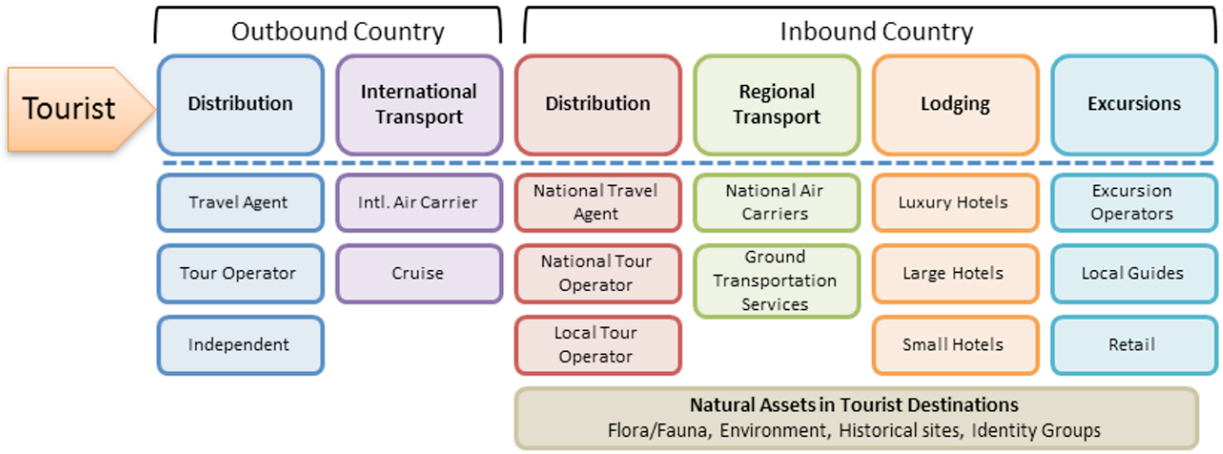
III. The Tourism Global Value Chain

The tourism GVC presented in Figure 1 uses the international tourist as a focal point.[10] Following a tourist "footprint" in a value chain details the steps and the firms a tourist interacts with from the moment they decide to take a trip to the completion of their international journey. The cumulative activities together represent tourism in its entirety. While tourists may choose to bypass some activities, ***Figure 5.1*** is a broad classification schema. Some tourism businesses such as food service, financial services, and computer reservation systems, are not visually represented, but they are included via proxy in the distribution and excursion segments. Food service can be classified as retail or broadly as an excursion activity; and many financial service credit card companies and GDSs operate their own travel agencies.

[9] There are backward linkages between specific good suppliers (such as artisan crafts, food, etc.) for firms like hotels, and there are forward distribution linkages for all tourism firms. There can also be horizontal linkages between firms in the same value chain segment (e.g., excursion providers) who recommend competing and complimentary providers.

[10] Tourism is a complex industry to visualize because services are "invisible" and "eclectic," combining multiple sectors that can have their own value chains (Clancy, 2008). Placing tourists at the center of the chain acknowledges how consumption and production take place simultaneously.

Figure 5.1. The Tourism Global Value Chain



Source: Christian, 2010.

Rather than being one of the last stages, as in production-based value chains, **distribution** is the first segment. The first thing tourists do is to decide how they will purchase their tourism products or the components of their trip. Travel agents and tour operators are the main distribution intermediaries. Commonly, travel agents act as the retail outlet for tourism products (transportation, lodging, and excursions), and tour operators are wholesalers. Tour operators purchase blocks of airline seats, hotel rooms, and excursion activities and bundle these segments in various package arrangements. The packaged product is then sold via a travel agent or directly. Tourists can bypass intermediaries and book their trip components directly.

The next stage is **international transport**. The most common international transport mode is international air carriers, but cruise services are a popular option as well. Rail transport, although common in Europe and parts of Asia, is typically not a long-haul option. International distribution and transport are based in the outbound countries, but there are **regional distribution and transport** segments based in the inbound country. Inbound countries have their own distribution actors and often work directly with international distribution firms. For example, national tour operators organize and execute the destination components of a global tour operator's package tour. When this is the case, national tour operators meet tourists at the airport and escort them to their destination activities.

While in the destination country, tourists engage in a number of events that include local transportation (air or ground), lodging, and excursions. **Lodging** options range across the luxury and size scale. **Excursions** are the local activities representative of the tourism product and the **natural assets** of the destination. For beach tourism, the activities might include snorkeling, sailing, or surfing; whereas for

cultural tourism, activities may include a guided tour around monuments or a wine tour. Many excursion activities are sold by operators and executed by local guides who take on the role of area experts. Retail may also be considered as part of excursions such as visiting local bazaars or artisanal centers.

Except for international airfare, most segments of the tourism value chain are characterized by a diverse array of organizational, ownership, and operational business structures. Large corporations coexist with small and medium enterprises and microbusinesses. International tourism demands a sophisticated level of coordination and marketing that reaches tourists based in numerous countries and regions. Firms that have coordination capabilities and marketing prowess carry the most value. International distribution actors, and hotels based in destinations that are managed by foreign brands, typically hold these functions.

IV. Economic Upgrading in the Tourism Global Value Chain

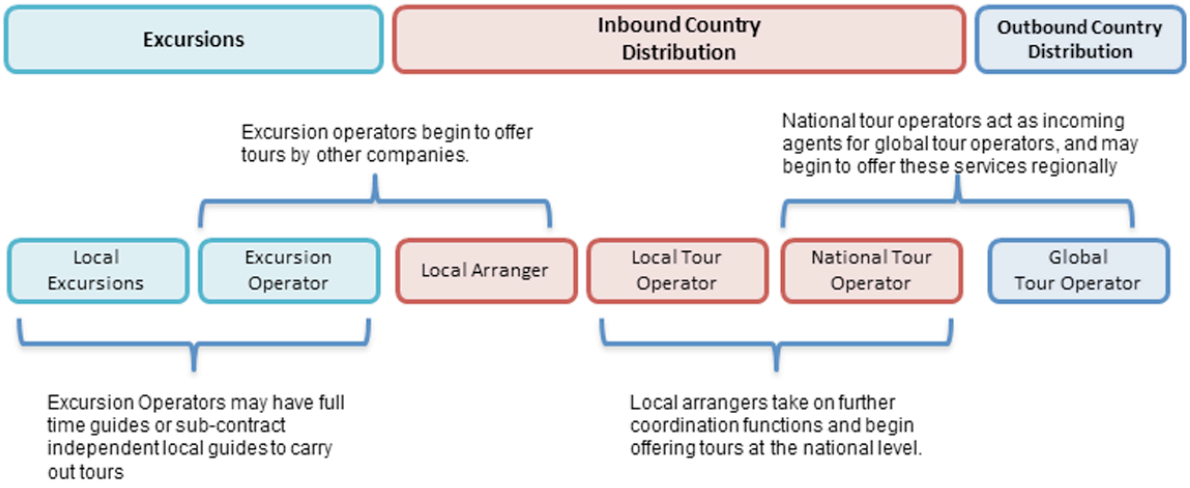
In this section, we examine how upgrading occurs within the tourism GVC. Upgrading refers to "a process of improving the ability of a firm or an economy to move to a more profitable and/or technologically sophisticated and skill-intensive economic niche" (Gereffi, 1999, p. 51). Depending on the level of analysis, upgrading can be examined from the country, firm, and potentially individual level. Humphrey and Schmitz (2002) identify four types of industrial upgrading: *product* (producing higher-value products); *process* (incorporating more sophisticated technologies into production); *functional* (moving to higher-value functions); and *intersectoral* (leveraging expertise gained in one industrial sector to enter a new sector.)

Because tourism composes numerous and diverse niches, there is no single trajectory or pattern to upgrading as might be the case in some manufacturing industries. The multisectoral nature of tourism allows for multiple paths to be pursued with one form of upgrading happening simultaneously with another. Some avenues are more accessible based on the global arrangement of the sector and local capabilities. Domestic policies, access to international markets via tour operators and travel agents, human capital, and a strong international image are all factors determining developing country tourism success.

- **Entry into the value chain** occurs when developing countries become a destination for international tourists. This is commonly spearheaded by global firms such as air carriers, tour operators, and hotels that coordinate and control the tourist's experiences by arranging and executing travel, and by being destination service providers. Entry enables firms or individuals that were not previously in the industry to join. For example, a local food vendor can serve food for international tourists or a firm that sold a product to a nontourist clientele can now become a supplier to a tourist hotel.

- **Upgrading through the tour operator segment** is the strongest example of functional upgrading in the industry. This upgrading occurs when tour operators take on increasingly complex operations (***Figure 5.2***). At the lowest stage of tour operators, there are local guides who typically work as independent contractors. Excursion operators include a local guide, but they also have the capability to open a business for a particular tourist activity like bike rentals or safari excursions. Excursion operators upgrade to become local arrangers when they begin to (1) sell the tours of other excursion operators and (2) arrange regional travel for their excursion clients. The last two stages are when tour firms gain national coordination and arrangement capabilities. As a result, tour firms may work directly as inbound country distribution agents or ground operators for global tour operators, and then become a "global" tour operator themselves by creating and executing tour packages to other countries. The last two segments usually only occur for firms in urban or capital cities.

Figure 5.2. Functional Upgrading in the Tour Operator Segment



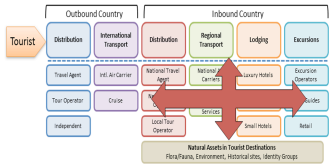
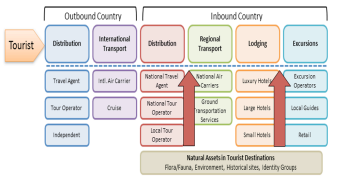
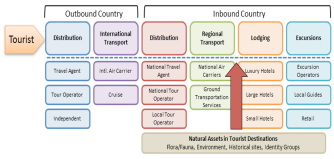
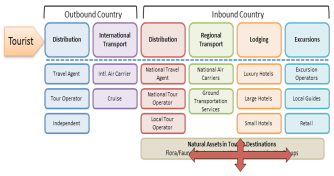
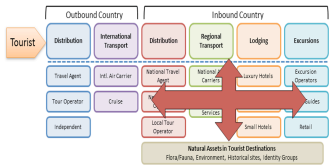
Source: Duke CGGC.

- Upgrading in the hotel segment occurs when hotels move to a higher level of service, luxury, or size. This form of product upgrading can take on functional traits if hotels that previously did not have the ability to provide food or transport services acquire these capabilities. The hotel segment in developing countries is the most bifurcated in terms of ownership and scope. Some developing countries enter at the highest stage of hotel upgrading via multinational hotel brands that build, acquire, or take on management of a local hotel property. Local ownership typically entails budget or small accommodations. Some developing countries, like India, however, have been able to develop locally owned and managed luxury hotel brands.

- Adding one or more tourism type(s) such as adventure, event, or medical tourism, is a common form of product upgrading in the industry. Tourism centered on the sun, sand, and surf variety is typically seen as a key development path. Many countries attempt to develop multiple tourism types, but one form often develops faster or stronger than another.
- Tourism firms adopting IT business functions is a process upgrading strategy for developing countries. IT allows companies to directly market their services, cut out global intermediaries, and efficiently handle their own reservations. Creating an Internet website is a common route for developing country firms that do not have computerized reservation capabilities. National marketing boards in developing countries are adding reservation capabilities in addition to listing local offerings. IT adoption may be complicated for developing country firms by unreliable power supplies, weak infrastructure, and high costs (ILO, 2010).

Table 5.2 presents examples of upgrading trajectories in the tourism GVC in developing countries.

Table 5.2. Upgrading Trajectories in the Tourism Global Value Chain

	Diagram	Description
Entry into the Value Chain		• Countries become a destination for incoming tourists. • Firms or individuals in another industry shift to tourism. • Firms that catered to domestic tourism add international tourism.
Upgrading within the Tour Operator Segment (Functional Upgrading)		• Firms move along the tour operator segment. • The lowest segment is as a guide, upgrading to excursion operator, local arranger or national arranger for an incoming agent
Upgrading within the Hotel Segment (Product Upgrading)		• Countries offer larger and higher quality hotels • Hotel that started as small or budget accommodation upgrades in size and/or luxury. • Local hotel "brand" is created/expanded into a chain or a hotel management company.
Adding Tourism Types (Product Upgrading)		• Countries expand offerings by developing tourism in different regions or by cultivating a particular tourism product such as "sea, sand, and sun" or "medical" tourism.
Adopting ICT (Process Upgrading)		• Firms, country marketing boards adopt IT such as website design and computer reservation systems.

Source: Duke CGGC.

V. Workforce Development in the Tourism Global Value Chain

The tourism sector is labor intensive, and in 2010, global tourism accounted for more than 235 million jobs (ILO, 2010).[11] These jobs cover a wide range of positions that vary in skills and specializations. Tourism employs people in subsector industries, including tour operators, travel agencies, transportation, accommodation, food and beverage, and tourist sites. In many developing countries, tourism jobs are desired over those in traditional sectors such as agriculture and manufacturing although many of the available jobs are in the low-end skill range—groundskeepers, housekeeping, food service—and less in managerial and other senior positions, which are often held by expatriates.[12]

Table 5.3 provides an overview of the most important job profiles in each segment of the value chain.

[11] The UNWTO forecasts that the sector will consist of approximately 296 million jobs by 2019 (ILO, 2010). Each job in the sector indirectly generates about 1.5 additional jobs in the related economy (ILO, 2010). In the hotel sector alone, the standard industry ratio is 1.5 staff per room (Siyaha, 2007; USAID et al., 2008), and thus increases in the number of hotel rooms in the industry provides significant employment.
[12] This is most apparent in the hotel segment.

Table 5.3. Job Profiles in the Tourism Global Value Chain

Position	Job Description	Formal Education Requirements	Training/ Experience	Skill level
Distribution				
Local Arranger	Sells and arranges tours in local destinations and acts as a broker between guides, excursion operators, and tourists.	High school diploma/technical education	Management and soft skills	
Travel Agent	Promotes tourism destinations; plans, organizes and sells tour packages and provides general travel information and assistance. Must be licensed/certified.	Certification program, technical education	Technical training	
Tour Operator	Designs, plans, and arranges package tours, negotiates rates with suppliers, and sells travel products. Most are licensed/certified.	Technical certification/ Bachelor's degree for owner	Internships for support staff Management and soft skills.	
Transportation				
Transport drivers	Responsible for transporting tourists to and from airports, hotels, and sites. Most are licensed.	No formal education required, licenses, insurance	On-the-job training	
Airline Agents	Responsible for sales and customer service including tickets, reservations, check-in, missing baggage and cargo shipments.	High school diploma/no formal education	On-the-job training	
Airport/ Airline Maintenance	Responsible for facilities and equipment maintenance, cleanliness, and safety.	Specialized certificates and licenses	Technical training, internships	
Airport Manager	Plans, organizes, directs, controls, and evaluates the operations of facilities. Oversees safety and security systems and procedures. Hires and trains staff.	Business-related Bachelor's degree	Management and technical training	
Pilots	Responsible for air transportation. Requires aeronautics specialties, safety procedures, weather system management, etc. Must be licensed.	Specialized flight schools and licenses, further airline training	Flight hours, specialized courses	
Lodging				
House-keeping	Responsible for cleanliness, room preparations, laundry, inventory, and maintainance.	No formal education required; literacy and numeracy skills	On-the-job training	
Food and beverage	Plans, organizes, and operates hotel room service, bar, restaurants and/ or other food and beverage services.	Technical certificate or diploma program	On-the-job training and internships	
Front Office	Responsible for front desk operations (check in and check out), customer feedback, and customer assistance; and manages reservations and room assignment.	Technical diploma or certificate program	Technical and on-the-job traing and internships	
Management	Responsible for hotel operations, budgets, supervising quality standards, hiring and training staff, enforcing hotel policies, and monitoring profitability.	Technical degree /diploma or business/tourism Bachelor's degree	Management and soft skills; on-the-job training	
Excursions				
Retail	Offers tourist products such as artisanal crafts and souvenirs for tourists to buy.	No formal education required	On-the-job training	
Local Guide	Plans excursion itineraries, arranges transportation to site, leads individuals or groups, and advises on safety and emergency measures. Must be licensed/certified	Certificate programs	On-the-job training	
Excursion Operator	Guides activities and provides specific services such as canoeing, rafting, mountain climbing, camel riding, and bicycling. Most are licensed.	Technical certificate programs licenses, insurance	On-the-job training	

Source: Duke CGGC.

Skill Level	Low	Low–Medium	Medium	Medium–High	High
					
	No formal education; experience	Literacy and numeracy skills; experience	Technical education/certification	Technical education/ undergraduate degree	University degree and higher

As seen in ***Table 5.3***, each tourism subsector has a wide range of jobs with varying levels of technical and nontechnical skills.[13] In particular, success in the industry relies heavily on good interpersonal skills (Burns, 1997). The jobs that have direct contact with tourists—hotel front office, tour operator, airline agent, and guide—call for strong language and communication skills, courtesy, ethics, friendliness, good behavior, discipline, conscientiousness, self-confidence, adaptability, creativity, and punctuality (ILO, 2010). International tourists also expect destination service providers to speak their language or the de facto universal language of tourism: English. Management-level positions require undergraduate degrees in hotel business management, tourism management, and related fields, in addition to on-the-job training and experience. Today a significant proportion of these positions also require computer literacy. It has been suggested that "even housemaids will have to become electronically literate if required to update room inventory with a hand held technology" (Yunis, 2009, p. 6). Other technical skills required for tourism include culinary skills, wait service, room preparation, and housekeeping, among others. Notably, most positions in the sector require formal education or training at a technical school or university.

The broad "international service" expectations of developed country consumers in accommodations, transport, and the standards encompassing environmental protection and sustainability have pushed both public and private sector stakeholders in developing countries to create tourism training institutions, develop certification programs, and follow the training programs and benchmarks set by the tourism industries in developed countries. For example, in Latin America, Brazil, Mexico, and Chile all adopted national certification of skills systems in the tourism sector.[14] Indonesia has also made certification a priority. This recognition of skills has also happened at regional levels in an effort to increase labor mobility across countries, and ultimately growth and upgrading of the sector (see ***Box 5.1***).

[13] We forego an analysis of cruise line workers because training and recruitment done for cruise lines is typically for one of the three large global cruise lines (Carnival, Royal Caribbean International, and Star Lines). From a developing country perspective, destinations serve just as one-day stop with limited spillover effects. Some developing countries, however, like the Philippines and Indonesia, have made developing a workforce for these cruise lines part of their tourism strategies.

[14] In Chile, the tourism sector has been targeted for workforce professionalization by ChileCalifica, a joint initiative between the Ministries of Education, Economy, and Labor. Job competencies and educational requirements for the most common positions in each sector were shared with technical training institutes to help ensure that the curriculum aligned with industry needs.

Box 5.1 Select Regional Certification Program

CARIBCERT

In 2002, the Caribbean Hotel & Tourism Association's regional certification system (CARIBCERT) was launched as a pilot program with the support of the Multilateral Investment Fund (MIF) of the Inter-American Development Bank (IDB). Over 2,000 Caribbean tourism industry professionals contributed expertise to the standards and certification development. CARIBCERT was created by the Caribbean tourism industry establishing 47 critical occupations involving Jamaica, Bahamas, Barbados, Belize, Trinidad and Tobago, and the countries of the Organization of Eastern Caribbean States. Six hundred trainers were certified to carry out this training locally during the pilot phase between 2002 and 2004. By 2007, the program had been officially launched in Antigua, Bahamas, Jamaica, St Maarten, Dominican Republic, and Curacao; and certification of staff was actively promoted by industry associations. By 2011, this program had been extended to include the Cayman Islands among others. Each country implements the CARIBCERT program in its own way; for example, in the Bahamas, some high schools provide their students with the opportunity to pursue hospitality coursework, including the 320 hours required to be certified by CARIBCERT, by the time they graduate. The main objective of the CARIBCERT was to address the need for more qualified workers and increase worker mobility of the 2.5 million people (25% of the region's total employment) employed within the hospitality and tourism industry across the Caribbean.

ASEAN Common Competency Standard for Tourism Professionals (ACCSTP)

In 2004, the ACCSTP Project was launched, funded by AusAID's Australia–Association of Southeast Asian Nations (ASEAN) Development Cooperation Program (AADCP) and managed by the University of Queensland. The primary aim of the project was to develop a model of (minimum) Common Competency Standards that were suited to the development of a more vibrant and competitive industry for hospitality and tourism across ASEAN member countries. Over 30 types of jobs were defined in the industry sectors of hotels, hospitality (food preparation and beverage service), and in travel and tourism. Indonesia began aligning its tourism regulation to meet these needs in January 2009 when the New Tourism Law No. 10 came into effect stating that all tourism workers should achieve competency standards. It established the National Competency Standard for 10 job areas, including hotel and restaurant, travel bureau, culinary, spa, and ecotourism guides. Agreement on the implementation of these standards was reached in 2010.

Source: CARIBCERT, 2010; Kappaz & Siegel, 2002; Laksaguna, 2009; News Caribbean Digital, 2009; University of Queensland, 2011.

Despite progress in certifications, developing countries continue to face certain challenges in providing the education and training required to meet these needs, including weak educational institutions, a lack of qualified instructors, and a poor understanding of the soft skills required for the industry (Liu & Wall, 2005, p. 700). Thus, in addition to nationally based training and development programs, several international initiatives driven by both private and multilateral actors have emerged to bridge the gap between the expectations of the international traveller and the competencies of local service providers.

Global hotel chains provide sophisticated internal job training programs that generally are not provided by national education institutions. Multinational hotel brands have strong, detailed training programs for all of their employees ranging from low to high skills.[15] Depending on the brand, the level of service and expertise will vary, but all training programs are based on their international standards. Training programs such as those of Hilton Worldwide, Marriott International, and the Accor Group cover a wide

[15] See ***Table 5.A.1*** in the Appendix 5.A.for a list of the leading global hotel groups.

range of activities (***Table 5.4).*** The Radisson Hotel Group has a well-developed training program, investing 0.4 percent of each hotel's total revenue into training schemes, and the Four Seasons has made language development key to advancing local staff.

Table 5.4. MNC Hotel Brand Training Programs

Hotel Group	Sample Training Programs
Hilton Worldwide	• OnQ Hilton University, e-learning facility available to all employees across the globe. Online training covers a wide range of topics in different languages to develop employees' functional and soft skills. • Passport to Hilton, brand and standards education. • Vocational training through apprenticeships. • Team leadership training for departments. • Shine Management Development Training Program. • SPARKE Management Development Training Program.
Marriott International	• International Hourly Program: employees are trained daily on core skills such as culinary, rooms operation, and purchasing. • The Gateways Program for hourly nonmanagement employees in finance, human resources, IT, public relations, and sales. • Core Management Training Program includes over 20 different management training programs that are taught by certified trainers, professional experts, and property-based management. • Hotel-Based Program and Offerings, like Essential Skills for Supervisors and Managers, Get On Board for new managers. • Ritz Carlton luxury brand promotes a "Gold Standard " mentality and the support and cultivation of its global employees. Employees in China, for example, are trained on culture, language, and computer skills.
Accor Group	• Five percent of staff expenditure goes to training. • Training focuses on initial basic service qualifications (in house); continuous training for mid-level management; and inter-cultural education. • Works with schools to train Accor personnel and facilitate fellowship programs. • Over 14,000 trainees annually in the Accor academy with centers around the world.

Source: Hilton University, 2010; HMA Administrator, 2010; Yeung 2006; ILO, 2001.

In 1998, the UNWTO made human resource development a priority by establishing the UNWTO Themis Foundation to "support the formulation and implementation of educational policies, plans and instruments that contribute to an improvement in the quality, competitiveness and sustainability of the tourism sector through excellence in education and training" (UNWTO, 2011).

Table 5.5 provides an overview of the UNWTO education and training programs.

Table 5.5. UNWTO Education and Training Products

Programs	Description
TedQual Certification System	Methodology and voluntary standards to improve the quality and competitiveness of tourism training and education to meet the demands of international tourism markets. Programs for tourism education, training, online education, academic research, and market research are eligible for certification.
Sbest Certification and Training	Assists destinations in promotion and benchmark setting. Standardized training for on-the-job human resources. Courses include customer service and total quality in tourism.
Practicum	Program for public officials in tourism to gain knowledge of tourism policy and strategy, destination management, and products of UNWTO.
Scholars Program	Scholarship program for tourism officials to attend courses on managing for quality in education, tourism policy and strategies, and creating tourism products.
Cooperation Activities	TedQual volunteers conduct research in collaboration with local universities in developing countries on leveraging tourism development and sustainable tourism.
Athena	Database of knowledge management resources.
SIS	Series of short international seminars on special topics.
GTAT	Programs to improve tourism teaching and learning.

Source: UNWTO. See http://ekm.unwto.org/english/education.php.

TedQual programs are among the most important of these training products. They are designed for developing countries in collaboration with national training institutes. The TedQual programs provide new methods and voluntary standards to improve the quality and competitiveness of tourism training and education to meet the demands of international tourism markets. One TedQual program, Fáilte Ireland, offers a best-practice model at the national level for tourism training that includes the public and private sectors and reaches across the entire region (Baum & Szivas, 2008, p. 790). Fáilte Ireland is "designed to ensure that all initiatives in the field of tourism education and training are consistent with wider tourism policy and that such initiatives are responsive to changing tourism priorities, labor market dynamics and development in terms of market opportunities" (Baum & Szivas, 2008, p. 790).

In addition, training in ecotourism and community-based tourism has become a popular form of development assistance. The Small Grants Program from the United Nations Development Program (UNDP) has supported over 100 ecotourism projects in developing countries (Trejos et al., 2008). Private international foundations like the Rockefeller Brothers Fund and the Charles Stewart Mott Foundation have also funded initiatives. The Rufford Foundation and MAVA Foundation have supported World Wildlife ecotourism initiatives.

As the industry continues to evolve globally, diverse models of workforce development across different stages of the value chain are likely to emerge. Country cases in the remainder of this study explore the variety of private, public, and multisector workforce development strategies that have been undertaken in three developing countries to support these market-entry or upgrading efforts of firms and countries in the tourism value chain.

VI. Developing Country Case Studies

In this section, we analyze the tourism industry of three developing countries, representing both low and middle-income economies: Costa Rica, Jordan, and Vietnam. As shown in ***Table 5.6***, tourism represents a contribution of over 10% to GDP and is an important source of employment generation for all three of these countries. Tourist arrivals have increased and products options have expanded over the last 20 years. Economic upgrading can be observed in the hotel and tour operator segments, and it is clear that all three countries pursued strategies to diversify tourism offerings. Costa Rica is the most mature international destination, originally attracting tourists in the early 1980s, while Vietnam and Jordan picked up in the 1990s. Vietnam has the highest tourism exports at US$4.99 billion, followed by Jordan at US$3.54 billion and Costa Rica at US$2.53 billion. Of the three countries, Jordan is most dependent on tourism, and the sector accounts for over 20% of GDP. Vietnam has a well-structured, public vocational and technical education and training (VTET) infrastructure that provides workforce development programs for the industry.

Table 5.6. Selected Economic and Industry Country Indicators, 2008

	Costa Rica	Jordan	Vietnam
Country GDP[a] ($US bn)	30	21	91
GDP per capita[a] ($US at PPP)	11,250	5,571	2,792
Tourism % of GDP [b]	14.8%	21.6%	14.5%
Tourism exports [1,b] (US$ bn)	2.53	3.54	4.99
Number of arrivals [b] (thousand)	2,409	7,100	4,254
Total labor Force[a] (million)	2	2	46
Employment in Tourism[b]	14.4%	19.8%	11.5%
Entry Year	Mid-1980s	Mid-1990s	Early 1990s
Entry Tourist Product	Ecotourism	Cultural, Religious	Cultural, Urban
Tourist Market	United States	Saudi Arabia, United Kingdom, United States	Japan, China

Note: [1]Tourism exports include all spending within the country by international tourists for both business and leisure trips, including spending on transport.

Sources: [a] 2008 World Bank Indicators, [b] 2008 World Travel and Tourism Council Economic Data.

The case studies are structured as follows. First, each case presents an overview of the current state of the industry, highlighting the principal features of the workforce and related development initiatives in the country. This is followed by an examination of key stages of industry development and the most important workforce development strategies implemented to foster upgrading during each stage. Particular attention is paid to the composition of the firms in the industry and the institutions involved in workforce development to identify best practices.

A. Costa Rica[16]

Over the last 20 years, Costa Rica has significantly expanded its international tourism sector. In 1988, three years after Costa Rica enacted the first tourism incentive laws, international visitor arrivals reached approximately 387,000. By 2008, that number had grown to almost 2.5 million visitors, a notable six-fold increase. Tourism's contribution to GDP increased to almost US$2.5 billion and employment for travel and tourism workers increased from 43,000 to over 124,000 (Horton, 2009). By 1992, tourism surpassed bananas and coffee and later IT in becoming the country's leading source for foreign exchange earnings.

Costa Rica is heralded as a peaceful and stable country whose ideal location allows for international travel convenience for the North American market, while being home to some of the world's most unique geological and biological marvels. The environmental natural assets were harnessed to create a series of tourism products that ranged from pure eco-environmental programs to sun, sand, and surf, as well as nature and adventure. Tourism investment and offerings have focused on the Central Valley part of the country—the most populated area consisting of the cities of San José, Heredia, and Cartago—and the Guanacaste province located in the northwest region, but tourism products are spread throughout the entire country, including the Atlantic Coast and Southern Pacific.

Industrial Organization

The industry is a mix of foreign and local investments. Foreign hotels are growing in both mid-range and luxury options (***Table 5.7***), concentrated in coastal regions as well as the Central Valley. Most foreign hotels operate under management contracts and the property is owned by national and global development groups. Locally owned and operated accommodation alternatives are typically smaller and focused on the lower end of the market.

[16] The Costa Rica country case was developed by Michelle Christian based on field research in Costa Rica from August 2008 to March 2009.

Table 5.7. International Hotel Groups and Brands Operating in Costa Rica

Hotel Group	Brand	Home Country
InterContinental	Crown Plaza, Holiday Inn	UK
Melía	Sol y Melía	Spain
Barceló Hotels and Resorts	Barceló	Spain
Best Western International	Best Western	US
Marriott International	Marriott, JW Marriott, Courtyard	US
Occidental Hotels and Resorts	Occidental Grand Papagayo, Allegro, Terremolinos, El Tucano and Spa	Spain
Hilton Worldwide	Hilton, Hampton Inn, Doubletree	US
Four Seasons	Four Seasons	Canada
Carlson	Radisson, Country Inn and Suites	US
Wyndham Worldwide	Ramada	US
Choice Hotels	Clarion, Quality Inn	US
Hyatt Corporation	Hyatt Regency Spa, Hyatt	US

Source: Instituto Costarricense de Turismo, 2010.

Costa Rica's ground transportation rental car business is led by foreign agencies such as Hertz, Dollar, Budget, and Avis. There are two domestic airlines: Nature Air and Sansa. Costa Rican national tour operators and incoming agents typically include transportation services within their functions. Throughout the country and in tourist communities, there are a wide range of local excursion activity providers and independent tour guides. The largest conglomerate tourism area is the Papagayo Tourism Pole, where 11 operating businesses have generated about 1,400 jobs, but this is relatively low considering the size of the entire project.

Government involvement in the industry is substantial. The Costa Rican government's tourism department, *Instituto Costarricense de Turismo* (ICT), has proactively spearheaded tourism growth with the mandate to promote Costa Rica abroad. ICT handles a variety of tourism-related activities, including tourism business offerings; standards for tourism facilities; a sustainable tourism development strategy; and certifications (Raventos, 2006).

Workforce Development

As tourism has grown, so has the number of workers involved in the sector. By the late 1990s, 12% of the population worked in the sector (Horton, 2009); and by 2006, hotels and restaurants alone accounted for close to 98,000 direct jobs according to national census statistics. The ICT calculated that by 2006 the industry had generated 326,488 direct and indirect jobs.[17] Despite high demand for tourism workforce development training, supply remains limited and continues to be concentrated in the Instituto National de Aprendizaje (INA), a public vocational school that covers several industries. INA offers classes on a piecemeal format but their programs are neither required nor comprehensive across the industry. Recently,

[17] Based on the assumption that every hotel room generates two direct jobs and every direct job creates three indirect jobs.

the INA has engaged with industry associations in the private sector to develop programs that appropriately train workforces to better fit industry needs.

There has been limited response from private training organizations in Costa Rica to meet demand. Although several universities in the country offer relevant university degrees, these are directed to senior management positions, where there is a surplus of qualified labor, and programs do not cater to the middle management segment. While successful economic upgrading in tourism was supported by a few workforce development initiatives, the industry has mostly pushed forward without a comprehensive human resource development plan.

Stage 1. Entry into the Value Chain: 1980s–1990

The ICT defines this as the Ecological Tourism Pioneering Period. International visitors began traveling to Costa Rica during this time mainly for environmental and conservation purposes, and most people who visited represented a base of scientists, interested amateurs, and naturalists (Horton, 2009). The government began to recognize tourism's potential and started to invest money, time, and resources to refocus the work of the ICT and the overall tourism development strategy.

The strategy began to shift from pure ecotourism to spurring U.S. investment and designating tourism development regions. Costa Rica received assistance from USAID, the International Monetary Fund, and the World Bank to encourage foreign investment and assist in tourism projects. The Tourism Development Incentives Law was passed in 1985 and provided incentives, including property tax exemptions, limited import duties for construction materials, tourism equipment (e.g., boats, jet skis, golf carts, etc.) (Honey, 1999). As a result of this new law, large foreign-led tourism development initiatives began to take shape. In particular, the Papagayo Gulf Tourism Pole master plan was created in 1988, focusing on luxury and upscale lodging. The government granted concessions to developers for long leases, 49 years instead of the customary 20, and granted generous tax exemptions, and agreed to invest in infrastructure (Honey, 1999).

Workforce Development. Limited workforce development initiatives were pursued during this period. INA began offering classes in basic hospitality services.

Stage 2. Growth (Hotel and Tour Operator Upgrading and New Tourism Products): Early–Late 1990s

During this period, economic upgrading occurred in the hotel and tour operator segments and the type of tourism products. Hotel growth was mostly in one- to three-star offerings and some four- and five-star hotels as a result of a continued inflow of foreign investment. Most growth was concentrated around the Central Valley and its surrounding volcanic attractions, notably Irazú and Poás. The tour operator presence in the Central Valley also began to expand. The Asociación Costarricense de Operadores de Turismo

(ACOT) began to improve their tour operators' capabilities in creating tour packages around the country. These packages reflected a mix of adventure activities and upscale leisure by combining nature tourism and beach tourism. In an attempt to maintain the sustainable tourism focus, the ICT initiated the Certification for Sustainable Tourism in 1997. This is a voluntary environmental program for hotels and tour operators.

Workforce Development. INA expanded its tourism offerings, but most training was carried out in the private sector. Hotels began to recruit and train their own personnel. In addition to basic hospitality programs offered in the 1980s, the INA developed short training programs in fields such as food and beverage and artisanal crafts. University graduates in nontourism but related fields (e.g., business administration and biological studies) began to pursue careers in travel and tourism-related services around the Central Valley. Environmental and biological offerings at universities helped to prepare the workforce to understand environmental sustainability issues and how to incorporate those practices into tourism businesses. Graduates of these programs typically worked for tourism-related businesses (e.g., expert guides for national tour operators).

Stage 3. FDI Expansion: Early 2000s–Present

The decade of the 2000s was representative of a foreign investment explosion, mostly in hotel construction, and in the mid-to-late part of the decade, in condominium construction targeted to foreign retirees. Between 1997 and 2004, tourism attracted 66.3% of FDI, mostly in hotels. In 2004, the Costa Rican Bank estimated $176.6 million in tourism-related FDI entered the country, growing 27% in 2005 to reach $224.5 million. This growth continued in 2006 and 2007, with $328 million in FDI for 2007 (Honey, 1999). Economic upgrading to hotels with international brands and standards and luxury levels, hit a high point during this period.

Tour operators improved their services to meet the growing logistical and coordination demands of global tour operators and cruise lines. Many of ACOT's 44 members began acting as incoming agents for foreign-based global tour operators. As incoming agents, they took on and executed much of the coordination and implementation of the entire tour package to Costa Rica. Some operators began to arrange tours to neighboring countries such as Nicaragua, taking important first steps toward becoming regional distributors. This functional upgrading was facilitated by the adoption of IT tools by tour operators themselves, as well as hotels and the ICT. This process upgrading increased their online presence and assisted in their ability to market their services, and for some, create a forum for online reservations. By 2002, 64% of all hotels in Costa Rica had an internet presence, including 86% of four- and five-star hotels (Raventos, 2006). However, only 18% of Costa Rican hotel offerings are visible in global distribution systems and virtual travel agents such as Travelocity and Expedia, and those offerings are large foreign hotels (Raventos, 2006).

As foreign resort and luxury hotel offerings increased, there was a parallel push for tourism product diversification with the growth of rural and community-based tourism. In 2009, the Law for the Promotion of Rural Community Tourism was adopted. Farmers were linked into the chain via offering the cultivation stage of their agriculture products as tourism experiences and small communities learned how to develop tourism offerings as well. Projects received support from the Small Grants Program implemented by the UNDP.

Costa Rica continues to struggle to balance its environmental goals with development realities. The Costa Rican government realizes that in order to pursue a multiple tourism product strategy and market Costa Rica as a sustainable tourism model, it must bolster its regulatory capacity. International and national groups have been pressuring government bodies to enforce environmental and conservation policies already in place.

Workforce Development. During this stage of tourism upgrading, public workforce development initiatives were strengthened and there was an industry-wide analysis regarding the effectiveness of INA's training and course offerings. In 2007, the industry's dependence on public training was highlighted when the private sector specifically requested that INA update and restructure its curriculum to better suit the demands of the industry. The Asociación Costarricense de Profesionales en Turismo (ACOPROT), the National Chamber of Tourism, the Costa Rican Small Hotel Network, ICT, and the Costa Rican Hotel Chamber began assisting INA in their tourism curriculum development. By 2010, INA provided tourism classes in Guanacaste, Alajuela, Puntarenas, Cartago, Carthage, and Limón. Most of its classes focuses on hotel cuisine, food preparation, wait service, housekeeping, and hotel reception. INA also made a push toward cultivating English skills. In 2007, INA announced free English courses for up to 25,000 Costa Ricans.

INA also introduced a hotel schools program outside of the Central Valley. The first hotel school was opened in September 2007 in Perez Zeledon, the southwest region of the country, with an inaugural class of 20 students. INA hopes to open more schools in Guanacaste, Limón, and Puntarenas. The opening of hotel schools in these regions is part of an effort to decentralize the focus of workforce development. Although the majority of tourism students are educated in the Central Valley, over half of the jobs are located in other areas. Furthermore, although INA emphasized the basics of hospitality training, employers still need better training for basic service positions. As a result, some hotels are hiring Mexicans, Cubans, and Nicaraguans to fill the low-skill tourism jobs. INA's training focus has been on employees at big resorts, which provides limited assistance for small businesses that are predominantly Costa Rican owned and operated. The institution continues to be narrowly focused on hospitality at the expense of specialized technical training in technology management and adoption, and for tour and travel operators.

During this period, ACROPOT became an important coordinating body for private sector workforce needs and training. This professional association provides training, seminars, and workshops for all forms of tourism businesses and spearheads research on the needs of the industry. Its course offerings range from biodiversity courses catered toward tour guides; language courses in English, French, Italian, and Mandarin Chinese; management of tourism microenterprises; and courses for public sector tourism development. Members can approach ACOPROT to request a specific form of training. ACOPROT also developed a series of potential training partnerships and Letters of Agreement with international universities, businesses, and associations for training purposes.

In 1999, ACOPROT, with funding and support from the MIF-IDB, initiated a training program for youth in Guanacaste, Costa Rica with a focus on employment in a few of the large resort complexes. Although the program succeeded in placing some students, overall it highlighted challenges to tourism training programs. Vulnerable youth populations have unique needs that affect their ability to successfully complete training programs. By the end of the program in 2004, 70% of students had dropped out. Without proper resources such as transportation for on-site training, many students were unable to meet the program's demands. In the evaluation of the program, MIF-IDB addressed how future initiatives should integrate the private sector to ensure that course curriculum meets business needs and the private sector is fully engaged as stakeholders throughout the process.

ACOPROT has also sought to address the imbalance of supply and demand for more highly skilled positions. In 2006, the association conducted research on 22 universities that offered tourism-related programs and found that 2,016 students in these courses sought positions at senior management levels even though the demand for those jobs was low, whereas the demand for "middle management" (e.g., leaders of wait staff, housekeeping, etc.) was strong. Since 2007, ACOPROT has sponsored an annual Central American Congress on Tourism Education to improve the quality of tourism training initiatives.

While INA and ACOPROT supported training that was needed for hotel and tour operator upgrading, international organizations such as the Small Grants Program of the UNDP in cooperation with Association of Community-Based Tourism (ACTUAR) and the Cooperative Consortium National Ecotourism Network (COOPRENA) supported product upgrading to rural tourism in Costa Rica. The Small Grants program began capacity building efforts along with the funding of rural tourism projects. Training rural communities in entrepreneurship and tourism services, and how to market those services to international tourists, was a joint effort by INA, COOPRENA, the Arenal Conservation Area, and the Fundación Neotrópica. COOPRENA specifically provided environmental education, design, and aesthetics based on local materials, accounting practices, and sustainable and environmental standards' training.

Table 5.8 highlights the workforce development initiatives reflective of Costa Rica's upgrading stages.

Table 5.8. Costa Rica: GVC Upgrading and Workforce Development Initiatives

Stage 1 Entry into Value Chain	Stage 2 Growth (Product Upgrading of Tourism Services, Hotels and Tour Operators)	Stage 3 FDI Expansion
Private Sector Workforce Initiatives		
	• Hotels train employees according to chain or international standards on how to interact with customers, phone etiquette, and customer service.	
		• ACOPROT offers training courses for members. Course offerings range from biodiversity courses catered toward tour guides; language courses in English, French, Italian, and Mandarin Chinese focusing on tourism communication; management of tourism microenterprises; and courses for public sector tourism development.
Public Sector Workforce Initiatives		
• INA offers vocational hospitality classes for tourism-related services like food preparation and housekeeping.		• INA begins to adapt program offerings following requests from the private sector to update and restructure its curriculum to better suit the demands of the industry.
	• ICT Certification for Sustainability begins in 1999	
Multi-sector Workforce Initiatives		
		• INA opens hotel training school in Perez Zeledon, Guanacaste, Limón, and Puntarenas in an effort to decentralize education and training programs.
	• ACOPROT works with MIF-IDB to create training for youth in Guanacaste between 1999 and 2004. • 2006: ACOPROT reviews suitability of university degree programs for the industry. It finds a strong focus on education for senior management position despite low industry demand, and a gap in programs for middle management. • 2007–2011: ACOPROT hosts new annual Central American Congress on Tourism Education.	
		• Association of Community-Based Tourism (ACTUAR), Cooperative Consortium National Ecotourism Network (COOPRENA), and Small Grants Program of UNDP create rural tourism training initiatives.

Source: Duke CGGC.

B. Jordan[18]

Jordan is growing as an international tourist destination. Tourism is the largest export sector, the second largest private sector employer, and the second highest producer of foreign exchange (Jordan Ministry of Tourism and Antiquities, 2004). In fact, tourism's contribution to Jordan's GDP is anticipated to rise from 20.5% (US$4.9 billion) in 2010 to 23.7% (US$12.4 billion) by 2020. Employment in the sector is expected to rise from 18.9% of total employment and 293,000 jobs in 2010 (1 in every 5.3 jobs) to 21.9% of total employment and 435,000 jobs (1 in every 4.6 jobs) by 2020 (World Travel and Tourism Council, 2010b).

Most of Jordan's tourism is focused on cultural and religious tourism, centered around Petra, an historical and archeological city constructed of rock in the 6th Century CE. In 1995, Petra was declared a World Heritage Site; and in 2007, it was named one of the Seven Wonders of the World and it is Jordan's leading tourism destination. The country's best known natural assets include the Dead Sea, the Gulf of Aqaba, and the Wadi Rum desert. The government has capitalized on these natural resources by establishing a series of sun, sand and surf;, adventure, and health-based tourism products. Jordan is also seen as a strategic location in the region for business tourism. The signing of the peace treaty with Israel in 1994 restored some confidence in the safety of the region, and the Investment Promotion Law of 1995 helped attract investment to Jordan (ABC Investments, 2009). International and regional events have also benefited Jordanian tourism with a rise in business visitors with interests in the Iraqi market, and regional tourists who are reluctant to travel to non-Arab destinations (Euromonitor International, 2005). Arab tourists typically come for single to multi-day visits during the high summer season and prefer Amman and the mountains, whereas European tourists usually travel via package tours (Barham et al., 2007).

Industrial Organization

The industry is a mix of foreign and local investments. There were 473 hotels in Jordan in 2008, of which 321 hotels were in Amman, followed by Aqaba with 45, Petra with 38, and the Dead Sea with 5 hotels (ABC Investments, 2009). Most of the new hotels are five-star international chains such as Movenpick, Marriot, Kempinski, and Four Seasons that have been established in partnership with local investors. Five-star hotels account for 37.5% of total nights spent in Jordan (ABC Investments, 2009). In 2006, there were 1,952 travel agencies, tour operators, and souvenir shops in Jordan (Majcher-Teleon & Slimène, 2009). Moreover, Jordan has some large foreign tour operators and travel agents such as Abercrombie and Kent and American Express. There are also some large local tour operators, such as Althuraya Travel and Tourism and Jordan Select Tours, but the majority of Jordanian operators and agencies are relatively small.

[18] The Jordan country case was developed by Ghada Ahmed.

The government has invested heavily in the tourism industry. For instance, the Ministry of Tourism and Antiquities drives sector upgrading, policies, regulations, and tourism projects, and collaborates with the private sector. The Jordan Tourism Board (JTB), launched in 1998, is a public-private organization that functions as the marketing arm of the ministry. JTB has 10 global offices in the Americas, Europe, and the Middle East that track activity in the sector and connect international tour operators with the Jordanian market.

Workforce Development

The total number of employees working in the tourism industry increased by 65% from 22,110 people in 2003 to 36,406 by the end of the third quarter in 2008 (ABC Investments, 2009).[19] Demographically, workers are mostly 25–40 years of age and are predominantly male (90%).[20] Approximately 81% of the workforce is Jordanian (ABC Investments, 2009). The sector has been growing fast and generating significant employment opportunities; most positions are low skill, with modest pay and are concentrated in Amman. For higher skilled positions, the availability of qualified Jordanian labor is limited and the sector depends on foreign workers to meet the shortage.[21] Turnover in the sector is high due to the availability of better paying jobs in Gulf countries.

Workforce development initiatives were weak during Jordan's initial entry into the global tourism industry, although these have strengthened during the past 10 years. Jordan Inbound Tour Operator Association (JITOA) has been a key player in the development of training programs for tour operators as the public sector has focused principally on the hospitality sector. USAID has played a vital, cross-cutting role in developing new initiatives through the Jordan Tourism Development Project (Siyaha) in collaboration with both the private sector and the government. The Siyaha project aims to revise university and training curricula to upgrade skills and certify an additional 5,000 people for anticipated future demand (Elkahteeb, 2010). Soft and functional skills such as English-language skills, appearance, hospitality basics, and customer service skills are cited as key workforce development challenges by the private sector.

Stage 1. Entering the Value Chain: 1990s–2000s

Jordan entered the value chain in the 1990s by promoting the country as an international tourist destination and encouraging FDI. In the1990s, Jordan embarked on economic reforms and liberalization of the tourism sector, and the government collaborated with the private sector to promote Jordan internationally. Investment promotion laws were reformed and barriers to private sector entry and operation in tourism were lowered (Gray, 2002). Most important, in 1995, the Jordanian government privatized

[19] Overall, the majority of jobs in tourism has been in hotels (39% in 2006) (ABC Investments, 2009), although most hotels, except for five-star ones, employ fewer workers than they could (Siyaha, 2007; USAID et al., 2008).
[20] Recruitment and education of women are a major challenge due to the cultural stigma associated with working in the hospitality sector. Employment of women in hotels is somewhat taboo.
[21] In Aqaba, 25% of hotel employees are non-Jordanians (Siyaha, 2007; USAID et al., 2008).

several state monopolies, including the Jordan Express Tourism and Transport Company, which had previously dominated all tourism activities.

From 1994 onwards, domestic and foreign direct investment and tourism infrastructure development increased. The number of hotels in Jordan rose from 177 in 1998 to 473 in 2008 (ABC Investments, 2009). As a result, the number of tourist arrivals increased, but the surge in new hotels has been insufficient to meet current and future demand. Hotel shortages have spurred new projects across Jordan, concentrated primarily in Aqaba and the Dead Sea (ABC Investments, 2009).

In 1998, the Jordanian government began to regulate the tour operator industry to strengthen the role of inbound Jordanian tour operators as co-coordinators with global tour operators of package tours in Jordan. Under these regulations, global tour operators could only work in partnership with an inbound Jordanian agency; incoming agencies could only be established and run by Jordanian citizens licensed by the state; tour groups must be accompanied by a (paid) Jordanian tour guide; and overnight stays by tourists in uncertified private accommodation were prohibited.

Workforce Development. Although only 5% of the workforce is considered unskilled (Majcher-Teleon & Slimène, 2009), participation in overall formal training (technical and vocational education, universities and short term courses) related to tourism has been low and industry growth has occurred despite a lack of workforce development. Less than 50% of the tourism workers receive formal training.

The most significant initiatives during this time were fostered as a result of requirements put in place by the public-private JTB for tour operator certification. Under these regulations, tour operators must have an undergraduate degree and pass foreign language and work site authorization exams (Gray, 2002). Partly in response to growing demand for these university requirements, by 2010, 17 Jordanian universities offered courses on tourism.[22] Most of these courses are offered within archeological studies departments because of the heavy focus on cultural and religious heritage tourism destinations within the country.

Stage 2. Hotel, Tour Operator, and Product Upgrading: 2004–Present

The second stage in Jordan's economic upgrading of tourism focused on tourism product development and the continued growth of tour operators. Jordan has targeted high-yield niche tourism markets and developed its image as a five-star destination with the assistance of international donor agencies. The Ministry of Tourism and Antiquities' National Tourism Strategy 2004−2010, which focuses on the six primary niche tourism products of cultural/historical, religious, eco, medical, adventure, and Meetings, Incentives, Conventions and Exhibitions (MICE) tourism, aims to double tourism receipts by 2010 through public-private partnerships and to increase employment in the sector. In particular, the

[22] Most of these began to offer degrees in 1995, when the industry first began to privatize.

government, the private sector, and international donor agencies began implementing large development projects in Aqaba and the Dead Sea area, which are two of Jordan's key tourist attractions.

During this period, Jordan's tourism industry successfully expanded its range of products. First, the number of tourists using package tours more than doubled from 146,000 in 2003 to 472, 000 in 2008, particularly among European tourists. [23] Second, in the mid-2000s, incoming agencies specializing in ecotourism began to emerge, supported by ecological NGOs and European buyers (Barham et al., 2007). This was further helped by the 2008 agreement between the Royal Society for the Conservation of Nature and the Ministry of Environment for the renovation and maintenance of Jordan's wildlife reserve the Shawmari, which is home to some of the rarest wildlife in the Middle East. Third, medical tourism receipts reached US$1 billion in 2010, growing at 10% annually. This subsector revolves around Jordanian hospitals, physical therapy, spa treatments, and therapeutic waters (the Dead Seas and Ma'in hot springs). Finally, Jordan's share in the MICE market also saw a steady increase toward the end of the decade, particularly in the Convention Centre in the Dead Sea, the Zara Expo complex, and the five-star hotels distributed across Amman, the Dead Sea and Aqaba. In addition, in 2008, the Ministry of Tourism signed a number of agreements, executing the first phase of the third Tourism Development Project to develop and rehabilitate Jordan's historical cities (ABC Investments, 2009).

In 2003, the JITOA was created to represent tour operators, travel agents, and other private sector firms that operate in Jordan. Since then, it has actively lobbied the government to improve operations and training and simplify tourist entry procedures. By 2010, the organization had over 60 members, representing more than 5,000 workers (JITOA, 2011). The association has received extensive support from USAID, which has been actively involved in Jordan's tourism industry since 2005.[24] The Siyaha project was launched, which is a public-private partnership program that facilitates the implementation of the National Tourism Strategy, to support the private sector in developing tourism products and services, assist the government in expanding the sector, and train workers.

Workforce Development. Workforce development in tourism was highlighted as a priority in Jordan's National Tourism Strategy in 2004. Since then, numerous initiatives have been instituted to improve workforce development by the private and public sector, as well as with donor support, and the sector has been moving toward establishing quality and service standards.

Several formal education institutions specifically focused on tourism were created to support the sector's growth by the private sector with the support of international agencies. In 2004, the Amman

[23] Package tourist arrivals from the United States deteriorated because of safety concerns. In 2008 the Jordan Tourism Board began specifically promoting package tourism among American buyers.

[24] U.S. foreign assistance to Jordan increased substantially between 2000 and 2010 and total U.S. aid through fiscal year 2010 amounted to approximately US$11.38 billion. Events such as the first Gulf Crisis in 1991, the 1994–1995 peace treaty with Israel, and the second Gulf War in 2003 made Jordan a strategic partner for the U.S. government in the Middle East, which increased foreign assistance to develop Jordan's economy and political stability.

Hospitality College began offering undergraduate degrees in Hotel and Tourism Management, and was formally accredited as the Jordan Applied University (JAU) College of Hospitality in 2005.[25] The school provides students with the opportunity to enhance their hospitality skills and join reputable hotels after graduation. The Jordanian Hospitality Association is the major shareholder of JAU and provides a range of training programs for its members through the institution. In addition, in 2007, the Center for Hotel and Tourism Training at the Madaba Vocational Training Corporation and the Center for Hotel and Tourism Training at the Aqaba Vocational Training Corporation were established to offer hospitality skills certifications. The centers are training workers on food production, food and beverage service, housekeeping, and hospitality and communication skills (USAID, 2008).

JITOA has been particularly active in promoting the development of its members, providing courses to more than 1,000 students from about 100 organizations since its inception and driving numerous other workforce development initiatives. In 2004, JITOA partnered with the USAID Siyaha Project and the International Institute of Tourism Studies at the George Washington University (GWU) to offer programs in events management. Initially, the program was taught by GWU instructors, but "train the trainer" programs were also offered to build local capacity and transition management of the courses.

In 2009, JITOA and the Netherlands Centre for the Promotion of Imports (CBI) reached an agreement to provide Jordanian Tour Operators access to CBI's Export Coaching Program (ECP) for tourism on business-to-business activities and entry of European tourism markets (AMEinfo.com, 2010). The initial six-day training program is carried out by independent industry experts and open to tour operators from 30 different developing countries, provides key lessons on how to develop contacts and networks within the European industry to drive tourism sales. Moreover, participating companies receive support and mentoring for an additional three years.

In 2010, JITOA extended its programming with GWU to offer a two-week professional Destination Management Certification Program to increase the professionalism within the destination management industry (USAID, GWU, et al., 2010). The program was designed for tourism destination managers and marketers, hotel developers, tour operators, business owners, government officials, and others concerned with enhancing the long-term sustainability and competitiveness of tourism destinations.[26] Best practices and cases studies were used as key teaching tools.

The same year, JITOA developed a pilot internship program with Hashemite University's Queen Rania Institute of Tourism and Cultural Heritage supported by USAID to help bridge the skills' gap

[25] The Amman Hospitality College was established in 1980 with the support of the UNDP and the ILO. In 1996, the institution was brought under the management of the Jordan Hospitality and Tourism Education Company.
[26] Courses include six different topics: Tourism Destination Policy & Planning; Tourism Marketing and Branding; Ecotourism, Protected Area and Community Development; E-Marketing and Internet Applications; Customer Service for Tourism Organizations; and Community-based Tourism.

between graduates of tourism courses in Jordan and the skills required by the tourism industry. Prior to beginning their practical training, students participated in training courses in English for tourism, communication skills, business writing, tourism sector orientation, customer service and time management carried out by the JITOA. Although only eight students participated in the pilot program, the sponsoring organizations plan to roll this out to all universities and colleges with tourism-related programs. JITOA also began offering immersion programs to its members to participate in new niche tourism products, such as the "Voluntourism" program in Ghor Al Mazra'a in January 2010, to help them fully understand the experience in order to develop and market new programs.

Jordan still faces many challenges in workforce development and tourism. Professionalization in the sector has been low, there is a lack of qualified personnel across the sector, and the high demand for English fluency disqualifies many job seekers (USAID, Development, et al., 2010). Cultivating soft skills and changing work taboos regarding gender relations and tourism jobs will have to be addressed. Training programs still struggle to effectively integrate soft skills training in the curricula (USAID et al., 2008).

Table 5.9 highlights the workforce development initiatives in Jordan.

Table 5.9. Jordan: GVC Upgrading and Workforce Development Initiatives

Stage 1 Enter the Value Chain	Stage 2 Hotel Upgrading, Tour Operator Upgrading, and Tourism Product Upgrading
Private Sector Workforce Initiatives	
	• Terhaal trains its tour guides on technical skills and first aid in adventure tourism (Terhaal, 2010).
• Hotels train employees according to chain or international standards on how to interact with customers, phone etiquette, and customer service.	
Public Sector Workforce Initiatives	
• 16 vocational training and educational centers offer training in hospitality such as food service and housekeeping; and 17 universities offer 2-year diplomas and Bachelor's degrees, including Jordan University, Balqa Applied University, Aqaba University College, and Amman Hospitality College.	
Multi-sector Workforce Initiatives	
	• JITOA offers education and training, certification programs and is a partner in the Siyaha project to develop tour operators' English skills. • USAID Siyaha Projects provide training to build tourism-training capacity and upgrade archaeological site management. • JITOA and the Netherlands CBI provide the Export Coaching Program) for tourism (2008–2014) on business-to-business activities and entry of European tourism markets (AMEinfo.com, 2010). • In 2007, the Center for Hotel and Tourism Training at the Madaba, Vocational Training Corporation (VTC) and the Center for Hotel and Tourism Training at the Aqaba Vocational Training Corporation (VTC) were established to offer hospitality skills certifications. The centers are training workers on food production, food and beverage service, housekeeping, and hospitality and communication skills (USAID, 2008). • In 2008, Nestle Pro Gastronomia Switzerland conducted a three-day workshop on food and beverage management (USAID, 2008). • JITOA, USAID, and GWU established the Advance Destination Management Program in 2010 to lower negative impacts of tourism and preserve cultural and natural resources. • USAID helped develop a pilot internship program between Hashemite University's Queen Rania Institute of Tourism and Cultural Heritage and the JITOA to help bridge the skills' gap between graduates of tourism courses in Jordan and the skills required by the tourism industry.
• Jordan Society of Travel And Tourism Agent Training Centre offers training and consultation services to all members free of charge. • CIFA (Centre pour L'Insertion par la Formation et l'Activite) and TLB Destinations conducted a regional Tour Leader Training Program in July 2008 in Lebanon to train tour operators on adventure and responsible tourism (TOI & CIFA, 2008).	

Source: Duke CGGC.

C. Vietnam[27]

Vietnam has attracted an increasing number of travelers since 1986, when tourism barriers imposed by the Vietnamese government and by other nations began to be removed. In 2008, over 4 million international arrivals were recorded, a 16-fold increase from 1990 (VNAT, 2010). Tourism's contribution to GDP is around 4% and 1.5 million people work in the sector.

Vietnam draws on its natural assets as well as its rich cultural history to offer a broad range of tourism products. Tourism is concentrated in three major areas of the country: the Northern area centered on Hanoi, accounting for 20–25% of tourism receipts; the Southern area centered on Ho Chi Minh City, accounting for 50% of receipts;[28] and the Central Area focused on the ancestral capital of Hue and the town of Da Nang accounts for the remainder of the receipts (UNCTAD, 2006). The Northern area includes both seaside resorts and historical sites that offer both sun, sand, and surf and MICE tourism products, whereas the Southern region has the most developed tourism with nearly 70% of all tourists visiting Ho Chi Minh (formerly known as Saigon). Prime markets include international tourists visiting the Southern Pacific[29] and regional customers. Chinese are most inclined to visit multiple times due to geographic proximity and cultural similarity of the two countries (UNCTAD, 2006). Tourist surveys indicate that Europeans are principally interested in cultural tourism, and Japanese are mostly focused on rest and relaxation.

Industrial Organization

Vietnam's tourism firms reflect its policies to attract direct investment from abroad, although there is a substantial degree of government control and management. The tourism strategy stipulates that investment must come from both the state budget and foreign investment (UNCTAD, 2006). To strike a balance between the private and public sector, it sells shares in state-owned companies to private contractors (UNCTAD, 2006). The two largest air-carriers, Vietnam Airlines (VNA) and Pacific Airlines, which account for close to 50% of all international air travel and 100% of domestic air travel, are public corporations although state institutions hold a majority ownership. The hotel sector has more diverse ownership, with foreign firms actively involved in higher standard offerings. Tour operators have consolidated and vertically integrated their operations. The two largest organizations, Saigon Tourists and Hanoi Tourism, are also public corporations with majority ownership held by state or local governments. Saigon Tourists has a network of 70 three- to five-star hotels in the country and work with a broader network up to 300 travel firms in 36 countries.

[27] The Vietnam country case was developed by Shelli Jo Heil.
[28] Half of all international arrivals land in Ho Chi Minh City before visiting other cities, and the average stay is approximately three days.
[29] Most tourists visit more than one country during their stay in the Southern Pacific, Vietnam forms part of the route that also includes Cambodia, Laos, and Indonesia.

There is a high level of involvement by both the national and provincial governments in the development of tourism in Vietnam. The most important organization is the Vietnam National Administration of Tourism (VNAT), a governmental organization established in 1992 that is responsible for planning, international cooperation, and training management, and plans tourism development for the entire country. VNAT is central to creating the tourism development strategies, supporting upgrading initiatives, and solidifying workforce development in Vietnam. In addition, larger local governments play a coordinating role, reaching out to the private tourist companies to help elaborate the development plans to respond to international conditions and standards (UNCTAD, 2006).

Workforce Development

In 2005, tourism accounted for close to 2% of national employment, including over 230,000 direct and 500,000 indirect employees (VNAT, 2007). Most jobs were food and beverage related, as shown in ***Table 5.10.***

Table 5.10. Vietnam Tourism Employment Breakdown, 2005

Position	Quantity
Food & Beverage	36,406
Room Service	27,640
Cook	23,536
Front Office	19,258
Travel/Tour Operator	8,092
Tour Guide–Certified	5,104
Tour Guide–Uncertified	2,854
Other	93,958
Total	**234,096**

Source: VNAT, 2007.

Workforce development in Vietnam's tourism sector reflects the legacy of government control and much of the training is provided by public institutions. VNAT is the most important institution leading workforce development initiatives, and Vietnam has a well-established vocational and technical education and training (VTET) system. In fact, its Human Resource strategy provides a broad outline for all tourist companies to follow. Every year, approximately 15,000 students graduate from tourism schools; 12,000 are enrolled in tourism and vocational schools, and the other 3,000 are enrolled in universities. The major subjects provided by vocational schools are focused on culinary skills, room preparation, food and beverage service, and reservations and reception skills. Colleges and universities provide education in hotel business management, tourism management, tour guide, and tour marketing (VNAT, 2007). VNAT also develops, monitors, and evaluates the curriculum, and certification programs of Saigon Tourist and Hanoi Tourism have subsidiary training schools. ***Table 5.11*** provides an overview of the number of participants in these training programs in 2005.

Table 5.11. Vietnam Tourism Type of Training Received, 2005

Training Form	Quantity
Short-Term	125,440
Primary	42,364
Secondary	35,966
University	29,844
Postgraduate	482
Total	**234,096**

Source: VNAT 2007.

Foreign firms, nonetheless, continue to train their employees in international professionalization, service standards and foreign languages, and there are broad differences between the quality of the skills acquired by workers affiliated with foreign private enterprises and those who work at state-owned businesses.

Stage 1. Entry into the Value Chain: 1990–2000

Though international tourism existed in the late 1970s after the war ended, there were few hotels, all the tourism companies belonged to the state, reservations had to be made months in advance to obtain a visa, the government restricted movement of foreign tourists through a series of travel permits, and the majority of visitors were from Soviet bloc countries. Tourism was not given priority in national planning during the first 15 years of Vietnam's post-war period (1975–1990). This began to change in 1991, following the introduction of the *Doi Moi* ("Open Door") economic policy in 1986 to centralize the planning system and liberalize the economy, allowing the private sector to drive growth and increased international trade (Suntikul et al., 2008). In 1991, the Tourism Master Plan, drawn up by the UNWTO together with UNDP, recommended liberalization of the travel market. In 1992, VNAT was established and placed directly under the prime minister. This same year, private companies within Vietnam were permitted to operate in domestic tourism and some overseas companies were allowed to obtain three-year tour operator licenses. International tourism slowed briefly in the mid-1990s, due to new government restrictions after concerns were raised about outside cultural influences. However, these restrictions did not last long. In 1999, the Tourism Ordinance was adopted with the goal to regulate tourism by defining the rights and obligations of tourists as well as organizations operating within the Socialist Republic of Vietnam. This simplified the procedures related to tourist arrival and tourism company development.

During this period, upgrading in the sector occurred in hotels, transportation, and tourism products driven by a mix of state-owned enterprises and joint ventures between the state and private companies. First, the hotel segment benefited from substantial FDI. By the end of 1995, there were 160 joint venture projects in the tourism industry, accounting for 26% of the total FDI in Vietnam. The Vietnamese government encouraged investors (domestic and foreign) to invest in hotel and entertainment complex construction (Cooper, 2000). During 1990–2000, US$600 million was invested in hotel infrastructure (UNCTAD, 2006). Second, in the air transportation segment, VNA was established as a state enterprise in 1993 and partially

privatized in 1996. The company is still overseen by a board appointed by the prime minister. During the 1990s, VNA improved its fleet, modernized ticketing and reservations, and improved training (McKinnon, 1993). By 2003, VNA was servicing 15 domestic airports and flying to 25 major international cities (Suntikul et al., 2008). Finally, in addition to strengthening cultural tourism in Hanoi and Ho Chi Minh City, historic towns such as Hue and Hoi An, and natural heritage sites like Ha Long Bay, border tourism began to develop throughout the 1990s with the assistance of Chinese and Taiwanese investors along the Vietnam–China border (Wah, 2008). These towns provided gambling opportunities for the new affluent Asian tourist.

Workforce Development. According to a survey conducted in 1994, less than 50% of tourism employees had formal education or training in the tourism industry (technical and vocational education, universities, and short courses). The skills' gap was met with in-house training by tour companies and/or major hotels (Cooper, 2000). This prompted the Vietnamese government to strengthen VNAT and further develop training institutions. In the mid-1990s, VNAT established a Human Resource Strategy to improve the quality of training. Tourism training was carried out by schools directly controlled by VNAT in the larger tourist areas of Hanoi and Ho Chi Minh City. Many provinces and cities directly under the control of the central government also began to provide short-term (three to six month) tourism training courses in specialized tourism centers (VNAT, 2007).

Stage 2. Hotel, Tour Operator, and Process Upgrading: 2000–Present

The hotel and tour operator segments were upgraded during this stage, offering additional services and increasingly sophisticated products. In addition there was a widespread adoption of IT following the creation of the Tourism Information Technology Center (TITC). The growth and upgrading of the tourism industry was supported by reductions in both ownership and travel restrictions. Private investment accelerated, particularly in the hotel segment. The 2002 ASEAN Tourism Agreement facilitated the easing of visa requirements for ASEAN nationals, increasing the flow of tourists from China, Japan, and the Asian region more generally. This was important for the market as these regional travelers represented a lucrative return visitor market that is stronger than the French and North American tourist segments (UNCTAD, 2006).

In the hotel segment, multinational operators including InterContinental Hotels Group, Accor, Best Western, Hilton, and Sheraton either established new operations or greatly expanded their presence. In 2008, a Canadian–US partnership began building Vung Taus, the largest tourism resort in the country, a 1,100 room, five-star hotel and championship golf course (Walsh, 2010). The French hotel chain Accor also announced plans in March 2010 for a significant expansion in Vietnam. The hotel chain currently operates 13 hotels and is looking to add 10 more under various brand names (Ibis, Novotel, Pullman, Mecures) by 2012 (BMI, 2010).

Saigon and Hanoi Tourism led in the upgrading functions in the tour operator segment. Although Saigon Tourism began coordinating and executing shore excursions for cruise lines and outbound travel to regional locations in the 1990s, the company increased its offerings following the turn of the century, executing multiple tour products catering to different audiences and coordinating the largest tour groups in Vietnam. It also developed a series of travel websites and began expanding its business traveler functions.

The TITC opened in the early 2000s and was charged with development and management of the tourism information system in Vietnam. TITC, under the control of VNAT, developed the main website that promotes the country and provides promotional materials in six languages. The website is also used to compile statistics to better target specific markets and to book online hotel reservations (UNCTAD, 2006).

Workforce Development. While international hotel groups implemented their own internal training programs, public sector training shifted toward certification to ensure better tourism skill creation. The Vietnam Tourism Certificate Board (VTCB) developed standards on skills training programs, and procedures for assessment and granting of certificates valid throughout the whole country. The government also implemented the Acknowledgement Program for Laborers (APL) for travel agents and hotel businesses who have professional skills but receive no official training (VNAT, 2007).

In 2006, VNAT developed three standard training modules for technical, college, and university level programs. Most of the teachers for these programs were trained under state-subsidized programs, including former Eastern European country programs (VNAT, 2007). By 2007, over 50% of tourism staff had received short-term training denoted as “on-the-job training” or three- to six-month training courses provided through one of the state-sponsored training schools. IT engineers were recruited to help drive the web presence, becoming VNAT’s best paid employees by 2006(UNCTAD, 2006). In addition, VNAT established local training programs as well as overseas study opportunities with universities in Luxembourg, the European Union (EU), Spain, and Singapore. Despite numerous training programs at the university level, as the industry expands there is a growing shortage of senior management professionals for the industry.

VNAT’s schools and collaborative initiatives continue to face problems. Graduates trained at vocational schools, even those at high-quality hotels in Hanoi, still struggle to meet work requirements and require further on-the-job training. The quality of training in tourism meets only the basic technical skills required to fill immediate labor needs, rather providing a stronger foundation in essential soft skills. Most of the graduates have weak practical and communication skills, particularly foreign language skills and a professional attitude required for service jobs. Vietnam’s low standard of living and high numbers of people living in poverty exacerbate the ability of workers to be aware of international service standards, cultural differences, rule-of-law, and professionalization (VNAT, 2005). As a result, although the VNAT programming is extensive, graduates are often not immediately employable (VNAT, 2007).

Table 5.12 highlights the workforce development initiatives in Vietnam.

Table 5.12. Vietnam: GVC Upgrading and Workforce Development Initiatives

Stage 1 Entry into the Value Chain	Stage 2 Hotel and Tour Operator Upgrading Internet Process Upgrading
Private Sector Workforce Initiatives	
• Hotels train employees according to chain or international standards on how to interact with customers, phone etiquette, and customer service.	
Public Sector Workforce Initiatives	
• In the mid-1990s VNAT established a Human Resource Strategy to improve the quality of training. • VNAT controls and operates training schools mostly in Hanoi and Ho Chi Minh City. Forty-three training facilities exist, 29 at the university level. • Many provinces and cities directly under the control of the central government also began to provide short-term (three to six month) tourism training courses in specialized tourism centers (VNAT, 2007).	
	• VTCB develops standards on skill training and grants certificates. • Government implements the Acknowledgement Program for Laborers for businesses who have not received formal training. • In 2006, VNAT developed three standard training modules for technical, college, and university level programs. Most of the teachers for these programs were trained under state-subsidized programs, including former Eastern European country programs (VNAT, 2007). • IT engineers were recruited to help drive the web presence, becoming VNAT's best paid employees by 2006.
Multi-sector Workforce Initiatives	
	• VNAT collaborates with Luxembourg, EU-funded school programs to enhance occupation skills and operate assessment centers around the country and offer overseas study opportunities. Part of the goal is to create better qualified tourism trainers.

Source: Duke CGGC.

VII. Analysis and Discussion of the Country Cases

The GVC perspective provides a useful framework to understand how countries upgrade along the value chain, the kinds of institutional involvement needed to facilitate upgrading, and the most relevant complementary workforce development practices. We summarize below our main findings for the global tourism industry.

A. Economic Upgrading

Whereas Costa Rica began small as a niche market, attracting biologists and scientists from North America for its natural habitat, and growth was later driven by proactive foreign-led investment, Jordan and Vietnam entered the global tourism industry by attracting large foreign projects. Eventually, all the destinations created a multi-pronged international product approach where tourism product strategies were

adopted in many regions of the country. This strategy allowed for a variety of products that ranged in price, scale, and type.[30]

Several enabling factors that support value chain entry and upgrading of the tourism industry emerge from these cases. The most notable of these are **marketing strategies** to brand the country and the tourism types available, i.e., sun, sand, surf; cultural tourism; and **visa facilitation** for entry and exit. Lead firms in outbound countries—airlines, hotels, tour operators, and cruise lines—need to be convinced that developing countries are strong tourist destinations for their clients. In all three cases, the development and planning of tourism at the national level are pursued by marketing boards connected to the ministries of tourism. While easing visa restrictions emerged only in the case of Vietnam, its impact there highlights that it should not be overlooked. With growing competition in the global tourism industry, and the broad range of options that international tourists can choose from, restrictive barriers such as tedious and lengthy visa application processes can deter potential clients.

Developing countries **utilize specific subsector strategies to upgrade in the tourism value chain**. Four key upgrading trajectories were highlighted in the country cases: in the hotel segment, upgrading into more luxury options; functional upgrading in the tour operator segment; process upgrading with the addition of online functions, such as web-based reservations and marketing; and product upgrading, with all three countries expanding their tourism options to include a wide variety of niche products.

- For the hotel sector, each of the countries pursued pro-FDI policies to attract international four- and five-star hotels. Not only do these hotels offer higher levels of luxury, but they also already have strong linkages with global distributors, thus facilitating access to a broader market. In all three of the country cases, substantial upgrading of the hotel segment occurred during the 2000s.
- In the tour operator segment, incoming agents were pushed by global tour operators to upgrade their coordination and destination trip planning capabilities. As competition increases, global tour operators are seeking to offer more trips at lower prices. This pressure has been pushed down the value chain to incoming agents. In response, firms in both Costa Rica and Vietnam repositioned themselves in the value chain and serve as regional tour operators in addition to coordinating in-country tours. In Jordan, the JITOA facilitated the upgrading of its tour operators, although they continue to emphasize internal rather than regional offerings.
- The IT revolution pushed all three countries to establish a web presence. In fact, marketing boards play an active role in providing platforms that are used not only to promote these countries as destinations for international travelers, but also include functions such as online reservation systems for local hotels and tour operators. In Vietnam, VNAT created an organization to maintain a web presence for the country's tourism sector. This allowed smaller

[30] See Table 5.A.2 in Appendix 5.A. for an overview of the tourism products offered in these three markets.

local firms direct access to the market, although limited information is available regarding how successful this has been.

- The increasing diversity of international tourists with varied tastes and preferences has helped to facilitate the broadening of tourism products. In Costa Rica, in addition to ecotourism, the country now offers sun, sand, and surf; adventure; and community-based tourism. Jordan has expanded its product offerings from cultural and religious tourism to include medical and MICE tourism. And, Vietnam has had success in offering MICE products along with its more well-known cultural tourism offerings.

B. Workforce Development

The workforce development initiatives carried out in the three countries primarily supported two of the four upgrading trajectories described above: upgrading of the hotel segment and functional upgrading in the tour operator segment. Efforts to improve language skills across the sector have also been adopted, but soft skills remain a key weakness.

Hospitality training, including hotel cuisine, food preparation, wait service, housekeeping, and hotel reception training courses, stands out as a consistent workforce development initiative across all countries. Training programs include short courses; longer programs where students lived and worked in a hotel school (e.g., those provided by INA in Costa Rica); or internship programs, where students participate in short courses followed by hands-on practical training in hotels such as JITOA's program with Hashemite University's Queen Rania Institute of Tourism and Cultural Heritage. This training may or may not be certified as it is in Vietnam, where VTCB also certifies skills developed through work experience for workers who have not undergone any formal training under the APL. Although these programs helped to facilitate upgrading in the hotel segment, in all three countries, international hotel chains also provided extensive internal training programs.

In the tour operator segments, the focus of workforce development initiatives varied more than for the hotel segment, ranging from accounting and management of tourism microenterprises to business development. Jordan stands out among the three cases for its strong focus on the skill development of tour operators. First, this is considered a professional role, and tour operators must hold a university degree. Second, training courses offered to these professionals include events management and destination management certificate programs from a leading U.S. university. Finally, tour operators had access to a training program developing business networking skills specifically for the European market (i.e., the EU-CBI program).

More generally, all three countries strengthened their foreign language capabilities, since this is an essential skill in acquiring a value-added tourism job. In Costa Rica, for example, the INA offered 25,000

scholarships in 2007 for English language training, and ACOPROT provides members with access to Mandarin Chinese, French, and Italian classes as well as English. In Jordan, the JITOA also offer English-language training for its members.

However, soft skills remain a central workforce development challenge for the tourism industry in these countries. Professional associations in both Costa Rica and Jordan began offering soft skill development courses for their members in the 2000s. Classes include communication skills, customer service, and time management. Overall, despite the needs of the industry, the response from educational institutions to develop these competencies remains weak, even in Vietnam where VTET institutions are well established. These training schools continue to focus on technical skills, including food and beverage services, housekeeping, and room preparation.

C. Institutions

The three cases provide distinct examples of institutional frameworks for workforce development: Costa Rica entered the tourism industry with a narrow framework that depended on a single public institution, the INA, to provide training; in Jordan, universities played the central role for education, although with weak direct linkages to the industry; and in Vietnam, a legacy of government control meant that all training for the industry was centralized under VNAT. Until very recently, there has been a limited response from the private sector to workforce development, with the exception of international hotel chains, which implemented their own global training programs. This may be the result of the centralized role played by the public sector with government-led industrial policies to drive industry growth through national marketing boards.

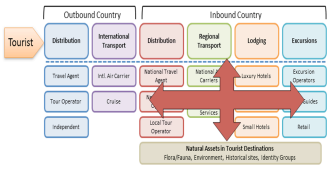
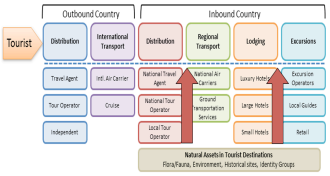
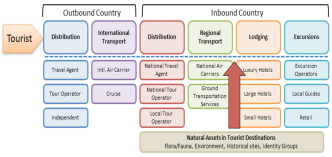
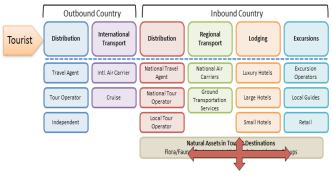
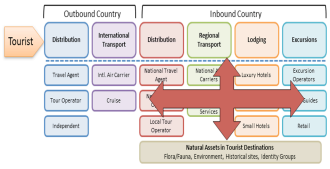
However, the effectiveness of these public sector programs varies widely. Lack of quality instructors and an overemphasis on hospitality training at the expense of other needs, particularly soft skills, undermine the success of these initiatives. INA in Costa Rica is able to teach the basics, but struggles in creating a curriculum that matches the industry's needs. VNAT in Vietnam has moved from a reactive to proactive strategy in human resource development for tourism, but faces challenges in soft skill cultivation. Jordan has actively sought assistance from international universities, multilateral agencies, and private associations to build capacity, and Vietnam has created a detailed Human Resource Development plan to outline current deficiencies and strategies for improvement.

Private sector involvement has been more limited with the exception of large international hotel chains. For local firms, on-the-job training is popular for developing staff internally in the sector; classroom-based courses are mostly carried out by industry associations and these are often supported by international agencies. In Jordan, although the JITOA is quite active in driving workforce development,

many of its initiatives are facilitated by USAID. In Costa Rica, MIF-IDB and the UNDP provided important funding for training programs run by industry associations. ACOPROT, however, appears to be more autonomous financially and runs workshops, training programs, and seminars for its members and has reached out to foreign universities for support on training content. In Vietnam, even though the two lead firms, Saigon and Hanoi Tourism, have their own internal training program, public sector oversight is noteworthy and VNAT designs, develops and evaluates their curriculum.

Table 5.13 overlays the workforce development initiatives that correspond to tourism's key upgrading stages in developing countries.

Table 5.13. Workforce Development and Upgrading in the Tourism Global Value Chain

	Diagram	Workforce Development Implications	
Entry in the Value Chain		Depending on the development level of the country, the workforce takes on low- to mid-skilled positions in al subsectors. Being able to meet international customer services standards is key.	
		Skills Preparation Short training for low skill positions and formal education for higher level jobs. Emphasis on soft skills	**Institutions** Private Sector Government NGO/Multilateral organizations
Upgrading within the Tour Operator Segment (Functional upgrading)		Workers are trained for technical and safety requirements of excursions and guides for incoming agents have training in natural asset knowledge. Incoming agents need marketing and coordination training.	
		Skills Preparation Formal short training and university degrees for national tour operators	**Institutions** Private sector Government Tertiary education institutions
Upgrading within the Hotel Segment (Product Upgrading)		Workers need training in hotel services, back office, and management. There is often a lack of senior management positions, and demand for middle management and hotel services is strong.	
		Skills Preparation Short training (formal or on-the-job) and university degrees for higher positions	**Institutions** Private sector Tertiary education institutions
Adding Tourism Types (Product Upgrading)		Workers need to learn international standards and technical skills and they are trained according to the product.	
		Skills Preparation Short training, university degree	**Institutions** Private sector Government Tertiary education institutions
Adopting IT (Process Upgrading)		Workers need to apply and maintain website design and computer reservation systems.	
		Skills Preparation Short training, technical degrees, and university degree	**Institutions** Private sector Tertiary education institutions

Source: Duke CGGC.

D. New Global–Local Interactions

FDI in the hotel segment of the tourism value chain has been important for workforce development in all three of the countries studied by providing them with access to international clients from developed countries.[31] Most global tour operators choose accommodations and rental car suppliers in developing

[31] The accommodations are usually selected from among properties that meet international standards.

countries that are foreign run or are higher on the luxury scale based on their ability to meet international service standards. This trend is also being followed by virtual travel agents such as Expedia.

There are both direct and indirect effects of this. First, it has a direct impact on workforce development in the hotel segment, since these hotels provide their own training programs that meet their global in-house standards. In the absence of international standards, this serves an important role in facilitating the development of international service capabilities and of soft and technical skills in developing countries that meet the expectations of international travellers. However, most staff have low level skills and upper management continues to be staffed by expatriates. There is little information on the diffusion of managerial know-how at the managerial level in international brand hotels in developing countries.

Second, foreign-run hotels indirectly foster workforce development within the tour operator segment as well. All three countries experienced hotel upgrading and tour operator upgrading simultaneously. Thus, the increased flow of international tourists to upscale hotels in developing countries has a spin-off effect for the tour operator segment. These hotels have a more rigorous approach to excursion and tour operator selection, and they require a range of characteristics such as reliability, promptness, and safety. This requires professionalization of the tour operator segments.

VIII. Conclusion

International tourism is one of the key industries selected by developing countries to drive economic growth. This service sector harnesses natural, cultural, and historical assets, offering industry diversification beyond manufacturing, agriculture, and extractive industries. It is a multidimensional industry that combines accommodation, distribution, transportation, and public service institutions. As a result, it provides a large number of direct and indirect jobs to a wide range of workers with low and high skills.

The core of tourism is human capital and it adds value largely by upgrading labor force skills. Developing countries have struggled to prepare workers with the skills demanded by international clients. Weak educational institutions, shortage of adequate trainers, and lack of awareness of international service standards make it difficult to professionalize the industry to compete globally. Large foreign hotels have established workforce development programs to align the local skills with the customer service demanded by global standards. However, the industry remains dominated by local firms that depend on their national workforce development institutions and private associations to enhance employee skills.

Appendix 5.A.

Table 5.A.1. Top Global Hotel Groups, 2009

Hotel Groups	Brands	Properties	Countries
Hilton Worldwide	10 - Waldorf Astoria, Conrad, Hilton, Doubletree, Embassy Suites, Hilton Garden Inn, Hampton, Homewood Suites, Home2, Hilton Grand Vacations	3,500+	80
Marriott International	18 - Ritz Carlton, Bvlgari, JW Marriott, Courtyard, Fairfield Inn and Suites, Renaissance , Autograph Collection, etc.	3,420	68
InterContinental Hotels Group	7 - Intercontinental, Crowne Plaza, Hotel Indigo, Holiday Inn, Holiday Inn Express, Staybridge Suites, Candlewood Suites	4,503	100+
Accor Group	15 - Sofitel, Pullman, MGallery, Novotel, Suite Novotel, hotelF1, Motel6, ibis, etc.	4,100	90
Starwood Hotels & Resorts Worldwide	9 - St. Regis, The Luxury Collection, W, Westin, Sheraton, Le Meridian, Four Points, Aloft, Element.	992	100

Source: Company Web sites and 2009 Annual Reports.

Table 5.A.2. Tourism Products in Costa Rica, Jordan, and Vietnam

Location	History & Culture	Ecotourism, Adventure	Religion	Medical & Wellness	Sun, Sand, and Surf	Community
Jordan						
Ajlun	√	√				
Amman	√	√	√	√		
Aqaba	√	√	√	√	√	
As-Salt	√		√			
Azraq and Shawmari		√				
Jerash	√	√	√			
Jordan Valley & the Dead Sea	√	√	√	√	√	
Karak	√					
Madaba	√		√			
Mount Nebo	√		√			
Petra	√	√	√	√		
Um Ar-Rass	√		√			
Umayyad Desert Castles	√					
Umm Qays	√		√			
Wadi Rum		√		√		
Costa Rica						
Central Valley—San José, Cartago, Heredia	√	√		√		√
Guanacaste—Papagayo, Nicoya		√			√	
Puntarenas—Manuel Antonio, Jacó		√			√	
Limón—Tortuguero, Puerto Viejo	√	√			√	√
Vietnam						
Hanoi—Capital	√					
Halong City	√		√			
Hue	√		√			
Danang City	√					
Nha Trang		√			√	
Dalat		√				
Ho Chi Minh City	√					
SaPa	√					

Sources: Duke CGGC based on Jordan's Ministry of Tourism and Antiquities and VNAT, 2010.

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CHAPTER 6: CONCLUSION

Meeting the Upgrading Challenge: DYNAMIC WORKFORCES FOR DIVERSIFIED ECONOMIES

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I. Introduction

This final chapter summarizes the findings of the "Skills for Upgrading: Workforce Development and Global Value Chain Upgrading in Developing Countries" research project funded by RTI International and carried out by the Duke University Center on Globalization, Governance & Competitiveness (Duke CGGC). This research project examines workforce development strategies in developing countries in the context of shifting upgrading dynamics of global value chain (GVCs). Little research has been published on workforce development in GVCs and there is no widely accepted methodology for understanding its role in upgrading. While value chain practice has been widely adopted in recent years for enterprise and industry development, GVC upgrading has been discussed without fully unpacking how human capital and knowledge support the shift to higher value-added activities. The firm has been largely treated as a "black box" with little attention paid to the process of skills acquisition or how knowledge transferred through the chain is assimilated by individual actors (Morrison et al., 2008; Ramirez & Rainbird, 2010).

To address this knowledge gap, we have examined the role of workforce development in GVC upgrading in four global industries: fruit and vegetables, apparel, offshore services and tourism. We find that workforce development initiatives facilitated upgrading both within the GVCs themselves, such as intra-firm training and learning from buyers, and also via the local institutional educational frameworks in which the chains are embedded, such as national education and training systems. Our research shows that formal local educational institutions are not well aligned with the skills required by GVCs. These dynamic chains demand "upgradeable" individuals who can learn in a rapid and effective manner, yet local institutions are not adequately prepared to future-proof the workforce in this way. As a result, complex local arrangements are emerging in developing countries to support skills upgrading, encompassing a broad range of stakeholders both within and beyond the chain. These stakeholders include private firms, public and private institutions in education, governments, non-governmental organizations (NGOs), industry associations and international donors. [1]

[1] It should be noted that while the project examines which workforce development initiatives were employed to facilitate upgrading, impact assessments and evaluations of the effectiveness of individual training programs were not conducted. The inclusion of a program should not be considered an endorsement of its success.

This paper is structured as followed: First, we outline the GVC methodology we have followed to examine workforce development in developing countries. Second, we present our key findings in four thematic areas: upgrading, workforce skills, institutions and stakeholders, and global standards. Finally, we offer a list of recommendations regarding workforce development strategies for donors and development practitioners to enhance the upgrading efforts and competitiveness of developing countries in global industries.

II. Global Value Chains and Workforce Development

A. Global Value Chain Analysis

The evolution of GVCs in sectors as diverse as agricultural commodities, apparel, tourism and business service outsourcing has significant implications in terms of global trade, production and employment, and how developing country firms, producers and workers are integrated in the global economy. By gaining access to developed country markets, participation in GVCs offers emerging countries an opportunity to add value to their local industries. For many countries, especially low-income nations, the ability to effectively insert themselves into GVCs is vital for their development, generating more and better jobs, and reducing unemployment and poverty levels. Understanding how GVCs operate and how developing countries can participate in them has thus become an important issue for development practitioners. In this section, we provide a brief introduction to GVC analysis.

Global value chains, by nature, are highly dynamic and globally competitive, with participation generally governed by powerful **lead firms.** "The manner in which these firms exercise their power determines how financial, material and human resources are allocated and flow within a chain" (Gereffi, 1994, p. 97), in addition to being the central factor for the generation, transfer and diffusion of knowledge leading to innovation (Humphrey & Schmitz, 2002, p. 1018).[2] Firms participating in the chain face increasing pressure to improve efficiency from both lead firms and a growing number of competitors around the world. "For producers to maintain or increase incomes in face of this pressure, they must either increase the skill content of their activities and/or move into market niches which have entry barriers and are therefore insulated to some extent from these pressures" (Humphrey & Schmitz, 2002, p. 1018). In the GVC literature, this movement to higher value activities in order to increase the benefits (e.g., security, profits, value-added, capabilities) from participating in global production is referred to as **economic upgrading** (Gereffi, 2005, p. 171). Economic upgrading is often an imperative for enterprise competitiveness and even for industry survival.

[2] In the GVC literature, this is referred to as "chain governance". The governance structure of a chain is identified by the ability of one or more stakeholders to determine, control and/or coordinate the activities of other actors in the chain. The firms that set these parameters are known as "lead firms" and they help determine participation in the chain as well as how value is distributed within the chain (Frederick & Gereffi, 2009).

Within the GVC framework, several forms of upgrading have been identified. These include: *product upgrading*, or moving into more sophisticated product lines; *process upgrading*, which transforms inputs into outputs more efficiently by reorganizing the production system or introducing superior technology; and *functional upgrading*, which entails acquiring new functions (or abandoning existing ones) to increase the overall skill content of the activities.[3] These upgrading patterns differ by both industry and country, based on the input-output structure of the value chain and the institutional context of each country. Product-based sectors often follow linear upgrading and countries must gain expertise in one segment of the value chain before upgrading into the next segment. Service industries usually present multiple upgrading trajectories that can occur in parallel. Importantly, both upgrading and downgrading can occur in an industry, as firms opt to improve their performance at a lower value segment rather than pursue more complex or capital-intensive functions within the value chain.

Given their prominence in global markets, lead firms in GVCs have been fundamental in shaping how industries in developing economies are organized to respond to global demand and how they upgrade. Lead firms often dictate the exact characteristics of what is to be produced and how it must be produced. This interaction between the lead firm and local suppliers supports learning due to a large flow of information between actors that can stimulate upgrading in developing countries (Gereffi, 1999). Today, lead firms rely increasingly on **global standards** to reduce the complexities of these transactions as they place new demands on the value chain. These standards establish the rules for information exchange, shape firm behavior and ensure quality in GVCs. They enable the codification of both product and process specifications to ensure that a wide range of global suppliers can consistently deliver end products that meet the quality requirements of developed-country markets. They are industry-specific and constantly evolving. Failure to comply with these standards can result in exclusion from the GVC.

International standards have become a major determinant of market access (Kaplinsky, 2010; Lee et al., 2010). Global standards have pushed developing countries to direct their industries into product and process upgrading.[4] However, knowing the standard and adopting the protocol is often neither straightforward nor immediately possible for all actors in an industry. In developing the capacity to meet standards, many producers must enhance their efficiency and systematically increase productivity (Altenburg, 2006).[5] An adequately prepared workforce is thus required to absorb and adapt this information and apply it commercially. However, many developing countries do not possess the needed people and local institutions to do this.

[3] In addition to the three upgrading processes mentioned above, firms can also undergo *chain or inter-sectoral upgrading,* where firms move into new but often related industries.
[4] Meeting standards does not automatically result in upgrading, but rather standards provide firms with all of the tools required to achieve this outcome (Kaplinsky, 2010).
[5] For example, it may require them to reorganize their plants or production lines, change inventory practices or incorporate new machinery.

With appropriate institutional and workforce capabilities, developing country firms can become highly competent suppliers within GVCs and provide a strong rationale for global lead firms to outsource in order to gain access to complementary competencies (Gereffi et al., 2005). Through customized and complex exchanges between the two actors, lead firms leverage competent suppliers for additional innovation and product differentiation. This can result in functional upgrading into higher value activities (Kaplinsky & Morris, 2001).[6] Our study has sought to identify the conditions under which the upgrading of workforce skills and institutional capabilities can be facilitated in developing countries.

B. Workforce Development

Participation in global value chains heightens the sense of urgency with which developing countries must confront the shortcomings in their workforce development systems or lose the opportunity to integrate effectively and gainfully into the global economy. In this section, we clarify our understanding of workforce development as a concept then highlight several of the challenges that developing countries currently face in meeting the demands placed on them by GVCs.

We define workforce development as the process by which a territory's initial endowment of human capital is converted via multiple channels—education, training and relevant services such as labor market intermediation, exchange and information—into a source of competitive advantage for firms and industries in the territory. In practice, workforce development refers to a dizzying array of education and training practices including, but not limited to: general basic education and secondary education, vocational education, higher education and lifelong learning, as well as pre-employment training, off- and on-the-job training, apprenticeship training, formal and informal training and entrepreneurship training (Creticos et al., 2009). Training may be funded by various entities: government, business, labor unions, professional associations or individuals. The main providers of training include: 1) Formal public and private vocational training and technical schools, community colleges and universities; 2) non-formal institutions, including private firms and non-governmental organizations; and 3) informal education through on-the-job training and firm-based training (McPherson & Fawcett, 2009).

Core Challenges of Matching Skills and Jobs

According to the current U.S. Agency for International Development (USAID) Education Strategy (2011, p. 13), "An effective workforce development strategy must include demand-driven systems that offer a wide range of education, training and information for skills development and creation of a new mindset for work." Yet effective matching of skills and jobs is challenging even for advanced industrial

[6] In cases where lead buyers are particularly strong, these firms may inhibit or slow functional upgrading of a supplier into the highest value added segments should it become capable of providing functions that the buyer considers core competencies (Altenburg, 2006; Humphrey & Schmitz, 2002).

economies; thus it should not be surprising that for developing countries—especially those with large populations of unemployed or underemployed youth—it is particularly complicated. While there is general consensus that tailoring workforce development needs to industry requirements is essential for developing countries, this has been particularly difficult for these nations to implement for multiple reasons, including lack of resources, poor information channels, institutional challenges and political will.

First, as Creticos et al. (2009, p. 11) explain, " In addition to having to expend substantial resources to achieve universal basic levels with respect to literacy and numeracy, [developing-country governments] must also prepare the workforce to take on an array of jobs that are tied to the current and *projected* absorptive capacity of the economy. The challenge is in getting the answer on projected absorptive capacity right since jobs do not yet exist because the businesses that create these jobs also don't exist." This challenge is often beyond the economic resources and capabilities of developing countries. By mapping out some of the varied upgrading trajectories in global value chains, GVC analysis can provide guidance for developing countries regarding future workforce needs and highlight the main workforce development initiatives that developed and developing countries have taken to achieve this upgrading. Scarce resources can thus be focused more effectively to target future skills needs.

Second, there are information challenges that impede consensus among experts regarding how developing country governments and education systems can deliver relevant skills. Successful industry-focused workforce development initiatives in developed countries have not been translated into broader policy prescriptions. For example, private sector employment agencies such as Manpower Inc., and most U.S. and European states, community colleges and other education institutions, cultivate intense, direct employer engagement for the purpose of identifying skills in high demand. Some U.S. states have even experimented with linking educational budgets to programming that is oriented toward high-demand occupations. Yet, eager to avoid reversion to centralized "manpower planning," more conservative advisors continue to advocate that developing countries should primarily rely on labor market signals (i.e., changing wages and unfilled vacancies) to determine workforce development priorities (Crouch, 2009). While this strategy may be sufficient in industries oriented to the local market, they are not adequate in highly competitive GVCs, where countries actively court global firms and a less proactive approach to workforce development has the potential to result in exclusion from the chain.

A third challenge is that many developing-country technical and vocational education and training (TVET) systems often have a strong constituency that favors training through traditional public sector institutions, despite the rise of non-formal and NGO-led training and the prevalence of informal education. Many of these institutions have adopted the rhetoric of demand-driven workforce development, including industry advisory boards, soft-skills training and lifelong learning. Yet institutionally, they have been unable to restructure their approach to ensure the provision of actual demand-driven training. They

typically remain focused on institutional (input-driven) quality standards related to accreditation (curriculum, teacher qualifications, standards for physical infrastructure and equipment), rather than labor market relevance. Succinctly put, "Little funding for vocational secondary education has led to obsolescence and low quality of the system. Under these traditional systems, there have been few links with the private sector, and little emphasis on 'demand-driven' skills" (McPherson & Fawcett, 2009). When developing countries engage in GVCs, this problem is magnified. These chains require demand-driven skills that are determined at the global level by powerful lead firms who dictate industry norms and standards.

III. Methodology

Despite the crucial contributions workers make in labor-intensive global industries, the role of workforce development in the expansion of GVCs across developing countries has not received adequate attention (Ramirez & Rainbird, 2010). In the last few years, however, GVC researchers have begun to prioritize labor issues (see, for example, (Posthuma & Nathan, 2010)). In particular, social upgrading has gained significance, that is, the impact of global production and trade on the social conditions of workers in developing countries (Barrientos et al., 2010). The goal of our "Skills for Upgrading" project has been to complement this approach by exploring how the conditions of workforce development within developing economies can be brought into closer alignment with the upgrading requirements of global industries, using the experience of countries that have successfully upgraded in GVCs as a guide.

We selected four key global industries for this study: fruit and vegetables, apparel, offshore services and tourism. These industries are important drivers for economic development, poverty reduction and growth for developing countries for several reasons.[7] First, these industries are accessible because there are relatively low barriers to entry in terms of capital investments, technology and skills. Second, they are labor-intensive industries that provide significant employment opportunities for developing countries. Tourism generates an estimated 235 million jobs globally, which is equivalent to approximately 8% of total global employment (ILO, 2010). Apparel provides more than 25 million jobs in low- to mid-income economies, in particular providing job opportunities for vulnerable sectors of the labor force including females and ethnic communities (Dicken, 2007). The fruit and vegetables sector has shown tremendous employment potential both pre- and post-harvest, although precise job numbers are typically available only for specific regions and countries (Joshi et al., 2004; World Bank, 2009), while offshore services have created a demand for new and relatively high-skill service jobs in developing countries and accounted for approximately 4.1 million jobs in 2009 (McKinsey Global Institute, 2009).

[7] In order to select the industries for this study, leading development agencies, including the World Bank, the International Labor Organization and USAID, were approached and queried about their priority economic sectors.

In order to identify emerging trends in workforce development, the research was carried out in three main steps: (1) initially we mapped the structure of the GVC for each industry in terms of its principal activities, value adding stages and lead firms; (2) we identified and analyzed individual developing countries that varied in their level of upgrading within each industry in order to show the main challenges at entry, middle and high levels of upgrading; and (3) we carried out a comparative analysis of the key lessons regarding the role of workforce development in developing country upgrading. These analytical steps thus allow us to illustrate how these global industries operate, what upgrading requirements and opportunities are available for developing countries and they provide a context to evaluate how workforce development components may contribute to or hinder the industry's success.

The countries selected for analysis vary in terms of global region as well as levels of economic development**:**

Table 6.1. Global Value Chains and Countries Selected for Analysis, by Upgrading Stage

Global Value Chain	Upgrading Stage of Countries		
	Entry	Mid-level	Advanced
Fruit and Vegetables	Jordan, Honduras	Morocco, Kenya	Chile
Apparel	Lesotho, Nicaragua	Bangladesh, Sri Lanka	Turkey
Offshore Services	Philippines, Spanish speaking Central American and Caribbean countries	Chile	India
Tourism		Vietnam, Jordan	Costa Rica

Source: See sectoral chapters in this volume.

Analyzing the economic upgrading experience for each country in our study required that we reconstruct their upgrading trajectories from their entry into each industry until the present, focusing on the interactions between key institutions, stakeholders and their linkages with lead firms. For each of the upgrading trajectories identified in the country analysis, the corresponding workforce development initiatives and practices were explored to provide examples of how the upgrading requirements set by lead firms in the global industry were met or not in practice.

IV. Linking Workforce Development with GVC Upgrading: Key Findings

Global value chains are dynamic and offer numerous opportunities for developing countries to enter and achieve industry upgrading. The potential for upgrading, however, is often limited rather than enhanced by national education systems in emerging nations that are notably detached from GVC workforce requirements. International competitiveness today requires "upgradable" individuals who can quickly adapt to the changing demands of the global markets, yet national education systems are not adequately preparing the workforce for this. Primary and secondary education should provide basic skills that are essential to fast and efficient continued learning. Specific technical, vocational and professional education should be directly linked to existing skill requirements, while at the same time having dynamic and flexible enough curricula, programs, staffing and financing to identify and respond to the current and future requirements of GVC upgrading. In our research, we observe a number of workforce development responses in emerging nations to address the resulting skills gaps. These responses are driven by a complex mix of institutions working individually or in partnerships to prepare a workforce that can compete in the global economy.

Below, we present our main findings concerning the relationship between GVC economic upgrading and workforce development in developing countries. These findings draw from the case experience in each of the four industry studies and they highlight emerging trends for successful workforce development strategies. We believe the four global industries and approximately 20 countries that we cover in this study are a good starting point to derive some meaningful lessons, but clearly solid generalizations will require more extensive research on these topics. We summarize our findings according to three features of workforce development that are most impacted by GVC upgrading: workforce skills, stakeholders and institutions and the role of global standards.

Workforce Skills

Appropriate worker skills are essential to industry upgrading. In all of the industries analyzed, diverse background conditions shape the need for upgrading and participation in GVCs. For example, adequate climatic conditions are essential in the fruit and vegetables industry, trade agreements play a central role in the apparel sector and an attractive location is critical to tourism. However, in all of these GVCs, improving worker skills is a common requirement for entering and upgrading. A skilled workforce is an essential competitive asset for industry upgrading. This is particularly important in the fruit and vegetable industry, where human capital has been identified as the only *controllable* factor in the industry (Lopez, 2010). Chile, for example, adopted workforce development strategies for upgrading at the end of the 1990s, and today it not only exports fresh fruit and vegetables, but also processes 50% of production before export.

The focus of workforce development must reflect both local needs and those of the global economy. Previously, the workforce development paradigm highlighted demand-driven training defined by the needs of local firms. Today, demand is driven by global lead firms or actors who establish new standards, protocols, products, processes, etc., requiring both local and international suppliers to comply. In both the apparel and the fruit and vegetable sectors, lead firms dictate industry norms not only with respect to product characteristics and quality, but also production processes. Apparel manufacturers, for example, are regularly audited by all of their major buyers such as The Gap and Liz Claiborne, and they evaluate production standards, labor codes of conduct and environmental impact, as well as productivity and quality assessment. Failure to meet these standards can result in loss of contracts and access to key markets.

A new and evolving set of workforce skills is needed to participate in GVCs. Insertion in GVCs requires a new set of skills beyond those necessary to operate in the local economy. These new skills must keep pace with continuous and rapid change, new quality and safety protocols and more sophisticated products and services. Workers must now possess both basic abilities and interpersonal skills, such as literacy and numeracy, ability to find information, identify and define problems, work well with others and be eager to acquire new abilities. For example, traceability requirements in fresh produce markets require farmers to read and write in order to track all farm activities, from pesticide application to the number of trees pruned. Due to the dynamic nature of global industries, lifelong learning is mandatory in order to participate and upgrade in GVCs. This is particularly important in industries with a high reliance on technology, such as offshore services, where information technology is changing at an extremely rapid rate.

Required skills and workforce development needs vary substantially by stage within industry-specific upgrading trajectories. In many cases, product and process upgrading may involve upgrading the skills of the existing workforce through on-the-job training, short-term courses and specific certifications, while upgrading into higher value segments of the value chain can require workers with an entirely different set of skills and education. In process and product upgrading, most workers can be trained in-house, while specialized personnel require formal education to lead upgrading effectively. The introduction of information technology (IT) into the tourism industry is a key example; while front office employees could be trained on the basics of computerized reservation systems, specialized IT professionals were required to determine which programs should be used and how they would be implemented. In the case of functional upgrading, completely new skills must be found in the labor market. These employees must have acquired the necessary skills from the formal educational sector or previous experience. Upgrading from business processing outsourcing (BPO) to knowledge process outsourcing (KPO) activities in the offshore services industry, for example, requires more sophisticated analytical staff, who must have an undergraduate or graduate degree in business administration.

Workers need "soft skills" in today's world of work. Workers lacking interpersonal skills related to teamwork and effective communication face limitations in how they perform daily activities, and how they process information from managers during on-the-job training activities. Our study shows that all industries demand employees with better non-technical skills and "upgradable" potential. These characteristics include leadership, teamwork, communication and conflict management skills, which can substantially increase productivity and adaptability in the changing global environment. Employers often prefer to hire workers with a willingness to learn, who can absorb and process new information and are quick to follow instructions. This is one of the main constraints to upgrading the skills of an existing workforce and thus successfully achieving upgrading. To circumvent these problems, firms in offshore services in the Philippines, India and the Caribbean have focused on hiring staff for the BPO segment with a broad set of skills acquired at the university level, rather than recruiting based on technical skills.

In developing countries, managerial skills for GVCs are in short supply. One of the main problems of today's GVCs is a shortage of effective managers. Good managers affect industry productivity and have an important impact on workers' skill development. Managers are usually in charge of on-the-job training activities, a widely used training method to address workforce needs. When good managers are lacking, performance suffers and firms have difficulty complying with global requirements. In the apparel sector in Lesotho, foreign managers in Taiwanese-owned factories do not speak the local language and are incapable of communicating and training workers. By contrast, firms under South African management where managers have similar cultural and language backgrounds have acquired skills more rapidly through on-the-job training.

Upgrading in GVCs requires more and better professionals and technicians in bottleneck positions. The labor component of every upgrading stage across all industries includes both a critical mass of workers and well-educated professionals with specific expertise. These professionals are often in short supply in developing countries, creating bottlenecks for future activities. At the same time, their preparation is seen as "low volume, high cost," making it more difficult for training institutions to respond effectively. Best practice indicates that leveraging international expertise – either through study abroad scholarships, as Chile did for offshore services, or through hiring foreign consultants, as Turkey did when upgrading into design in the apparel industry – can help supply the required professionals in the short term, giving educational institutions time to develop programming to meet the escalating demand for highly qualified and experienced technical and professional labor.

Stakeholders and Institutions

Local education systems currently do not provide skills required by GVCs. In each of the industries studied, the private sector reported a mismatch between the skills provided by educational institutions and their workforce needs. This is particularly notable for public education institutions. Today, these gaps typically are filled by other institutions, which increases the comparative cost of labor in developing countries and can affect their competiveness and ability to achieve upgrading. In the hotel sector in Costa Rica, large multinational hotel chains with growing operations in the country had to set up their own internal training programs since the National Training Institute (Instituto Nacional de Aprendizaje or INA), the only educational institution offering programs, was limited to basic hospitality services. As the industry continued to upgrade, the private sector successfully lobbied the INA to change and expand their curriculum to meet the needs of the industry.

Technical training institutions and universities should coordinate more closely with industry stakeholders. Formal communication channels between private sector and educational institutions (public and private) are weak or nonexistent in many developing countries. This makes it difficult for graduates to develop the skills required for employment in GVCs. Educational institutions are generally more successful when they have a high degree of interaction with industry stakeholders. Industry coordination and collaboration have proven effective in aligning skills training to relevant needs. For example, India's success in the offshore services industry is to a large degree the result of the private sector actively taking a role in workforce development. In some cases, such as the leading Indian companies Infosys and Wipro, firms created in-house universities to teach students the specific skills required, while in others, the private sector engaged with existing educational institutions to provide new courses for the curriculum and internship programs to ensure that students have practical experience by the time they graduate and enter the workforce.

New actors can provide the skills required by GVCs. Traditional skill providers have been replaced or assisted in filling today's skill gaps. These new actors include individual firms, industry associations, special government programs and NGOs. In Costa Rica and Jordan, professional associations in the tourism sector provide their members training in areas such as language skills and management. In the fruit and vegetable sector, several NGOs in developing countries provide skills training to farmers to meet standards and compete at the global level. In other cases, the government has played a central role to promote specific forms of skills upgrading. For example, to support the growth of the offshore services industry, the Chilean government established and funded a series of English-language programs, increasing the labor supply of English-speaking agents. In particular, partnerships established between stakeholders have proven to be successful in meeting the skills needs of the GVCs, such as in Sri Lanka,

where the apparel industry association, JAAF, partnered with the government and individual firms to develop a comprehensive skills manual, "Competency and Beyond", incorporating the competencies required for all positions in the apparel GVC.

Private sector intermediaries can facilitate upgrading and workforce development. A united voice for industry needs has been a catalyst for improving worker skills. Trade associations, often in partnership with other stakeholders, have begun to establish job profiles, competencies and best workforce development practices to meet global standards. The creation of AGROCAP in 1999 by the Chilean fruit and vegetable export association (ASOEX), which acts as an intermediary between private firms and education and training institutions, allowed the sector to rapidly assess workforce development needs, tailor training programs and disseminate best practices for the industry.

Public-private partnerships have emerged as an efficient and effective method for workforce development. Workforce development best practices are the result of a sound organization among the private sector, industry associations, educational institutions and government. These partnerships allow each stakeholder to contribute its best resources to create successful workforce development practices. Notable cases from our studies include the regional skills certification initiatives undertaken for the tourism industry in the Caribbean and amongst the ASEAN countries, and public-private councils in Chile in the offshore services and fruit and vegetable sectors, which provide a forum for information exchange and collaborative initiatives.

Global Standards

Global standards define the upgrading requirements for the local workforce. Lead firms have become very influential in establishing standards for GVCs due to their power to restrict access to high-value markets. Local producers must comply with these standards or find alternative buyers. In response, we observed the private sector in developing countries undertaking workforce development initiatives according to global standards. In Kenya's horticulture sector, workforce development training is increasingly focused around Kenya GAP, the locally certified equivalent of the widely adopted private standard, GlobalGAP. Training to adopt these good agricultural practices is now targeted both at exporters and at farmers supplying the local market. In addition, one large exporter, Homegrown, has also adopted pro-gender initiatives in line with codes of conduct established by lead buyers, and provides workshops in discrimination and sexual harassment for supervisors and managerial staff.

Multi-stakeholder partnerships in developing countries coalesce in response to global standards. On-the-job training has been widely employed to rapidly upgrade worker skills according to global requirements. Industry associations, such as JAAF in Sri Lanka's apparel sector, ASOEX in Chile's fruit and vegetable industry, and ACOPROT in Costa Rica, have defined the skills needed to comply with

global standards, and they have partnered with educational institutions to modify curricula content to align it with global standards. In certain cases, such as Chile, they have also collaborated with the government to finance training programs to provide the required worker skills. In several countries, governments have proactively assisted the private sector to meet global standards to avoid expulsion from GVCs, while in the least developed countries, such as Kenya, NGOs have been an effective actor in the absence of active industry associations or government involvement.

National certification of skills can be a powerful tool for GVC labor markets in developing countries. We observe successful outcomes for worker skill certifications where industry associations, government and educational institutions work together. Success is particularly notable where skills are aligned with international standards requirements. Both skill level and portability are increased for certified workers. Competency certifications reduce transaction costs related to recruitment and selection and facilitate labor mobility. This helps foster the establishment of a competitive labor market, based on skill level rather than contacts or perceptions of skills, based on factors such as gender. The Chilean National Skills Certification program has been applied to 15 different industries, including the fruit and vegetables sector. These certifications are valid for a period of three years, underscoring the fact that the requirements of GVCs change rapidly, and thus workforce development must be approached from a lifelong learning perspective.

V. Recommendations

Our research indicates that global demand-driven workforce development, which actively involves private sector actors, can be an efficient instrument to achieve economic upgrading in global industries. The following policy recommendations are specifically related to needed improvements in workforce development practice to cope with a world in which GVC participation structures economic opportunity, and to gain advantage in traded sectors.[8] Overall, policies must focus on upgrading the skills both in the current and future labor force. In the short to medium term, they must identify and resolve gaps in current workforce skills at all required skill levels, and in the long term addressing these needs directly through the education system. Due to the dynamic nature of the global economy, one must keep in mind the concept of lifelong learning because new gaps will emerge over time as industries evolve.

[8] Demand-driven workforce development assumes previous analysis of which industries a country can successfully enter or compete in; where in the value chain a country/region is positioned; and potential upgrading trajectories in the short and long term.

Recommendations for Workforce Development Policy and Practice:

Establish opportunities for dialogue, information sharing and collaboration regarding workforce development, both domestically and internationally, between different stakeholders to drive GVC upgrading:

- **Support Upgrading-Focused Industry Dialogue:** Promote and support industry and/or trade associations that bring together firms in the private sector specifically to identify potential gaps in skills and to determine workforce development needs for proposed GVC upgrading.
- **Create International (South-South) Alliances:** Establish or enhance forums for information sharing between industry and/or trade associations from different developing countries regarding job profiles, competencies and best workforce development practices to meet global standards at various levels of upgrading.
- **Promote Awareness of Global Standards and Requirements in Sector Skills Councils:** Create councils/forums that bring together educational institutions and the private sector to facilitate the flow of information between the sectors focused on curriculum improvement to ensure that skills training meets global industry needs and standards.

Globalize national and regional skills standards:

- **Create Venues for Multi-Sector Collaboration:** Create venues for government, educational/training institutions and private sector to collaborate in the alignment of national skills standards and certifications with global industry expectations and standards.
- **Align National/Regional Frameworks with Best Practice Certifications:** Develop a national/regional certification of skills system based on global industry needs and in alignment with other successful certification systems around the world. This can be facilitated by donors that have successfully helped to establish qualifications frameworks and skills certifications in other countries.
- **Certify Skills Obtained in Formal and Informal Training:** Pursue a dual approach to certifications: 1) embed certifications in the formal education and training framework; and 2) provide certification for existing workforce based on assessment of previously obtained skills and experience.
- **Work to Globalize Innovative Skills Certifications:** Where developing countries, alone or in regional groupings, are "first to market" with skills certifications, work to establish these as the *de facto* regional, or even global, standards to create competitive advantage in working with GVCs.

Establish or restructure frameworks for regulation and accreditation in the training and education sector:

- **Identify and Address Gaps:** Help existing TVET institutions and universities identify and remedy gaps with respect to their capacity to meet the skills needed for participation in GVCs.
- **Incorporate Awareness of Global Industry Requirements into National Accreditation:** Convene government, educational/training institutions and private sector representatives to determine appropriate quality and content criteria for accreditation of education/training institutions that are aligned with global industry expectations and standards. Global industry dynamics require periodic updating and auditing of these accreditation standards.
- **Provide Incentives for Accreditation:** Incentivize accreditation of institutions through policy instruments such as training tax incentives to the private sector for engaging accredited organizations.

Formalize communication channels between educational institutions and the private sector:

- **Engage Employers around Upgrading:** Develop or enhance formal channels of communication with the private sector regarding the skills to be incorporated into the curriculum (e.g., program-level advisory boards), with an explicit focus on present and medium term (1-3 year) upgrading plans and related human resource requirements.
- **Promote Business Engagement in the Classroom:** Create or enhance opportunities for private sector representatives to participate in classroom settings, for example, as visiting lecturers or adjunct teachers.
- **Support Career Counseling and Development:** Promote establishment of career counseling and development functions within technical schools and universities or external intermediaries that facilitate internships and job placement. Continue to professionalize the career counseling function.

Embed GVC upgrading priorities in the local education system for sustainable long term growth: These policies measures are designed to prepare the national labor force for future participation in GVCs.

- **Basic Education**: Improve primary and secondary basic education (literacy, numeracy, etc.)
- **Soft Skills**: Improve primary and secondary education in soft/interpersonal skills (leadership, teamwork, communication, problem solving, etc.).
- **Business School Curricula:** Encourage awareness of and development of managerial skills for global GVCs in technical schools/universities.

- **Training for Bottlenecks:** Create special funds to establish or strengthen technical/university offerings that provide high cost/low volume training to address skill bottlenecks, for example, through establishment of minors or concentrations in unusual skill areas.
- **Improve Labor Market Information and Graduate Tracking:** Improve data collection regarding numbers, skills and wage evolution of graduates of TVET institutions, universities and certifications relevant to GVCs to facilitate career decision-making and enhance investment promotion efforts.

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Appendix:
Executive Summaries

Fruit and Vegetables Global Value Chain: Economic Upgrading and Workforce Development

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Executive Summary

This report uses the global value chain (GVC) perspective to examine the role of workforce development initiatives in a number of developing countries that are participants in the global fruit and vegetable industry. Since the 1980s, international trade of fruit and vegetables has been characterized by tremendous growth, driven by rising incomes and the expansion of the middle class worldwide. At the beginning of the 21st century, the global industry accounted for US$56.1 billion, and, by 2008, exports reached more than twice that value at US$139.6 billion (UNComtrade).[1] Motivated by this growing global demand, developing countries have actively pursued the production and export of this high-value agricultural subsector and have successfully captured a large portion of the horticultural[2] market.

The horticulture export industry offers an important source of employment for developing countries. Cultivation of fruit and vegetables is substantially more labor-intensive than growing cereal crops and offers more post-harvest opportunities to add value (Joshi et al., 2004; Weinberger & Lumpkin, 2005; World Bank, 2009). Packing and processing services—such as washing, chopping, and mixing as well as bagging, branding, and applying bar codes—are now often carried out at the source rather than at the end-market destination. Despite the labor-intensive nature of the industry, workforce development has been underestimated in this sector in the past, as horticultural operations typically employed rural workers with a minimum level of education. As the complexity of the value chain increases, growing competition amongst developing country suppliers and the enforcement of strict public and private industry standards, workforce skills are becoming a more important factor for industry competitiveness.

This report examines the role that different workforce development initiatives have played in the evolution of the global fruit and vegetable industry in five developing countries: (1) Chile, (2) Jordan, (3) Kenya, (4) Honduras, and (5) Morocco. These nations represent different stages of industry development. Chile is the country that has achieved the greatest value chain advancement in the sector. While Morocco currently exports more than Kenya, Kenya has been more successful in its upgrading initiatives taking on an

[1] Fruit and vegetables consumption has been positively correlated with income levels, with per capita consumption being the highest in high-income countries (Wu Huang, 2004).
[2] Generally, the term "horticulture" includes the production of cut flowers in addition to fruit and vegetables. Cut flowers, however, are not included in this study and references to horticulture in this paper refer to the fruit and vegetable sectors.

important role in providing packing services for major supermarket chains in European Union (EU) and exporting a higher-value product. Honduras and Jordan offer two examples of smaller countries that are entering the value chain.

Our analysis reveals the following findings with respect to workforce development and upgrading in this sector. The main stages of the horticultural value chain are as follows:

(1) **Inputs:** Elements needed for production, such as seeds, fertilizers, agrochemicals (herbicides, fungicides and pesticides), farm equipment, and irrigation equipment.
(2) **Production for Export:** Includes the production of fruit and vegetables and all processes related to the growth and harvesting of the produce, such as planting, weeding, spraying, and picking.
(3) **Packing and Cold Storage**: Grading, washing, trimming, chopping, mixing, packing, and labeling are all processes that may occur in this packing stage of the value chain. Once the produce is ready for transport, it is blast chilled and placed in cold storage units ready for export.
(4) **Processed Fruit and Vegetables** include dried, frozen, preserved, juices, and pulps. Many of these processes add value to the raw product by increasing the shelf life of the fruit and vegetables.
(5) **Distribution and Marketing:** The produce is distributed to different channels, including supermarkets, small scale retailers, wholesalers, and food services.

Due to the fragile and perishable nature of the product, this industry requires a high degree of coordination between the different actors along the chain and each stage requires a strong emphasis on workforce development to drive both productivity and upgrading. Logistics and transportation are key supporting activities in the global fruit and vegetable value chain. These functions ensure the perishable product reaches its destination in good condition. Cool storage units are used throughout the chain to keep the produce fresh, and both air and sea freighting supported by the cold chain are key elements to ensure timely delivery.

Economic Upgrading

Several basic conditions must be met for a country to enter the fruit and vegetable value chain. These include climate allowing for year found supply; adequate road and transport infrastructure, such as ports and airports, essential for moving fragile produce to market efficiently; establishment of sanitary and phytosanitary regulatory systems to prevent diseases spreading around the world; and favorable trade policies that improve the competitiveness of the supplier.

Conditions for entry into the fruit and vegetable GVC have changed as a result of the adoption of rigorous standards in the industry. Entry is now much more difficult for newcomers to the industry than it was for suppliers, such as Chile and Kenya, which began exporting in the late 1980s and early 1990s. Today,

entry strategy into the global produce market for some developing countries, such as Honduras and Jordan, requires them to leverage regional markets where standards are generally less rigorous. Only countries that are able to comply with high standards are rewarded with easy access to developed countries' markets. Conversely, countries that have problems in meeting the standards may lose the export market.

Developing countries have experienced greater success upgrading into the packing segment of the value chain than into the processing segment. Upgrading into packing is dependent on understanding the market needs, investment in capital goods and the availability of supporting activities within the country.

- Understanding the market is a priority in this sector, especially as this is a buyer-driven value chain. Maintaining open lines of communication regarding demand preferences in products, quality, packing—and fostering buyer involvement—is critical in all stages of the value chain. Associations in Chile and Kenya, for example, organize trips to key markets, and they observe interactions at the point of purchase.
- Investment in new technologies increases the shelf life of produce. Kenya upgraded into the packing segment via initial investments by private firms in a wide variety of equipment to attain very high standards of hygiene within the packhouse operations, as well as on-site laboratories for product and staff health tests (Jaffee & Masakure, 2005).
- Upgrading into the packing segment depends significantly on the existence of a local packaging industry to supply the appropriate containers on a regular and reliable basis. Jordan's horticultural sector has been greatly inhibited in its upgrading along the value chain by the lack of good quality packing materials. Much of the produce destined for the EU is shipped to neighboring countries where it is repackaged, resulting in a significant loss of value for Jordan.

Upgrading into the processing segment of the value chain has been difficult to achieve for low-income developing countries since the processing of fruit and vegetables is cost prohibitive at low levels of crop production. Therefore, countries must gain a level of expertise during the production stage to increase output to a level that will enable the country to upgrade to the fruit and vegetable processing stage. As a result of joint efforts by the government and private sector to expand and add value to fresh fruit and vegetables, Chile is the only country in this study that has been able to effectively upgrade into the processing segment to date.

Product and process upgrading emerged as key elements in industry development in the country studies. Process upgrading was essential to help all of the countries studied to meet the growing number of public and private standards in both the production and packing segments of the chain. The health and safety protocols in packhouses, for example, have been key factors in protecting consumers from disease

and meeting Sanitary and Phytosanitary Standards (SPS) around the world. Product and process upgrading to cultivate and handle increasingly fragile and perishable product varieties in Chile (berries), Honduras (Asian vegetables), and Kenya (French beans) offer greater financial returns than commodified fruit and vegetables.

Global-Local Interactions

Given the significant level of buyer control in this value chain, producers in developing countries are directly impacted by the requirements and practices of lead firms. Two particularly important consequences for industry upgrading are discussed below.

First, lead buyer requirements and standards have led to the restructuring of the supply chain in all of the countries studied, favoring mid-size and large producers and exporters that can more easily meet new demands. While this has led to the exodus of many smallholder farmers from the industry, the private sector's focus on training and development and investment in capital goods allows for more rapid upgrading.

Secondly, the implementation of these standards has had an impact on the end-markets targeted by developing countries. Only countries that are able to comply with high standards are rewarded with easy access to developed countries markets. While both Chile and Kenya have been proactive in establishing standards and aligning their own Good Agricultural Practices (GAPs) with GlobalGap,[3] rather than invest in compliance initiatives, citrus producers in Morocco preferred to switch markets from the EU to Russia, which has less stringent traceability standards. In Jordan, the maturity of standards adoption is low, and they export their products to regional markets that do not have strict standards in place.

Workforce Development

These changes have begun to alter the approach to workforce development in the industry. As the case studies reveal, remaining competitive and upgrading in this sector now requires a workforce development component in order to improve productivity, meet standards, align skills with demand needs, diversify products, and develop innovative new packing systems. These workforce initiatives have been implemented in different ways across the countries: on-the-job informal training, on-the-job formal training and assessment, off-job regular classes, off-job short courses, industry training sessions, training led by educational institutions that grant a certification, training by buyers, and training by governments, nongovernmental organizations (NGOs), and donor organizations.

Four important workforce themes can be identified from the case studies:

[3] In 2008, ChileGap was validated by GlobalGap and, in 2010; KenyaGap was also authorized to act independently.

Standards training today is a basic requirement to compete in high-value markets, and efforts to reduce the cost of implementation are important to ensure adoption. This requires a number of initiatives: First, it is important to understand global requirements; second, identify the skills needed to meet these global requirements; and finally, train the workforce on those skills. Central to standards training are programs focused on food safety and health-related training, particularly to target employees in the packing houses to avoid transfer of disease from packers to consumers in other countries. In Chile, the government and private sector developed and implemented training programs to enable producers to meet the Chile-GAP standards prior to the evolution of more rigorous standards in the EU and the United States, ensuring they remained highly competitive. Previous basic training may also be necessary to ensure that standards training is successful. In Kenya and Morocco, for example, given the importance of the ability to read pesticide labels and understand barcodes amongst others, standards have led to additional training initiatives to improve adult literacy.

Return on investment for training is fundamental for providing incentives for this expenditure and ensuring overall workforce skills can rise, particularly for temporary workers. In the more advanced countries, an array of additional social benefits have been incorporated into employment arrangements, such as housing, day-care facilities for young children, and unemployment and healthcare benefits to recruit and retain labor. In Kenya, the leading firms are even reversing the tendency to rely on flexible labor and are shifting toward a more permanent workforce to capture the gains (Jaffee & Masakure, 2005). Chile's National Labor Skills Certification System, on the other hand, offers an interesting example of how the horticultural sector can benefit from improving the skills of the temporary workforce. As the Chilean industry depends mostly on off-farm labor, this helps to facilitate the mobility of skills across the industry, leading to increased productivity and maximizing national return on investment in training.

Formal higher education remains important for key positions in the value chain, and the lack of this creates bottlenecks that prevent upgrading. Agronomists are fundamental to increase the industry's productivity levels and maintain its competitiveness in production, and all of the countries studied depend significantly on this professional staff. In addition to agronomists, innovation in packing, processing, and cold chain technologies also require formal education in food technologies, food safety, and management. These positions are increasingly responsible for delivering technical assistance and training to semi-skilled and unskilled workers. Increased collaboration between educational institutions and private sector firms is important to ensure that the education programs meet the needs of the industry. In Chile, this has been facilitated through the establishment of the public-private council.

Skills training must be carried out in all job categories of the value chain to maximize growth and upgrading opportunities. Investments in training are required for all job categories, from farm workers to

managers**.** The training needs to be oriented to all value chain job categories. This industry involves three quite distinct groups of workers: (1) farming activities and the workforce within the agriculture sector; (2) packing and storage positions; and (3) the processing stage in which workers are classified under the industrial workforce. All three types of workers require training programs, albeit differentiated based on group and entry-level skills of the workers.

Institutional Involvement in Workforce Development

The private sector is a highly active stakeholder in workforce development initiatives. Training is done mostly on the job and is paid for by firms rather than individual employees. In the case of Chile, diverse set of stakeholders have been able to achieve a high level of coordination due to strong industry associations supported by the government.

The government's role in workforce development generally has been most successful as facilitator or catalyst. In the capacity of facilitator and coordinator, governments have been more effective in driving industry growth and upgrading through workforce development than through direct training initiatives. In Chile, the government offers tax breaks to companies that conduct training through certified training institutions, while at the same time, it has played a key role in coordinating the industry actors by creating a Public and Public Strategic Council, involving all the value chain stakeholders to drive the development of the sector. In other cases, like Kenya, the strong performance of the industry has been ascribed to private sector autonomy in production and marketing decisions, thus fostering significant local private initiatives and dynamism within the industry.

Foreign agencies have provided a significant portion of training related to the adoption of standards as a means to secure access to the GVC for developing countries to drive rural development. Chile is the exception, where the national government worked closely with the private sector both to develop standards and to educate the workforce on the Chile-GAP certification. A report regarding NGO-led training in Honduras indicates that the same methodology and content are used regardless of the experience level of the trainees. When training is provided in such a standard, undifferentiated format, its impact is reduced and, in some cases, it leads to the failure of many producers who were not able to apply standard technology packages (IICA, 2006). Demand-driven training—as provided by the agricultural consulting firm, Fintrac—appeared to be much more successful in Honduras. Although the interventions are funded by the U.S. Agency for International Development (USAID), the relationship between the firm and the client is managed as a professional consultancy.

The Apparel Global Value Chain: Economic Upgrading and Workforce Development

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Executive Summary

This report uses the global value chain perspective to examine workforce development initiatives in a number of developing countries that are participants in the global apparel industry. Apparel production is considered an important catalyst for national development, and often it is the typical starter industry for countries engaged in export-oriented industrialization due to its low fixed costs and emphasis on labor-intensive manufacturing. The expansion of this sector has played a critical role in the economic development of many low-income countries, which today account for three-quarters of the world clothing exports. Formal employment in the sector totals over 25 million in low- to mid-income economies (ILO, 2005).

While global expansion of the apparel industry historically has been driven by trade policy, by 2005, the Agreement on Textiles and Clothing (ATC) by the World Trade Organization had phased out many of the quotas that had previously regulated the industry. This caused a tremendous flux in the global geography of apparel production and trade, and a restructuring of firm strategies seeking to realign their production and sourcing networks to accommodate new economic and political realities (Gereffi & Frederick, 2010). This change has brought other key factors for country competitiveness to the forefront, including labor costs, productivity, and competencies. Low-cost countries—such as China, India, and Bangladesh—are emerging as leaders in the lower-value assembly segments of the value chain, while smaller countries are being forced to upgrade into higher-value segments, such as branding and design that rely on high-quality human capital to maintain their competitiveness. As a result, workforce skills will become increasingly important elements for developing economies to maintain and upgrade their positions in the global apparel value chain.

This report examines the role that different workforce development initiatives have played in the evolution of the apparel industry in five developing countries: (1) Bangladesh, (2) Lesotho, (3) Nicaragua, (4) Sri Lanka, and (5) Turkey. These nations represent different stages of industry development. Lesotho and Nicaragua are in the lowest stage of the value chain, offering only assembly operations. Bangladesh is one step more advanced because it adds purchasing and distribution capabilities. Sri Lanka has been able to add design capabilities, while Turkey is also selling their own brand products.

Our analysis reveals the following findings with respect to workforce development and upgrading in this sector:

Economic Upgrading

The main stages of upgrading in the apparel value chain are

(1) **Assembly/Cut, Make, and Trim (CMT):** Apparel manufacturers cut and sew woven or knitted fabric or knit apparel directly from yarn.
(2) **Original Equipment Manufacturing (OEM)/Full Package/Free on Board (FOB)**: The apparel manufacturer is responsible for all production activities, including the CMT activities, as well as finishing. The firm must have upstream logistics capabilities, including procuring (sourcing and financing) the necessary raw materials, piece goods, and trim needed for production.
(3) **Original Design Manufacturing (ODM)/Full Package with Design**: This is a business model that focuses on adding design capabilities to the production of garments.
(4) **Original Brand Manufacturing (OBM):** This is a business model that focuses on branding and the sale of own-brand products.

- Developing countries enter into the lowest segments of the value chain due to various advantages, including favorable trade agreements, low-cost labor, and proximity to end markets. Four of the five countries studied entered the industry principally because of favorable trade agreements. Bangladesh and Sri Lanka benefited significantly from preferential trade agreements with Europe and the United States, which facilitated their early entry and growth, while, more recently, Lesotho and Nicaragua benefited from the African Growth and Opportunity Act (AGOA), as well as the Dominican Republic-Central America Free Trade Agreement (CAFTA-DR) and Trade Preference Level (TPL) agreement, respectively.
- To upgrade into higher segments of the value chain, other factors become more relevant. These include the presence of a domestic or regional textile industry; the presence of large textile and apparel manufacturers in the country; and, in the cases of upgrading into design and branding, a strong commitment to industry growth by both the public and private sectors to develop the necessary talent and establish a national brand.

Workforce Development

The majority of workers are concentrated in the production-related segments of the value chain (CMT or OEM), and, historically, they have mainly been young, female workers with limited education. Only 3%–4% of total factory workers are not involved in assembly line positions, such as production planners, engineers, mechanical technicians, and operations support (Nathan Associates Inc., 2006).

However, while the required formal skill level is relatively low in the CMT segment of the value chain, this rises rapidly as countries upgrade into higher value stages, and workers with more advanced skills are needed to support new functions, such as logistics, finance, design, and marketing.

Despite its potential for increasing productivity and upgrading, workforce development initiatives alone play a secondary role in improving competitiveness. The case studies discussed later in this report provide several key lessons for workforce development in the sector, such as follows:

- First, in the early stages of the value chain, all of the countries studied maintain a heavy emphasis in on-the-job training carried out by supervisors to address the skills gaps in the apparel labor force, rather than the use of formal training. This preferred method of training is less costly, but it also stems from the limited number of vocational and training institutions (public or private) dedicated to the apparel industry and the mismatch between skills provided by these institutions and private sector needs.
- Second, there is frequently a shortage of skilled labor, in general, and qualified supervisors and management, in particular, to support industry upgrading in developing countries. Expatriates generally meet this skills gap or, where possible, when existing skills are not present in the local labor market, certain upstream or downstream activities are performed abroad in firm headquarters.
- Third, new initiatives are emerging from more mature suppliers to professionalize the apparel labor force, including managerial training to deal with growing pressures for lean manufacturing and compliance with corporate codes of conduct and the creation of national certifications for product and process upgrading in Turkey and Sri Lanka. Initiatives such as these are important precursors to establishing comprehensive workforce standards for upgrading.

Institutions

- In those segments of the value chain focused on manufacturing, the private sector has played the leading role in workforce development, and most firms offer internal training of entry-level employees. There have been a number of efforts by both the public sector and donor agencies to engage technical and vocational training schools in the industry, often with only limited degrees of success.
- In the two countries (Turkey and Sri Lanka) where the industry has upgraded to higher stages of the apparel value chain, we observe superior degrees of stakeholder coordination, along with some public-private partnerships (PPPs) to support workforce development. These alliances

include private firms, industry associations, educational institutions, and the private sector to improve the quality of those skills.

- Successful workforce development for ODM and OBM stages in the value chain has leveraged know-how in the developed world by engaging foreign universities in successful apparel countries to help design curriculum for local programs and hiring foreign consultants to help develop in-house talent. Fostering collaboration with successful training institutions in the developed world can speed firm- level learning for upgrading, rather than relying solely on learning through experience.
- The International Labor Organization (ILO) has partnered with International Finance Corporation (IFC), a branch of the World Bank, to establish the Better Work program to raise labor standards in global supply chains. While currently, the Better Work program has been implemented in Cambodia, Haiti, Jordan, Lesotho, Vietnam, and most recently Nicaragua, to date the ILO-IFC partnership has focused primarily on encouraging social dialogue and improving working conditions. Thus far, however, it has been unable to link participation by developing countries in the Better Work program to more favorable contracts or other long-term benefits with global buyers in the apparel value chain.

New Global-Local Interactions

- The rationalization of global supply chains in apparel, which has been accelerated by the phase out of the Multi Fibre Arrangement (MFA) quota system after 2005, is leading to concentrations in the market share of the leading apparel exporting countries and an emphasis on fewer, larger, more capable and strategically located suppliers (Gereffi & Frederick, 2010). In 2008, for example, the top two apparel exporters, China and the European Union (EU), accounted for 64.3% of global apparel exports, and the top five developing countries (China, Bangladesh, India, Turkey, and Vietnam) had 45.5% of the apparel total. In 2000, China and the EU-27 represented 46.6% and the top five developing economies (China, Hong Kong, India, Mexico, and India) 33.9% of apparel exports. This consolidation increases the importance of linking workforce development initiatives to economic upgrading in the apparel value chain, since those countries that cannot meet the demanding requirements of OEM, ODM, and OBM production risk being marginalized in the chain.
- The rapidly increasing labor costs in China, the dominant producer and exporter in the global apparel value chain, as well as a slump in demand by the advanced industrial economies, is leading to a regionalization in apparel value chains, with large emerging economies like China, India, and South Africa becoming significant new markets for nearby developing country producers (Frederick & Gereffi, 2011; Morris et al., 2011). This provides new opportunities for

low-income economies like Lesotho and Bangladesh to compete against dominant exporters like China and India, but they can only do so if they can meet the more stringent upgrading and workforce requirements of post-MFA supply chains.

- Lead firms have taken a more active role in facilitating training in two key areas: (1) quality control and (2) improving working conditions. For example, in Turkey global brands—such as Liz Claiborne, Hugo Boss, and Marks and Spencer (M&S)—train, certify, and audit Turkish suppliers on quality control, information systems, and working conditions (Tokatli, 2007).
- The impact of lead firms pushing country upgrading through demand for additional services is affected by the length and capabilities inherent in the supply chain. Our research suggests that global lead firms influence functional upgrading in countries where large integrated suppliers are based and where the domestic pressures for economic upgrading are strong, but they do not promote upgrading in countries where the factories engage only in assembly (CMT) activities.

The Offshore Services Global Value Chain: Economic Upgrading and Workforce Development

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Executive Summary

This report uses the global value chain (GVC) perspective to examine the role of workforce development initiatives in a number of developing countries that are participants in the rapidly expanding offshore services industry. The offshore services industry has emerged as a dynamic global sector in the past two decades that directly employs 4.1 million people globally. The information and communication technology (ICT) revolution that began in the early 1990s transformed the way companies do business by allowing for the separation of the production and consumption of services. The industry includes a wide array of skill-intensive activities once considered strictly the domain of the industrialized world that are now performed in developing countries. These services include information technology outsourcing (ITO), business process outsourcing (BPO), and knowledge process outsourcing (KPO) as well as industry specific services.

A GVC approach is particularly useful in exploring the dynamic workforce skill issues in the offshore services industry for several reasons. First, by definition, offshore services are global: the geographic span of the industry encompasses the home market—usually in a developed country—as well as one or more developing country markets, which provide business services at a level of value added that is significantly determined by the quality of the available workforce.

Second, the upgrading of the industry has been catalyzed by three key groups of lead firms: (1) multinational firms that established subsidiaries in developing countries ("captive centers"); (2) large global service providers from developed countries that leveraged subsidiaries in emerging markets to provide services to the developed world; and (3) a group of strong Indian firms that have grown rapidly as the industry has developed and are now established as a significant presence in both developing (operations) and developed (client and sales teams) countries. All three groups of firms have driven the market by seeking cost advantages through the geographic separation of activities and sourcing from lowest-cost locations that were capable of providing services to acceptable standards. As such, the industry provides a clear illustration of how globalization has provided opportunities for both employment and business formation in developing countries where appropriate skills are present.

Third, developing countries are engaging in market-driven development—acquiring capabilities to upgrade services (providing better services, expanding the number of services, and/or offering higher value added services)—through significant investments in workforce training and managerial capabilities, provided initially by private offshore service providers but now increasingly supported by an expanded range of public, private, and multisector initiatives. Far from a race to the bottom, involvement in the offshore services industry has provided developing country workers, firms, and governments with an attractive opportunity to build the skill-based competencies required to meet the demands of global service markets.

This report examines the role of workforce development initiatives in terms of how developing countries can enter the offshore services value chain and what is required to move up it. We examine these workforce development initiatives in-depth for six different countries: India, the Philippines, Chile, Dominican Republic, Guatemala, and El Salvador.

Our analysis reveals the following findings with respect to workforce development and upgrading in this sector:

Economic Upgrading

Five principal upgrading trajectories for the offshore services industry can be identified: Entry into the value chain; upgrading within the BPO segment; offering full package services; the expansion of IT firms into KPO services; and the specialization of firms in vertical industries. In each segment of the offshore services value chain (ITO, BPO and KPO), process, product, and functional upgrading may occur, and multiple upgrading (shifts) processes can happen simultaneously in a given country.

- Entry into the lowest segments of the value chain requires a supply of low-cost labor with basic education, as in the Philippines where wages in the call center industry are highly competitive with other industries, despite being amongst the lowest in the world.
- Entry into and upgrading through the value chain is dependent on the presence of an educated workforce that can meet global service delivery standards.
- Highly qualified labor is key for upgrading into higher segments of the value chain. Entry into high- value engineering services for mining by Chile, for example, was facilitated by the availability of a large number of well-educated engineers.

Workforce Development

While national education systems have provided the basic skills necessary in all countries, the majority of workers in this industry require additional training to fill the knowledge gap between local education systems and high-quality standards required to serve the global market.

- English-language skills' training has been central to all workforce development initiatives in all countries. In particular, English is key to upgrading the workforce, as many of the third-party providers operating in developing countries offer online training and development resources in English only. English training is also necessary for upgrading into higher value services, which include significant collaborative interactions with global communities, of which English is the main language.
- Job-specific or demand-driven training where the private sector trains staff for specific job functions is found to be the most effective means of ensuring that education and training meets the needs of the industry.
- Training in global certifications in the ITO sector is particularly important for keeping staff on the cutting edge of technology, and in turn is a requirement for upgrading into new activities. In Chile, in addition to training staff in current platforms, firms also encourage innovators to run training programs internally on their new projects.
- Training for near-hires[1] is an important means of rapidly increasing the supply of labor for the industry, helping developing countries to maintain their competitiveness. In the Philippines, this practice is particularly prominent for call centers, where steadily growing demand requires them to recruit new employees on a regular basis.

Institutions

There are emerging differences in the roles that different institutions play in driving workforce development across the value chain. This is influenced by the existing educational and training frameworks in the countries in which the chain is embedded, the stage of the value chain in which firms in the country are located, the portability of the skills developed, and the commitment of the government to promoting growth in the industry.

- **English language training** is highly portable and relevant for most jobs in the labor market for emerging economies. There are numerous public and multistakeholder initiatives to drive the development of language competencies in non-English speaking countries promoting the offshore services industry.
- **ITO** requires a depth of technical knowledge that must be accumulated through numerous training programs, ongoing education, and a variety of institutional approaches can be identified. In India, the private sector was forced to take a highly proactive role in developing their workforces to substitute for poor quality in educational institutions. In Chile, the

[1] "Near-hires" refers to good potential employees who could not be hired due to small experience or training gaps in their resume.

government showed clear commitment to developing this segment and offered training subsidies to firms and fostered collaboration between technical educational institutions and the industry through the Public Private Strategic Council.

- **KPO and high value industry-specific segments** depend on high-level technical and analytical skills that are developed over time and rely on rigorous university education. As in the other segments of the offshore services value chain, however, there remain certain gaps between the education sector and the industry that must be filled. Nonetheless, many of the skills required for this sector are portable across different economic sectors and **multistakeholder initiatives** appear to be the most prominent approach to skills development.
- **Financing Workforce Development:** Two key trends can be identified. First, there appears to be a strong shift away from individual investment in education and training for this industry to firm-level provision due to increased competition between firms for talent and the gap between skills provided by the education sector and those required by the industry. Second, there is a substitution of government or public sector financing through tax incentives and subsidies for these firm investments in workforce development. The promising potential spillover effects have encouraged governments to directly finance education and training for the sector. Due to the fierce competition that has emerged between developing countries to attract large third-party providers and captive firms, numerous governments have launched initiatives to reduce these costs associated with workforce development. These trends further highlight the movement away from supply-driven workforce development to demand-driven development.

Global-Local Interactions and Standards

Entry into the value chain depends to a large extent on the presence of a large foreign provider. These firms play a central role in facilitating knowledge transfer regarding the industry to developing countries. Local firms often lack the competency, scale, or global market presence to compete with established Indian and developed market providers.

Standards and global certifications allow developing countries to signal their quality levels to the global market and thus compete with a large number of potential destinations. As a result, these standards have been broadly adopted at the lower end of the offshore services value chain. However, in order to upgrade into the highest segments of the value chain, know-how, innovation, and specialized university education are much more important than a specific industry standard.

In evaluating workforce development policy for this industry, policy makers must be keenly aware of the rapid evolution and highly competitive nature of this industry and develop a broader understanding of

how to engage in workforce development to facilitate upgrading into these higher-level services. The skill level and qualifications of the existing and rising workforce determine the entry and upgrading potential of a host nation in this sector. The analysis highlights the shortcomings of traditional workforce development frameworks in developing countries to provide both the flexibility and quality to meet the skill levels required by the industry. It also suggests, however, that combined institutional approaches that foster collaboration between the private, public, and educational sectors can help to narrow this gap to meet global service standards.

The Tourism Global Value Chain: Economic Upgrading and Workforce Development

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Executive Summary

Tourism is a labor-intensive field with workers participating in multiple sectors that cumulatively represent the tourism industry. The jobs in tourism demand a range of skill sets from low to high. In 2010, global tourism accounted for more than 235 million jobs (ILO, 2010). Developing countries generally suffer from shortages of a trained local workforce, and local workers commonly hold jobs with low-end skills—groundskeepers, housekeeping, and food service—and less in managerial and other senior positions that are often held by expatriates. Implementing a strong workforce development initiative is an avenue for differentiating between tourism markets, and multilateral institutions and private initiatives are helping developing countries foster the skills needed to meet the demands of international tourists.

This report will use the global value chain (GVC) framework to understand global tourism upgrading themes and how workforce development initiatives are linked to this upgrading process. The tourism GVC follows the tourist's "footprint"; that is, the series of their interactions with firms and includes the distribution, transport, lodging, and excursion segments. Upgrading can occur simultaneously in multiple segments, and the common forms of upgrading include

- **Entry into the tourism GVC**: a country becomes an international tourist destination.
- **Adding on tourism products**: the destination country diversifies its tourism market.
- **Product upgrading in lodging (and other local services)**: hotel firms upgrade their accommodations via expanding beds, luxury scale, or facilities. A country destination can also upgrade hotels by providing more accommodation options with better services.
- **Functional upgrading along the excursion/distribution segments**: a tour operator takes on additional logistic and coordination services for tour packages to the destination and may begin to take tours to regional destinations.
- **Adopting information technology (IT)**: tourism firms and destination management organizations adopt web marketing, online purchasing, and social network capabilities.

Three countries were selected for analysis: Costa Rica, Jordan, and Vietnam. These country cases represent varied forms of upgrading in the tourism GVC, and they differ in their range of tourism products, entry into the tourism GVC, distribution channels to the destination, and outbound markets.

Main Findings:

Economic Upgrading

Four upgrading trajectories were highlighted as key drivers of the global tourism industry:

- For the hotel sector, each of the countries studied pursued pro-foreign direct investment policies to attract international four- and five-star hotels. These hotels offer higher levels of luxury and they have strong linkages with global distributors who facilitate access to a broader market. In all three of the country cases, significant upgrading within the hotel segment occurred during the 2000s.
- In the tour operator segment, incoming agents were pushed to upgrade their coordination and destination trip planning by global tour operators. As competition increases, global tour operators seek to offer more trips at competitive prices. This pressure has been pushed down the value chain to incoming agents. In response, firms in both Costa Rica and Vietnam were able to position themselves well in the value chain and serve as regional tour operators in addition to coordinating tours in-country. In Jordan, the Jordan Inbound Tour Operator Association (JITOA) has been active in facilitating upgrading of its tour operators, although they are focused principally on internal rather than regional offerings.
- The IT revolution pushed all three countries to establish a web presence. Marketing boards in each of these countries play an active role in providing platforms that not only promote the destination, but also include functions such as online reservation systems for local hotels and tour operators. In Vietnam, Vietnam National Administration of Tourism (VNAT) created an organization exclusively focused on developing a web presence for the country's tourism sector. This allowed smaller local firms direct access to the market.
- The growing diversity of international tourists with varied tastes and preferences has helped to broaden potential offerings. In Costa Rica, in addition to eco-tourism, the country now offers sun, sand and surf, adventure and community-based tourism; Jordan has expanded its product offerings from cultural and religious tourism to include medical and Meetings, Incentives, Conventions and Exhibitions (MICE) tourism; and Vietnam has had success in offering MICE products in addition to its more well- known cultural tourism offerings.

Workforce Development

The principal workforce development initiatives in the three countries studied supported two of the four aforementioned upgrading trajectories: upgrading of the hotel segment and functional upgrading in the tour operator segment. Efforts to improve language skills across the tourism sector have also been adopted, while soft skills remain a key weakness:

- Hospitality training, including hotel cuisine, food preparation, wait service, housekeeping, and hotel reception training courses, stands out as a consistent workforce development initiative across all countries. Training programs include both short courses (e.g. two to three weeks); longer programs where students lived and worked in a hotel school; or internship programs, where students participate in short courses followed by hands-on practical training in hotels. While these programs have helped to facilitate upgrading in the hotel segment, international hotel chains also provide extensive internal training programs.
- In the tour operator segments, workforce development initiatives were implemented in all three countries, although these programs varied more than for the hotel segment. Jordan stands out among the three cases with a strong focus on the skill development of tour operators. This is considered a professional role and tour operators must hold a university degree; there are 17 universities that offer related degrees. Training courses include events management and destination management certificate programs from a leading U.S. university. Moreover, tour operators had access to a specific training program on business networking skills for the European market.
- More generally, all three countries are strengthening their foreign language abilities, which is one of the most important skills for a good tourism job. Initiatives to promote English and other languages are highlighted in all three cases. In Costa Rica, for example, the Instituto Nacional de Aprendizaje (INA) offered 25,000 scholarships in 2007 for English-language training, while Asociación Costarricense de Profesionales de Turismo provides members with access to Mandarin Chinese, French, and Italian classes as well. In Jordan, the JITOA also offer English-language training for its members.
- Soft skills remain a central workforce development issue for the tourism industry. Professional associations in both Costa Rica and Jordan began offering soft skill development courses for their members in the 2000s. Classes include communication skills, customer service, and time management. Overall, the response from educational institutions to develop these competencies remains weak, even in Vietnam where VTET institutions are well established. Instead, these

training schools focus on technical skills required for the industry, including food and beverage services and housekeeping and room preparation.

Institutions

Our three country cases provide distinct examples of institutional frameworks for workforce development: Costa Rica entered the tourism industry with a narrow framework that depended on a single public institution, the INA, to provide training; in Jordan, universities played the central role for education, although with weak direct linkages to the industry; and in Vietnam, a legacy of government control meant that all training for the industry was centralized under VNAT. Until very recently, there was limited response in all three countries from the private sector to workforce development, with the exception of international hotel chains, which implemented their own global internal training programs.

However, the effectiveness of these public sector programs varies widely. There is a lack of qualified instructors and an overemphasis on hospitality training at the expense of other issues, particularly soft skills. For example, INA in Costa Rica teaches the basics, but it has struggled to create a curriculum that matches the industry's needs. VNAT in Vietnam has moved from a reactive to a proactive strategy in human resource development for tourism, but faces challenges in soft skills. Jordan has actively sought assistance from international universities, multilateral agencies, and private associations to build capacity, while Vietnam has created a detailed Human Resource Development plan to outline current deficiencies and strategies for improvement.

Private sector involvement has been more limited with the exception of large international hotel chains, which implement their own extensive training schemes to ensure that their clients receive the level of service they expect. For local firms, on-the-job training is popular for developing staff internally in the sector; classroom-based training is mostly carried out by industry associations and these courses are often supported by international agencies. In Jordan, for example, although the JITOA is particularly active in driving workforce development, many of its initiatives are facilitated by the United States Agency for International Development. In Costa Rica, the Multilateral Investment Fund–Inter-American Development Bank - and the United Nations Development Program also provided funding for training programs run by industry associations. In Vietnam, even though the two lead firms, Saigon and Hanoi Tourism, have their own internal training program, public sector oversight is prevalent and VNAT designs, develops and evaluates their curriculum.

New Global–Local Interactions

Foreign direct investment in the hotel segment of the tourism value chain has been important for workforce development in all three of the countries by providing them with access to international clients

from developed countries.[1] Most global tour operators tend to choose accommodation suppliers in developing countries that are foreign-run or are higher on the luxury scale based on their ability to meet international service standards, while virtual travel agents typically only provide options for foreign-run or large-scale accommodations in developing countries.

This has both direct and indirect effects. It has a direct impact on workforce development in the hotel segment, since these hotels provide their own training programs that meet their global standards. This serves an important role in facilitating the development of international service capabilities and of soft and technical skills in developing countries that meet the expectations of international travelers. However, because upper management continues to be staffed by expatriates, little information on the diffusion of managerial know-how in international brand hotels flows down to local staff in these developing countries.

Foreign-run hotels also have an indirect influence on workforce development within the tour operator segment. All three countries experienced hotel upgrading and tour operator upgrading simultaneously. Thus, the increased flow of international tourists to upscale hotels has a spin-off effect for the tour operator segment in developing countries. These hotels have a more rigorous approach to excursion and tour operator selection, and they require a range of characteristics such as reliability, promptness, and safety. This requires professionalization of the tour operator segments.

[1] The accommodations on their itineraries are usually selected from among properties that meet international standards.