Cambodia Garment Industry Workforce Assessment

Identifying Skill Needs and Sources of Supply

Source: Photo taken for Garment Industry Productivity Survey, March 2005

June 2006

This publication was produced by Nathan Associates Inc. for the United States Agency for International Development.

Cambodia Garment Industry Workforce Assessment

Identifying Skill Needs and Sources of Supply

DISCLAIMER

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

This assessment has been prepared by the Cambodia Garment Industry Productivity Center, known as GIPC. The GIPC project, managed by Nathan Associates, has introduced a program to (1) train supervisors and middle managers in modern industrial engineering techniques, and (2) train a corps of technical advisors and consultants to work with factories to improve performance. The GIPC's curriculum for improving management and economic governance also complements Cambodian manufacturers' admirable progress in labor standards.

The primary author of this report is Lynn Salinger, Senior Economist with Associates for International Resources and Development (AIRD), Cambridge, MA. Seanghorn Kheang, of the Economic Institute of Cambodia, also provided valuable assistance in the preparation of this assessment.

For more information, contact

Jane O'Dell, Chief of Party
Cambodia GIPC-USAID/Cambodia
3rd Floor, Mild Seven Building
#93 Preah Sihanouk Blvd
Phnom Penh, Cambodia
(855-23) 221-425
(855-23) 221-429 (fax)

jodell@nathaninc.com

Contents

List of Tables

Abbreviations

ADB	Asian Development Bank
BFC	Better Factories Cambodia
CGTC	Cambodian Garment Training Center
CITA	Clothing Industry Training Authority
CRD	Cambodian Researchers for Development
EIC	Economic Institute of Cambodia
EVEP	Elective Vocational Education Program
FIAS	Foreign Investment Advisory Service
GIPC	Garment Industry Productivity Center
GMAC	Garment Manufacturers Association in Cambodia
IGTL	Improvement of Garment Technical Labor project
ILO	International Labor Organization
ITC	Institute of Technology of Cambodia
LLSP	Local Life Skill Program
MOLVT	Ministry of Labor and Vocational Training
MOEYS	Ministry of Education, Youth, and Sports
MSSC	Manufacturing Skill Standards Council
NPIC	National Polytechnic Institute of Cambodia
NSSB	National Skill Standards Board (U.S.; now defunct)
NTB	National Training Board
PPI	Preah Kossomak Polytechnic Institute
SETA	Sector Education and Training Authority
USAID	United States Agency for International Development
USDOL	U.S. Department of Labor
TVET	Technical and vocational education and training
YCC	Youth Council of Cambodia

Executive Summary

Introduction

In our world of integrating markets for goods and services, the increasing urgency for countries, companies, and even individuals around the globe to collaborate and compete has implications for government policy makers, businesses, current and future workers, and the educators who prepare the next generation to take its place in the world. This paper explores how Cambodia might best mobilize to prepare its garment industry workforce to meet the challenges of globalization.

With over $2 billion in export sales and formal employment for 300,000 workers, the garment industry represents Cambodia's first step into labor-intensive, export-oriented manufacturing. Once physical infrastructure, sound economic and political governance, and workforce skills are further developed, Cambodia's economy can expect to diversify into higher value-added, more sophisticated manufacturing.

The processes of globalization and industrialization put increasingly higher demands on the labor market to supply skilled workers. Recently, several training initiatives have been launched to address specific needs within Cambodia's garment industry. The International Finance Corporation's Mekong Private Sector Development Facility provided a supervisory training program for factories supplying Gap, Inc.; the International Labor Organization's Better Factories Cambodia project offers short courses *inter alia* in compliance, safety, and human resources-related topics; the Garment Manufacturers Association in Cambodia's Cambodia Garment Training Center trains sewing machine operators and repair mechanics and has just launched a fashion observatory; and Nathan Associates' Garment Industry Productivity Center, sponsored by the U.S. Agency for International Development, provides industrial engineering training to factory mid-level management. Other opportunities exist for basic sewing operations training.

No formal, overarching sector training strategy exists to ensure efficient uses of public, private, and donor-supplied training resources. This workforce assessment compared skills requirements of employers with available education and training opportunities in Cambodia and with career expectations of garment industry workers and youth to identify skill gaps in the labor market and propose a strategy for remedying them.

International Technical and Vocational Education and Training Experiences

Globalization increases the demand for skills in all labor markets, even in low-skill, low-wage countries. Thus many countries, including Cambodia, seek to link curricula, training programs, courses, teacher training, and degree certification to the needs of the broader economy. To facilitate this process, many countries have established national training boards or qualifications

authorities. These agencies, usually organized as public-private partnerships under the auspices of one or more government ministries, seek to:

- Identify job functions or occupations relevant to specific industries.
- Develop "skill standards" or "competency frameworks" that associate skill and knowledge requirements with job functions.
- Develop curricula, teacher training, and education and training materials and education and training delivery systems that correspond to these skill standards.
- Accredit these education and training programs to assure their quality to students and employers.
- Define "qualifications frameworks" that define appropriate programs of study and corresponding certificates or degrees that certify to employers the body of skills and knowledge that graduates have attained.

In order for such a national qualifications framework to be meaningful, it must be utilized throughout the workforce management process. Employers must use skill standards to guide the hiring of new workers and compensate workers for skills acquisition. Differentiated pay scales by incoming skill level, production incentives, piece rates, performance-based compensation of new hires, and performance-based promotion of existing employees are some of the schemes employers may use to differentiate compensation by skill level in order to promote increased productivity.

Internationally, a variety of educational programs – in lower and upper secondary schools, as well as certificate and degree programs offered at industry-based training authorities and post-secondary education and training institutions – offer training in textiles and apparel. These may or may not be defined as part of an overarching qualifications framework. However, in most countries the education and training authorities work in close collaboration with industry to ensure the relevancy of their services. Hong Kong's Clothing Industry Training Authority, the Institute of Textiles and Clothing at Hong Kong Polytechnic University, and Singapore's Textile and Fashion Industry Training Center provide several regional examples. In the U.S., many colleges and universities offer textile and apparel degree programs. As the industry has evolved in the U.S., so, too, the curricula have de-emphasized manufacturing and become more focused on design, merchandising, and international trade.

Structure of Cambodia's Garment Industry Labor Market

Labor demand and supply forces in Cambodia's garment industry center around the over 250, mostly Phnom Penh-based factories that employ workers to carry out cut, make, and trim operations. Up- and downstream product development and apparel management operations – such as marketing, fashion research, merchandising, product design and development, sourcing of fabrics and findings, finance, buyer relations – are typically handled by parent offices back in the home country or an apparel sourcing center such as Hong Kong.

Of the estimated 300,000 employed in garment factories, over 90 percent of jobs involve mostly female, minimally skilled, production workers in several departments, including cutting, knitting, sewing, quality control, and finishing. However, factories also employ skilled workers, both men

and women, to support and manage the factory at two levels, i.e. as supervisors on the production floor and as production planners and engineers, technicians, merchandisers, operations support, logistics experts, and management.

Monthly salaries reflect skill requirements. Base pay for sewing operators is $50 per month, inclusive of a mandated attendance bonus, though operators frequently are reported to earn from $80 to as much as $120 per month with production incentives. Starting pay for Khmer production supervisors is $200 to $400 per month, with some factories attempting to encourage more Cambodians to apply by bringing local salaries more in line with earnings of expatriate supervisors. Higher skill positions are generally paid up to $1000 to $2000 per month, depending on area and level of responsibility. Limited local availability of skilled, industry-specialized workers leads most factories to bring in skilled workers from countries with a longer history of apparel manufacturing.

Most factories in Cambodia – whether of domestic or foreign ownership – would prefer to hire Khmer for these positions, if the pool of qualified candidates met their needs. Factories surveyed for this report are sensitive to the increased cost of expatriate labor and the ensuing cultural gaps that may lead to workplace conflicts. However, finding candidates with an appropriate skill set is difficult and successful integration of Khmer supervisors into the factories is a challenge.

The typical garment industry worker comes from a rural province, has no more than a primary school education, and is only semi-literate. Her family is poor and her livelihood options are severely limited. Her knowledge of the garment industry is usually limited to basic sewing machine familiarity, based on a few hours of minimal training taken to pass the simple sewing test used by factories to screen job applicants.

In sharp contrast, a well-educated minority of Cambodian youth complete secondary school and pursue training and further education thereafter. The professional aspirations of these students do not include career pathways in garment manufacturing. By and large, students in technical and management programs, while familiar with the importance of the garment industry to Cambodia's economy, are completely unaware of its need for skilled workers and quite surprised to learn that textile and apparel studies are taught at the post-secondary level in more developed countries. At the same time, our conversations with factories suggested that the latter are also completely unaware of the technical training provided at polytechnic institutes and universities in Cambodia.

To address these labor demand/supply imbalances, Cambodia's National Training Board, a public-private partnership under the auspices of the Ministry of Labor and Vocational Training's Technical and Vocational Education and Training Department, seeks to develop sector training strategies to ensure that core, life, and vocational skills delivered to Cambodian youth are appropriate in today's economy.

Garment Skill Requirements and Supply

This workforce assessment has identified skills requirements by job category in Cambodia's garment industry. We compare this with skills currently supplied by the country's education and workforce development systems. A strategy to address the identified gaps between demand and supply is proposed here. It may serve as an example to the National Training Board of the kind of

demand-driven qualifications strategy that can be developed with input from all relevant stakeholders.

Conversations with factories revealed four categories of skills that they esteem among their workers. They include core skills (literacy, numeracy, foreign languages, civic education), technical skills (basics such as visual acuity, color recognition, eye-hand coordination, and manual dexterity, as well as equipment and procedural skills), social skills (e.g., ability to follow directions, communication, teamwork, problem-solving), and knowledge of the global garment industry.

Yet employers have limited expectations regarding locally available skill sets of production workers, and expect to train newly hired employees in-house. A few of the factories with whom we spoke underscored the importance of training. One is building a training center to retrain their entire workforce in core, social, and technical skills over time. Another factory sent its production workforce to the National Polytechnic Institute of Cambodia for a short course in team-building and social skills development.

For more skilled production supervisors, employers would prefer to promote from among internal operator ranks but cannot spare them for the month or two it would take to provide basic training. Employers also complain that most Khmer operators are reluctant to accept promotion.

With regard to higher skill factory jobs, there appears to be ample supply of accounting and management education graduates. However, they usually lack prior knowledge of the garment business. More industry-specific skills – such as production costing, production planning, industrial engineering, work study, foreign languages, labor standards compliance, trade logistics, electrical maintenance, machine repair, marketing, merchandising – are not developed in any Cambodian technical and vocational education and training institution. The Cambodia Garment Training Center and the Garment Industry Productivity Center have begun programs to address a few of these needs.

Each of these examples of failure to link labor market demand with supply has direct consequences for factories:

- First, the weak education system in Cambodia and high dropout rates, especially in rural areas, create a large pool of illiterate, minimally skilled workers. While this results in one of the lowest cost workforces in the world, factories acknowledge negative consequences of that low skill base in terms of low productivity and workplace instability.
- Second, weak or near absent communication between industry and the education and training system prolongs a situation of value-chain segregation. Education and training institutions do not address the needs of the garment industry; most garment companies therefore import skilled garment industry labor into Cambodia and process pre- and post-production job functions back at headquarters. This lack of cooperation between demand and supply sides of the labor market equation precludes Cambodia's ability to climb up the learning curve into higher value-added niches of the value-chain.
- Third, the absence of any kind of qualifications framework for the garment industry in Cambodia leaves Cambodian students in the dark about which skills will improve their

employability and the available career pathways in the garment industry that might employ their computer-aided design and manufacturing, electrical, information technology, machine repair, and management skills. Skilled Cambodian youth imagine futures for themselves in a range of industries, but never in the garment industry or in manufacturing in general.

- Finally, lack of a formal, overarching sector training strategy may lead to inefficient uses of public, private, and donor-supplied training resources.

Strategy to Address Skill Gaps in Cambodia

Careful consideration of garment industry needs and available opportunities for addressing those needs has identified a number of noticeable gaps in Cambodia's technical and vocational education and training system as it relates to the garment industry. Developing a strategy to address these skill gaps must embrace several dimensions.

First, any proposed training strategy for the garment industry must be conceived both narrowly and broadly. Cambodia must consider how to produce a literate, skilled, multilingual workforce that is ready for industrialization, developing a sector training strategy for garments that is conceived in terms of needed industry-specific skills as well as broad enough skills to prepare workers for tomorrow's industries.

Second, training needs should be conceived not only from the perspective of job functions, but also from a life-cycle perspective. Despite the fact that technical and vocational training and education are managed under separate ministries, the National Training Board's perspective should encompass opportunities for education and training at all points along what might be thought of us an "education – training – post-secondary study – skills upgrading" continuum, considering the needs of youth, entry-level workers, production supervisors, and production management.

Third, any strategy to address skill gaps in the garment industry must be accompanied by a broader campaign to provide balanced information on the garment industry to Cambodians. Focus group discussions consistently revealed that youth perceive the industry as one that undervalues skills and is abusive of Khmer workers.

Fourth, financing of training for employment needs public debate. The extent to which employers (either through direct funding of on- or off-site training or indirectly via skills levies), government (via tax-based or donor-funded public expenditures), or individuals (encouraged to invest privately, spurred on by the promise of higher wages for higher skills) – or some combination thereof – will cover the costs of skills development remains to be discussed as a crucial public policy decision.

What comes next? This draft paper should be presented to an appropriate multi-stakeholder forum to gain feedback from representatives of the garment industry, the education and training sector, labor, and other interested parties. Consensus is needed on the following:

- Are the job functions properly identified here?
- Are the associated skill requirements appropriately distinguished and defined?

- How can the draft qualifications matrix be modified and improved?
- Which skill gaps – pre-employment, entry level production workers, production supervision, or management – are of greatest concern to industry and require most urgent attention?

Once skill gap priorities are agreed upon, consensus is needed on how to institutionalize the provision of specialized training, given that several independent, industry-specific training options now exist. Which existing or yet-to-be-developed institution or partnership is ready to support an enlarged training center that would incorporate the existing fashion, merchandising, productivity, and workplace training programs, and expand the depth and breadth of curricular offerings? What combination of public and private resources should fund these ventures over time?

A number of initiatives to broaden garment industry-related education and training opportunities in Cambodia could be considered. The Cambodia Garment Training Center could be expanded, to envelop one or more of the independent training programs that currently exist. Alternatively, garment sector-related education and training could be brought under the aegis of an existing polytechnic institute or university. At the public school level, curriculum units could be developed under the aegis of the Local Life Skills Program to introduce younger students to the world of work, industrialization, and *inter alia* the garment industry.

As the framework is discussed, modified, and improved, parameters will need to be established for qualification, accreditation, and certification. Programs, curricula, courses, and teacher training will need to be defined. And input is needed from all parties interested in furthering a garment industry training strategy – NTB, TVET, industry, donors, labor – to determine next steps for furthering the process.

1. Introduction

"The world is flat," claims a recent book by *New York Times* columnist and author Thomas L. Friedman (2005). Friedman argues that the rapid pace of globalization – which he characterizes as a "flattening" of the world – enables not just countries and companies, but also individuals, around the world to collaborate and compete. That has implications for all involved, from government policy makers to businesses, current and future workers, and the educators who prepare the next generation to take its place in the world.

This paper looks at one aspect of globalization's footprint in Cambodia – its fledgling garment industry – and offers a balance sheet of workforce skills sought by and available to the industry, and suggests how Cambodia might best mobilize to prepare its workforce for the challenges of globalization in this industry today and in unknown spheres tomorrow.

INDUSTRIALIZING CAMBODIA

Ten years ago Cambodia embarked on the path to economic development already followed by many Asian neighbors. The first step to growth and increased living standards in Japan, Taiwan, the Republic of Korea, and other countries has been the introduction of labor-intensive, export-oriented manufacturing. In the earliest stages of transformation from agrarian society to a modern, diversified economy, manufacturing tends to be concentrated in lower value-added products such as garments and footwear, with higher value-added, more sophisticated manufacturing – of machines, electrical equipment, and electronics, for example – introduced once physical infrastructure, sound economic and political governance, and workforce skills are further developed.[1]

Catalyzed by foreign investors, with their global market connections and manufacturing know-how, Cambodia's garment industry has grown in only ten years from export sales of just a few hundred million dollars to over $2 billion in 2005.[2] Accompanying this rise in exports has been expansion of formal employment, estimated in mid-2006 to include 300,000 jobs in the industry.[3]

---

[1] Some countries have attempted to jumpstart the transition by developing industrial enclaves, known as export processing zones, that offer more favorable institutional and physical conditions for export-oriented activity than are generally available in the broader economy. Lessons learned from these zones were explored by McMillan, Pandolfi, and Salinger (1999) and Radelet (1999).

[2] Although most sources do not report trade data prior to the mid-1990s, reference is made to Chinese-financed garment factories operating in Phnom Penh in the late 1970s in Becker (1986, p. 277).

[3] This compares with a 2001 (the year of Cambodia's most recent labor force survey) estimated working population of 6.24 million. At that time, eighty-five percent of the working population resided in the countryside, with an estimated 900,000 workers in Phnom Penh and other urban areas. Source: National Institute of Statistics.

Among the top fifteen countries supplying garments to the U.S. in 2005, Cambodia was one of only five countries in the world to end the first year of quota-free textile trade with an *increase* in U.S. market share, alongside the global powerhouses of China, India, Indonesia, and Bangladesh.[4]

Understanding the labor market that has underpinned this manufacturing explosion, and the skills required to support its further expansion and diversification, is the purpose of this workforce assessment.

SYNOPSIS OF GARMENT INDUSTRY-RELATED SUPPORT ACTIVITIES

As a legacy of Cambodia's unique Bilateral Textile Agreement with the United States between 1999 and 2004 that linked access to the U.S. market with measurable progress in industry working conditions, much attention has focused on labor rights, working conditions, and dispute resolution in Cambodia's garment industry. A program to monitor working conditions in the factories has been in place since 2001, managed under the aegis of the International Labor Organization (ILO).[5] Additional support for labor rights and organization has been provided by the Solidarity Center, the global worker rights organization that is a part of the American Federation of Labor-Congress of Industrial Organizations.[6] Under the ILO's Labor Dispute Resolution Project, an Arbitration Council was established in 2003 to resolve collective labor disputes that cannot be resolved by conciliation.

Enforcement of labor standards has been credited with providing a competitive edge for Cambodian garment exporters,[7] and it is certain labor standards played a role in bringing international buyers to the country. Yet as competitive pressures mount in a post-quota world, the ability of exporters to deliver quality products, on time, and at an acceptable price is the *sine qua non* of global industry success. Cambodian garment factories must be both productive and maintain their labor standards if they are to remain among the world's suppliers.

Anticipating the end of the multilateral textile quota regime on January 1, 2005, donors considered how they could best contribute to prevent a loss of garment sector employment in Cambodia. In addition to the above-mentioned efforts on labor standards, a variety of parallel efforts were also underway to understand garment employees' needs (CRD 2004), value-chain competitiveness (World Bank 2004a), buyers' perceptions of the value of the labor standards niche (FIAS 2004), and to develop an overall strategy for the sector (Ministry of Commerce and ADB 2004). It was suggested to USAID that efforts to understand and improve productivity, a key factory-level determinant of competitiveness, would be of critical importance in the period moving forward after the elimination of quotas (Salinger 2004). A survey of the determinants of

---

[4] Data from the U.S. Department of Commerce's Office of Textiles and Apparel, accessed May 2, 2006.

[5] See www.betterfactories.org for complete information.

[6] See www.solidaritycenter.org/content.asp?contentid=449 for complete information.

[7] As quoted on the Solidarity Center website, Cambodia's minister of commerce, Cham Prasith notes, "We are extending our [program to enforce] labor standards beyond the end of [multilateral trade] quotas because we know that is why we continue to have buyers." *Ibid.*

labor productivity and garment industry competitiveness, conducted in 2005, identified the weakness or absence of industrial engineering skills as a key constraint to factories' abilities to raise worker productivity (Salinger et al., 2005). In response to this identified need, the Garment Industry Productivity Center (GIPC), funded by USAID and launched in January 2006 under the direction of Nathan Associates, offers production engineering training to mid-level garment factory personnel, primarily supervisors, managers, and industrial engineering staff.

OBJECTIVES OF THE WORKFORCE ASSESSMENT

Having embarked on its productivity improvement activities with garment factories, GIPC has undertaken this workforce assessment to understand better the industry's overall skills needs and sources of supply. Its scope was developed in collaboration with the ILO's Better Factories Cambodia and the IFC's Mekong Private Sector Development Facility's Garment Program,[8] both of which also provide specialized training to the industry.

The assessment was charged with an evaluation of the following:

- What specific skills in core, technical, and social areas are sought by employers for both production and office positions?
- What recruitment practices do employers use to identify qualified job applicants?
- What kinds of pre-employment training do workers bring to their jobs?
- How do public and private schools, universities, and training institutions contribute to the development of Cambodia's garment industry workforce?
- What skills do workers aspire to acquire through their work?
- How do youth and university students measure their future job options and where does garment sector employment fit into that equation?
- What limitations mark the current garment industry labor market in Cambodia and what can be done to improve its depth and industry responsiveness?

APPROACH

This assessment was carried out over a three-week period in May-June 2006 by Lynn Salinger, senior economist with Associates for International Resources and Development, Jane O'Dell, GIPC chief of party, and Kheang Seanghorn, a researcher with the Economic Institute of Cambodia. The assessment focused on labor market demand and supply forces, identifying skills needs in the industry, the sources of supply of those skills, and factors that prevent demand and supply forces from optimal "clearing" (i.e. meeting each other).

Views were solicited from employers, government, education and training institutions, youth, workers, and international organizations involved in some way in the garment industry. In some instances, structured interviews were held with individual representatives, while in other cases

[8] See www.ifc.org/mpdf for complete information.

focus group discussions were organized. GIPC is advised by a Center Advisory Committee whose members include representatives from many of these sectors.

Factories were contacted through GIPC and the Garment Manufacturers Association in Cambodia (GMAC). The Youth Council of Cambodia (YCC) graciously provided us access to youth in Kampong Cham and Prey Veng through YCC provincial leaders. The National Polytechnic Institute of Cambodia (NPIC) arranged for us to meet with a selection of their students. We also organized a focus group with students from a number of universities in Phnom Penh. Two separate focus groups were organized with garment workers, each held on Sunday afternoons at their places of residence. A complete list of meetings held with organizations and individuals is appended to this report.

GIPC is grateful for the time and insights provided by the over 130 survey participants. Their willingness to discuss with us their immediate activities and needs, as well as their longer term personal and organizational aspirations, gave us a deep appreciation and respect for the variety of visions and ambitions that Cambodians and guests working in Cambodia hold for the country's economic future, and for their own. We look forward to furthering the discussion about training challenges for the further development not only of Cambodia's garment industry, but its industrial workforce overall.

This paper presents a conceptual framework by outlining international experiences with technical and vocational education and training qualifications frameworks and apparel training programs in section 2, introduces key actors in Cambodia's garment industry labor market in section 3, details skill demand and supply by job function with identification of skill gaps in section 4, and proposes a draft strategy for addressing skill gaps in section 5.

2. International Technical and Vocational Education and Training Experiences

Technical and vocational education and training (TVET) systems in many countries link curricula, training programs, courses, teacher training, and degree certification to the needs of the broader economy. Cambodia's TVET system is also working to establish demand-driven sector training strategies to make its programs more relevant to current economic needs. This is outlined in section 3.

Examples are offered here of the kinds of frameworks that have been implemented elsewhere. We also offer a sampling of apparel study curriculum outlines from international training institutions to suggest the kinds of apparel courses and programs that may be usefully taught in Cambodia.

TVET FRAMEWORKS

Acknowledging the growth in demand for a range of skills driven by the globalization's "new technological paradigm" that calls "for *more* skills, for *higher* levels of skill, and for *different kinds* of skill" on the part of workforces everywhere (Lall 1999, p. 3), a number of countries have embarked on efforts to link industry needs for improved productivity with workers' desires for increased training with educators' pushes for increased relevancy of schooling with career pathways. Quite a few countries have established national training boards or qualifications authorities to oversee the process (see Table 1), housed in a mix of institutions, depending on the country – ministries of commerce, labor, or education, or independent agencies.

Table 1: Sample of National Qualifications and Training Organizations

Country	National Organization	Clothing or Manufacturing Industry Affiliate
Australia	Australian National Training Authority merged into Australian Department of Education, Science and Training (http://www.dest.gov.au/sectors/training_skills/default.htm)	Manufacturing Skills Council Australia (http://www.mskills.com.au/); for clothing production, see http://www.mskills.com.au/IndustrySubSector.aspx?SubSectorID=6
Canada	Canadian Department of Human Resources and Social Development (http://www.hrsdc.gc.ca/en/home.shtml)	Workplace Skills Initiative is a grants facility that will fund pilot, partnership-based skills development programs. (http://www.hrsdc.gc.ca/en/ws/initiatives/wsi/WSI_proposal_overview.shtml)
Greece	Organization for Vocational Education and Training	
Hong Kong	Vocational Training Council (http://www.vtc.edu.hk)	Clothing Industry Training Authority (http://www.clothingtraining.org.hk)
Ireland	National Qualifications Authority of Ireland (http://www.nqai.ie/en/)	
Malaysia	National Vocational Training Council (http://www.nvtc.gov.my)	
Mauritius	Mauritius Qualification Authority (http://www.mqa.mu)	Industrial and Vocational Training Board (http://www.gov.mu/portal/sites/ncb/ivtb/index.htm)
Morocco	State Secretariat for Professional Training & its *Approche par Compétences* (Skills Approach) (http://www.dfp.ac.ma/)	
New Zealand	New Zealand Qualifications Authority (http://www.nzqa.govt.nz/)	Apparel & Textile Industry Training Organisation (http://www.atito.org.nz)
Republic of South Africa	Department of Labour Skills Development (http://www.labour.gov.za/programmes/programme_display.jsp?programme_id=2674) South African Qualifications Authority (www.saqa.org.za)	Skills Education and Training Authorities (by sector), incl. Clothing, Textiles, Footwear, & Leather SETA (http://www.ctflseta.org.za/)
Scotland	Scottish Qualifications Authority (www.sqa.org.uk)	
Singapore	Singapore Workforce Development Agency (http://app.wda.gov.sg/) Singapore Workforce Skills Qualifications System (http://wsq.wda.gov.sg/)	Textile and Fashion Federation (http://www.taff.org.sg) Textile and Fashion Industry Training Center (http://www.taftc.org)
Thailand	Ministry of Education, Vocational Education Commission (http://www.vec.go.th/)	Thai Textile Institute (http://www.thaitextile.org/eng/default.asp), umbrella organization for 8 textile industry associations, organized under auspices of the Thai Ministry of Industry
United Kingdom	Qualifications and Curriculum Authority (http://www.qca.org.uk/) under Department for Education and Skills; see also Department of Trade and Industry's "Leadership & Skills for Innovation" policy (http://www.dti.gov.uk/innovation/skills/page10932.html)	
United States	National Skills Standards Board now defunct[9]	Manufacturing Skill Standards Council (http://www.msscusa.org) Global Skills Exchange (http://www.gskillsxchange.com)

See also http://www.worldskills.org/site/public/?pageid=136 for a broader list of skills-related organizations.

[9] The U.S. National Skills Standards Board (NSSB) was created in 1993, under the auspices of the Department of Labor. The NSSB sought "to encourage, promote, and assist industry, labor, and education in the voluntary identification, development, and adoption of high standards needed in each work area and the matching of those needs to curricula, work experience, training, and training material," according to archived information at the U.S. Department of Education website; see http://www.ed.gov/pubs/Prog95/pt3fed.html. National skill standards were developed across all manufacturing industries by the Manufacturing Skill Standards Council for the NSSB. Funding for the NSSB was eliminated in 2004. Employers' concerns that the program would increase costs associated with excessive regulation may have helped to undo the U.S. program (Carnevale 1999, p. 41).

The process of establishing a national qualifications framework is not always linear, and has not always started from the same point in each country. However, usually some combination of the following steps is involved:

- **Industries identify job functions or occupations relevant to their enterprises.** In some circles, focusing on job functions (or tasks) is preferred over occupations, as the latter are rapidly changing as globalization forces the upgrading of skill requirements for all workers. Focusing on job *functions* in an enterprise is seen as more flexible in a fluid labor market.[10]
- **Skill and knowledge requirements, also known as "skill standards" or "competency frameworks" are associated with each job function or occupation.** Skill standards were initially developed to improve vocational education for non-college bound youth. Today, the distinction between "academic" and "vocational" education is viewed by some as outdated, focusing instead on career and technical education relevance for all secondary students (ACTE 2006). Skill standards have now been developed in some countries for a broader range of occupations, including higher skill occupations that employ college graduates. Standards may exist for many different occupations, ranging from "manual" labor categories – e.g., electricians, plumbers, construction workers – to "professional" categories – e.g., real estate agents, health care workers, lawyers, engineers. Not every country's qualifications authority recognizes standards in all career categories, focusing on those that are relevant for their own economy.
- **Education and training providers develop curricula, teacher training, and education and training materials and delivery systems that correspond to these skill standards.** This is what is meant by developing "demand-driven" education and training.
- **Education and training programs are accredited by government and industry.** Accreditation serves to assure the quality of education and training service providers to direct consumers (students) and users (employers) of those services.
- **A matrix of certifications or qualifications is defined by industry training boards, usually with government, industry, labor, and educator input.** Appropriate levels of training and education, methods for measuring skill acquisition, and corresponding certificates or degrees to be accorded to graduates at each level are agreed upon, to certify to employers the body of skills and knowledge that graduates have attained.

Why do countries develop national qualifications frameworks? Public and private resources are normally invested in the development of these frameworks when policy makers, educators, labor, and industry recognize the importance of a skilled workforce and are ready to commit to a skills-based labor market.

In order for the national qualifications framework to be meaningful, it must be utilized throughout the workforce management process. Employers must use skill standards to guide the hiring of

---

[10] This was pointed out by Mr. Dave Wilcox, president of Global Skills X-Change and formerly of the National Skills Standards Board.

new workers and compensate workers for skills acquisition. Differentiated pay scales by incoming skill level, production incentives, piece rates, performance-based compensation of new hires, and performance-based promotion of existing employees are some of the schemes employers may use to differentiate compensation by skill level in order to promote increased productivity.

APPAREL INDUSTRY TRAINING QUALIFICATIONS

One of the more active national agencies, the New Zealand Qualifications Authority, accredits industry training organizations. These are, in turn, responsible for setting national skill standards for their industries, providing information and advice to trainees and their employers, conducting skill audits for companies, arranging for the delivery of training (both on-the-job and off-site), arranging for the assessment of trainees, and monitoring the quality of training. An example of an apparel industry qualifications framework prepared by New Zealand's Apparel and Textile Industry Training Organization is presented below.

Table 2: New Zealand Apparel and Textile Industry Training Qualifications

Task	Elementary Certificate	National Certificate in Clothing Manufacture		
		Level 2	Level 3	Level 4
	Provides core technical skills & personal skills needed in the industry	Provides adequate initial skills & knowledge to be ___ with average performance standards; enables trainee to continue to Level 3		
Sewing	√	Sewing machinist	Builds on Level 2	
Embroidery	√	Basic embroidery machinist	Builds on Level 2	
Cutting	√	Cutter's assistant	Can lay up fabrics by machine, cut fabrics and use computerized marking and cutting equipment	
Commercial Sewing			Achievement in commercial sewing skills; demonstrated competence to meet specified levels of performance and use range of different sewing machines in a commercial manufacturing workplace.	
Basic Garment Assembly			Demonstrated competence required of a sewing machinist to assemble an entire basic garment	
Design & Patternmaking			Capability in design and patternmaking skills and knowledge, and ability to assist in the operation and activities in the design and patternmaking section of a workplace	Skilled tradesperson able to organize and supervise all the production activities of the design and patternmaking section(s) under his/her responsibility
Mechanic			Adequate maintenance and servicing skills and knowledge to be an assistant mechanic, and ability to assist in maintenance and servicing work of company	Skilled tradesperson able to organize and supervise all the maintenance activities of the plant under his/her responsibility
Production				Skilled tradesperson able to organize and supervise all the production activities of the plant under his/her responsibility.

Source: http://www.atito.org.nz/page.aspx?pri=105&sec=602&tpl=9

In South Africa, the definition of skill standards starts with the identification of specific occupational levels. South Africa's Clothing, Footwear, Textiles, and Leather Sector Education and Training Authority (SETA) defines occupational levels in its skill planning guide for the industry, as seen in Table 3.

Table 3: South Africa Occupational Levels Definitions

Title	Definition	Examples
Managers	People who plan, direct and co-ordinate the activities of a business / organization in either the private or public sector.	Chief executive officers, factory managers, department managers, financial managers, quality assurance managers, sales managers, product development managers and HR / training managers.
Professionals	People who possess a high level of professional knowledge and experience in a field of physical and life science or the social sciences and humanities.	Industrial engineers, accountants, technologists, training officers.
Technicians and Associate Professionals	People who possess technical knowledge and experience in a field of the physical and life sciences or the social sciences and humanities.	Electrical engineering maintenance foreman, work study engineer, designers, quality controllers, examiners, sales representatives, buyers.
Clerks	People who organize, store, compute and retrieve information. Typical tasks are secretarial duties, operating word processors and other office machines, recording and computing numerical data, mail service, money handling operations and appointments.	Secretaries, messengers, coders, cashiers, switchboard operator, admin assistants, bookkeepers, store clerks, wage clerks, production clerks, debtors/creditors clerk, costing clerks.
Service and Sales Workers	People who provide personal and protective service or who sell goods in shops or at markets.	Salesperson, house models.
Craft and Related Trade Workers	People who are tradesmen or artisans.	Loom tuners, fitters, turners, machine mechanics.
Plant and Machine Operators	People who operate and monitor large-scale and often highly automated industrial machinery and equipment.	Spinners, weavers, dyers/printers, knitters, machinists, tanners, cutters, pressers, hyster drivers, truck drivers.
Elementary Occupations	People who perform mostly simple and routine tasks, involving the use of hand-tools and in some cases considerable physical effort, and generally use only limited personal initiative and judgment.	Cleaners, sweepers, security guards, handymen, service hands, loaders, packers, sorters, bale handler, waste collectors, material handlers.

Source: Clothing, Textiles, Footwear, and Leather Sector Education and Training Authority, Skills Planning Handbook (2005-2010), 2nd edition (2006)

In the United States, various public and private sector initiatives have participated in the development of common work or skill standards. Remnants of the NSSB era can still be found within some industry associations and state-level agencies. The Manufacturing Skill Standards Council (MSSC), a voluntary association of industry, union, and national association representatives, has produced a set of skill standards that it sells to interested parties, along with training and assessment services. At the state level, the Texas Skill Standards Board maintains a "repository" of links to certification boards for thirty-three career paths (Table 4).

Table 4: Texas Skill Standards Repository

Biotechnology/ Biomedical • For Regulatory Affairs and Clinical Trials • For Research, Development, and Manufacturing Chemical/Refining Process Technician Computer-aided Drafting and Design Customer Service and Sales Cyber-security Database Development and Administration Digital Media Enterprise Systems Analysis and Integration Hazardous Materials Maintenance Technician Heating, Ventilation, Air Conditioning, and Refrigeration Technician Heavy Equipment Maintenance Technician Highly Automated Manufacturing Systems Technician Industrial Instrumentation and Controls Technician Machinist, Levels I and II	Manufacturing Health, Safety, and Environmental Assurance Manufacturing Logistics and Inventory Control Manufacturing Maintenance, Installation, and Repair Manufacturing Production Manufacturing Production Process Development Manufacturing Quality Assurance Metal Forming Level I Metal Stamping, Levels II and III Network Design and Administration Oil and Gas Production Technician Programming/Software Engineering Retail Operations and Management Semiconductor Manufacturing Equipment Technician Technical Support Technical Writing Telecommunications Maintenance Technician Texas County Corrections Officer Web Development and Administration

Source: Texas Skill Standards Repository, http://www.tssb.org/index2.htm

Although the NSSB has been disbanded, the U.S. Department of Labor (USDOL) continues to pursue an "industry-based competency model," applicable especially to high-growth sectors (advanced manufacturing, aerospace, automotive, biotechnology, construction, energy, financial services, geospatial technology, health care, homeland security, hospitality, information technology, retail, and transportation). In May 2006 the USDOL announced a comprehensive set of competency requirements for advanced manufacturing that distinguish personal effectiveness, academic, workplace, industry-wide, and industry-specific competency requirements:[11]

Table 5: U.S. Advanced Manufacturing Competency Model

Personal effectiveness competencies • Integrity • Motivation • Dependability & reliability • Willingness to learn **Academic competencies** • Applied science • Basic computer skills • Applied math/measurement • Reading for information • Business writing • Listening & following directions • Locating/using information • Speaking/presentation skills	**Workplace competencies** • Business fundamentals • Teamwork • Adaptability/flexibility • Marketing & customer focus • Planning & organizing • Problem-solving & decision-making • Applied technology	**Industry-wide technical competencies** • Manufacturing process development/design • Production • Maintenance, installation & repair • Supply chain logistics • Quality assurance/continuous improvement • Health & safety **Industry-sector technical competencies** • Occupation-specific o Knowledge areas o Technical competencies o Requirements • Management competencies

Source: U.S. Department of Labor, Employment and Training Administration (2006)

[11] According to the USDOL press release, "participants and reviewers included the Manufacturing Institute, National Council for Advanced Manufacturing, National Association of Manufacturers, Society of Manufacturing Engineers, National Institute for Metalworking Skills, Penn State University, Thomas Nelson Community College, Aviation High School in New York City, and others." (USDOL/ETA 2006)

Though not recognized as "standards," the U.S. Department of Labor's Occupational Information Network identifies tasks and skills associated with a large number of occupations. Examples are presented below for three of the most relevant occupations to this assessment, i.e. sewing machine operators, production supervisors, and production inspectors/graders (Table 6, next page).

TEXTILE AND CLOTHING TRAINING PROGRAMS

Internationally, a variety of educational platforms offer training in textiles and apparel. These include programs in lower and upper secondary schools, as well as certificate and degree programs offered at industry-based training authorities and post-secondary education and training institutions. While these programs may or may not be defined as part of an overarching qualifications framework, in most countries the education and training authorities work in close collaboration with industry to ensure the relevancy of their services.

In Hong Kong, for example, the garment industry, represented by a long list of partner organizations, founded the Clothing Industry Training Authority (CITA). CITA provides pre-employment training for youth, part-time short courses (clothing technology, merchandising, computer applications, supervisory management), one-year certificate courses (garment manufacture, garment merchandising, knitwear manufacture, patternmaking and design), diploma courses (knitwear studies and merchandising, contemporary merchandising skills), skills upgrading courses for mid-career workers (computer-aided design, computer knowledge, fabrics, color, manufacturing, merchandising), and a certified program in digital fashion information technology.

Professional training in fashion and textiles is also available to students enrolled in degree programs at Hong Kong Polytechnic University's Institute of Textiles and Clothing.[12] Short courses in fiber and yarn technology, fabric technology, coloration and finishing technology, fashion design, technical design, product development, apparel manufacturing, merchandising techniques, and fashion retailing are offered, along with sub-degree (higher diploma, higher certificate) and degree (bachelor of arts, bachelor of science) programs in fashion, textiles, and intimate apparel.

Singapore's Textile and Fashion Federation runs a Textile and Fashion Industry Training Center (TaF.tc), which offers a broad range of courses, workshops, and seminars. Topics covered include apparel product development, merchandising, costing; textiles and fabric care; fit evaluation; industrial engineering; information technology; pattern drafting; team management; customer relations; production drawing; production control; production tracking; production planning; quality assurance; and retailing.

---

[12] Depending on the department, degrees include Doctoral, Master's and Bachelor's degrees, as well as Postgraduate Diploma, Post-experience Diploma / Certificate, Postgraduate Certificate, Higher Diploma, Higher Certificate, Executive Diploma, Certificate, Professional and Continuing Education (PCE) Diploma and PCE Certificate. See www.polyu.edu.hk.

Table 6: U.S. Occupational Information Network – Tasks and Skills Associated with Garment-Related Occupations

	Garment Sector Sewing Machine Operators	Supervisors of Production & Operating Workers	Production Inspectors, Testers, Graders, Sorters
Tasks	Starts and operates or tends machines that automatically join, reinforce, or decorate material or fabricated articles.	Enforce safety and sanitation regulations.	Grades, classifies, and sorts products according to size, weight, color, or other specifications.
	Turns knobs, screws, and dials to adjust settings of machine, according to garment style and observation of operation.	Direct and coordinate the activities of employees engaged in the production or processing of goods, such as inspectors, machine setters, and fabricators.	Marks, affixes, or stamps product or container to identify defects, or denote grade or size information.
	Guides garment or garment parts under machine needle and presser foot to sew parts together.	Read and analyze charts, work orders, production schedules, and other records and reports, in order to determine production requirements and to evaluate current production estimates and outputs.	Records inspection or test data, such as weight, temperature, grade, or moisture content, and number inspected or graded.
	Sews replacement parts or missing stitches, according to repair tickets.	Confer with other supervisors to coordinate operations and activities within or between departments.	Collects or selects samples for testing or for use as model.
	Replaces sewing machine parts and performs basic maintenance, such as oiling machine.	Plan and establish work schedules, assignments, and production sequences to meet production goals.	Discards or routes defective products or contaminants for rework or reuse.
	Draws markings or pins appliqué on fabric to obtain variation in design and marks stitching errors with pins or tape.	Inspect materials, products, or equipment to detect defects or malfunctions.	Notifies supervisor or specified personnel of deviations from specifications, machine malfunctions, or need for equipment maintenance.
	Bastes edges of material to align and temporarily secure garment parts for final assembly.	Demonstrate equipment operations and work and safety procedures to new employees, or assign employees to experienced workers for training.	Reads work order to determine inspection criteria and to verify identification numbers and product type.
	Selects supplies, such as fasteners and thread, according to specifications or characteristics of fabric.	Observe work, and monitor gauges, dials, and other indicators to ensure that operators conform to production or processing standards.	Uses or operates product to test functional performance.
	Removes holding devices and finished item from machine.	Confer with management or subordinates to resolve worker problems, complaints, or grievances.	Computes percentages or averages, using formulas and calculator, and prepares reports of inspection or test findings.
	Attaches tape, trim, or elastic to specified garments or garment parts, according to item specifications.	Interpret specifications, blueprints, job orders, and company policies and procedures for workers.	Sets controls, starts machine, and observes machine which automatically sorts or inspects products.

	Garment Sector Sewing Machine Operators	Supervisors of Production & Operating Workers	Production Inspectors, Testers, Graders, Sorters
Skills	Equipment Selection — Determining the kind of tools and equipment needed to do a job.	Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.	Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
	Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.	Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.	Mathematics — Using mathematics to solve problems.
	Operation and Control — Controlling operations of equipment or systems.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.	Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
	Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.	Instructing — Teaching others how to do something.	Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
	Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.	Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.	Writing — Communicating effectively in writing as appropriate for the needs of the audience.
		Speaking — Talking to others to convey information effectively.	
		Time Management — Managing one's own time and the time of others.	
		Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.	
		Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.	
		Coordination — Adjusting actions in relation to others' actions.	

Source: Occupational Information Network, http://online.onetcenter.org/

In many industrial countries colleges and universities and their family and consumer science or applied science faculties also may offer textile and apparel degree programs. In the U.S., for example, curricula were originally quite broad-based, covering physical and social sciences, as well as the humanities, but have become more focused in recent decades. Laughlin and Kean (1995) surveyed 143 academic textile and apparel departments in the U.S. and found the most common curricular elements to be: beginning textiles, color and design principles, socio-psychological and cultural aspects of textiles and clothing, merchandise operations, fashion theory, decision making, and critical thinking (95% or more of responses included these courses). In the survey, departments also identified curricular elements likely to be expanded in their programs, including global interdependence, critical thinking, ethics, cultural diversity, communications, mass production of apparel, textile/apparel economics, and design courses. The U.S. textile and apparel teaching profession is organized under the International Textile and Apparel Association; links to academic institutions and their textile and clothing programs are available online.[13]

DEVELOPING A GARMENT INDUSTRY TRAINING STRATEGY FOR CAMBODIA

The above examples detail various ways that other countries have broached the classification of an industry's workforce needs and addressed those needs through education and training service providers. What is the appropriate sequencing to develop a garment industry training strategy in Cambodia? At a minimum, the preparation of a garment industry training strategy for Cambodia requires the following:

1. Describe the garment industry's labor market structure, i.e. identify key players across both demand (employers) and supply (workers, youth, education and training institutions). *See section 3 of this report.*
2. Prepare a skill needs assessment for the industry, i.e. identify key job functions and/or occupations and related skill and knowledge requirements from the labor demand side of the equation. Compare with education/training and career path options faced by youth prior to employment and workers once employed. Identify skill gaps, i.e. instances where skills demanded and supplied do not match up. *See section 4.*
3. Draft a garment industry sector training strategy with proposals for closing these gaps that considers the most appropriate stages and institutions for delivery of core, social, and technical skills required by the industry. This paper therefore represents primary input into the strategy. However, establishing a framework is as much about *process* as it is about product. It is thus essential that this process bring in all interested parties to ensure understanding, representation, input, and commitment. *See section 5*.

[13] See http://www.itaaonline.org/template.asp?intPageId=116 for more information.

3. Structure of Cambodia's Garment Industry Labor Market

This section provides a descriptive overview of the key players in the garment industry labor market, both on the labor demand (employers) and supply (workers, youth, education and training institutions) sides.

The government ministry most directly involved in the garment industry is the Ministry of Commerce, owing to its role in allocating export quotas until 2005. The ministries of Labor and Vocational Training, Women's Affairs, and Industry, Mines, and Energy also have strong interests in the industry. Within the latter, the National Productivity office, part of the Asian Productivity Organization, also shares interests.

LABOR DEMAND: EMPLOYERS

Cambodia's garment industry is comprised of over 250 factories, ranging in size from several hundred to many thousand workers each.[14] Over 70 percent of factories in Cambodia are owned by investors from Hong Kong, Taiwan, China, and Korea. Another 10 percent of factories operate under Cambodian ownership, while the remaining investors hail from elsewhere in Asia, Europe, and North America. The interests of garment industry employers are represented by the Garment Manufacturers Association in Cambodia (GMAC), led by an Executive Council comprised of twenty firms.

In Cambodia, garment factories focus on "cut, make, and trim," i.e. assembly operations. Up- and downstream product development and apparel management operations – such as marketing, fashion research, merchandising, product design and development, sourcing of fabrics and findings, finance, buyer relations – are typically handled by parent offices back in the home country or an apparel sourcing center such as Hong Kong. The Cambodian-owned factories, lacking these resources, are usually subcontracted by larger foreign apparel companies for production assembly only, with pre- and post-production operations handled by the contractor.

The garment industry represents the single largest formal sector of employment in Cambodia's economy. Of the estimated 300,000 employed in garment factories, over 90 percent of jobs involve mostly female, minimally skilled, production workers in several departments:

---

[14] The largest may include 7-10 thousand workers. For a fuller presentation of the industry, see Ministry of Commerce and ADB (2004) and Salinger et al. (2005).

- Cutting: Cutters spread layers of fabric, lay out patterns, cut fabric, and prepare bundles for sewing;
- Knitting: In some factories, knitting machine operators produce knit fabric panels;
- Sewing: Lines of sewing operators join cut fabric pieces and knit fabric panels, set sleeves and collars, attach pockets, trims, and closures, to produce whole garments;
- "QC": Quality control staff check garments for quality and ensure that flaws are addressed before the garments leave the factory;
- Finishing: Garments are trimmed of loose threads and laundered, fabric finishes may be introduced through washing, final goods are pressed, and garments are readied for shipment according to the buyers' specifications: hang tags and price tickets are attached, garments are folded or hung, packaged, and containerized for shipment around the world.

With a base monthly pay of $50 (inclusive of the attendance bonus mandated by Cambodia's Labor Law), GMAC quotes an average compensation level for production workers of more than $65 per month, inclusive of production incentives. Factories surveyed for this report confirmed that production workers can earn $80 to $120 per month (one factory reported that its top operators earn $200 per month), inclusive of overtime and production incentives. This compares with $25 per month for school teachers and annual gross national per capita income of $350.[15]

Although the bulk of labor demand is for production workers, factories also employ skilled workers, both men and women, to support and manage the factories at two levels, i.e. on the production floor and in the office.

Floor supervision of production workers is a key position. Factories are organized into production lines of 30 to 50 workers. This suggests a total demand of about 7,000 supervisory personnel, comprised of:

- Line leaders, who assure that the work flows expeditiously along the line; and
- Production floor supervisors, who oversee the pace of work, ensure that stoppages are minimized, monitor production levels by line throughout the day, train new workers, and manage constant problem-solving.

In addition, office positions comprise roughly 3-4 percent of total employment in a Cambodian garment factory, for an industry total of approximately 10,000 jobs. These positions include:

- Production planners and engineers, who schedule work and plan production line organization, study workflow and analyze ways to improve its efficiency, and calculate unit production costs (in smaller factories this work may be done by supervisors or the production manager);
- Mechanical technicians, such as electricians and machine repair specialists, who ensure that the physical plant and mechanical equipment are operational;

---

[15] The latter is a 2004 figure from the World Bank's World Development Indicators.

- Merchandisers, who are responsible for order management;
- Operations support, e.g., accounting and human resources staff, who manage orders, costs, personnel, and compliance issues;
- Logistics experts in the shipping department, who supervise the incoming delivery of fabric and other inputs (which are all, by and large, imported) and the outgoing delivery of final goods to sea- and airports;
- Management, who oversee all aspects of production.

Total demand for skilled worker positions in Cambodia's garment industry is on the order of 15-17,000 skilled workers.[16] Salaries for skilled labor positions in the factories range from $200-400 per month for Khmer production supervisors to much higher figures in tandem with increased training and skill levels, i.e. up to $1000-2000 per month, depending on area and level of responsibility. Factories usually pay more for expatriate supervisors and managers, in part because of their experience and perceived higher skill level, and in part to compensate for relocation to Cambodia.

Most skilled workers are brought into Cambodia today from countries with a longer history of apparel manufacturing, including China, Taiwan, Korea, the Philippines, and others. However, despite popular perceptions to the contrary, factories participating in this survey – whether of domestic or foreign ownership – say they would prefer to hire Khmer for these positions, if they could identify adequate numbers of qualified candidates who met their needs. Participating factories are sensitive to two aspects of foreign skilled worker employment, i.e. increased cost and cultural gaps that may lead to workplace conflicts. Several factories with a longer production history in Cambodia have indeed promoted a number of Khmer production workers into line leader and supervisory positions, supporting their claimed interest in replacing expatriates with local personnel.

However, we note that successful integration of Khmer supervisors into the factories is a huge challenge. They must usually speak English and/or Chinese, be trained or mentored by their expatriate colleagues, and be supported and respected by their Khmer co-workers. Not only general managers, but production managers must be supportive of the re-organization. Employers usually also prefer that supervisors emerge from the production workforce, so that they understand operations and workflow. Yet supervisors must also possess more advanced numeric, literacy, and organizational skills. As GIPC itself has found out in recruiting for its own staff trainer positions, this combination of skills is quite rare.

LABOR SUPPLY: WORKERS

The interests of garment industry workers are represented by a large number of labor union organizations.[17] However, in order to gain insight into the perspective of garment factory workers

[16] Numbers are estimated from data provided in interviews with factories for this assessment and data collected by the 2005 productivity survey.

[17] Some of the umbrella labor organizations include the Free Trade Union of Workers of Kingdom of Cambodia, National Independent Federation of Textile Unions of Cambodia, Cambodia Labor Organization, and the Cambodia Labor Union Federation.

on the labor market in which they are involved, we opted to speak directly with workers and organized two focus group discussions. A total of 40 workers were included, from the Samnang Dob Pi district of Phnom Penh and the Chaom Chav district, located en route to Kampong Speu. We met with women at their residences, on Sunday afternoons, away from their places of employment. Our profile here is a composite picture of the stories we gathered.

The typical garment industry worker comes from a predominantly rural province of Cambodia. In a 2004 survey conducted by the Cambodian Researchers for Development for the Asian Development Bank, Prey Veng, Kampong Cham, Kandal, and Takeo provinces were the four most common home provinces for factory workers. Often she has no more than a primary school education and is only semi-literate. Two-thirds of Cambodia's garment workers are between the ages of eighteen and twenty-four; anyone over thirty is considered "old." Her family is poor. She came to the city to work because her livelihood options back in the village are severely limited – her family has inadequate land for everyone to engage in farming, the vagaries of weather have made farming exceedingly risky, and she had no capital with which to begin a small commercial enterprise. Though most workers are single, perhaps as many as one-quarter are married with children. If she comes from a distant province, she rents a room in a "dormitory" which she likely shares with at least one roommate. Alternatively, she may commute to the factory from her home district just outside of Phnom Penh.

A sister or girlfriend already working in Phnom Penh assured her she could find work in one of Cambodia's garment factories. She got her job through them. She did not learn to sew in school or in her village. Rather, she paid 2,000 Riel per hour for a few hours of sewing instruction at an informal training facility in the city. This was sufficient for her to pass a simple sewing test required of production worker applicants by most factories.

She is Cambodia's greatest asset today, producing the shirts and pants and jackets and sleepwear that account for 80% of all Cambodian exports. With her hard work over long hours she is able to earn enough to support herself and still send money home to help support her family as well. Remittances to families back home help pay for school fees, health care, and family investments. Her income also generates employment for thousands of service providers who supply food, transport, housing, and other needs of the workers.

Although factory hours are long and the work can be exhausting, she expects to remain working in the factory as long as she is physically able and would recommend employment in the garment industry to friends and relatives. When asked about dreams for the future, some garment workers answer that they want to learn how to construct a whole garment so that they may one day return to their villages and work as tailors in their home communities. However, several of the interviewed factories reported reluctance from their workers to shift into new positions or engage in training. This is further addressed in section 4.

LABOR SUPPLY: YOUTH

In order to understand the perspectives of youth who are still in school and planning their career paths – and the extent to which they include the garment industry in those plans – we spoke with groups of high school, technical institute, and university students, ages 18 to 24, both in Phnom Penh and in two provinces, Kampong Cham and Prey Veng. Unlike garment workers who have

typically dropped out of primary school, these students clearly represent a well-educated minority across the youth population. In Cambodia, net school enrollment rates of 80-90 percent in primary school drop to 17-21 percent for lower secondary school and 8-9 percent for upper secondary school (World Bank 2005).[18]

The students with whom we talked come from a range of disciplines. In the provinces, the Youth Council of Cambodia put us in touch with students who are either still in high school or pursuing post-secondary studies in accounting, management, and pedagogy. They hope to become managers, teachers, lawyers, doctors, or journalists, or – the highest aspiration for many – work for an NGO. In Phnom Penh, we spoke with a group of post-secondary students at the National Polytechnic Institute of Cambodia. They have aspirations to build power plants, highways, and new manufacturing companies to build their country's future. Also in the city, we spoke with university students from a cross-section of public and private universities, studying engineering, management, and medicine. They, too, aspire to business and other professions. In particular, the engineering students expect to manage large infrastructure construction projects or engage in urban planning. One management student spoke of opening an employment agency to guide young people into the labor market. Agro-industry and health care were other sectors targeted by these ambitious youth.

Students acknowledge the importance of the garment industry to Cambodia's economy. They know it represents a significant source of employment and export earnings for the country. However, when asked whether the garment industry figures among their own future career options, these well-educated students were surprised. "Only poor, rural, uneducated women work in the garment industry," we were told. "Work in the garment industry is hard, health conditions are poor, there is much conflict, and the factories abuse your human rights," we heard. Media and NGOs were their sources of these impressions.

When Khmer students hear that in other parts of the world, in developed and emerging countries alike, universities and training institutes offer degree and certificate programs in apparel management and production, they are surprised. When they hear that factories in Cambodia not only need production workers, but also production analysts, technicians, and managers, and bemoan their inability to find skilled workers, they are stunned. They have no idea that factories are a possible source of employment.

There is a clear gap in communications that prevents optimal clearing in this labor market. Factories are forced to import skilled labor to help run and manage the factories. Cambodian youth are not being channeled into skilled careers in the garment industry and they are not building the skills needed for a growing, industrializing economy that can transition into a more diversified manufacturing base.

LABOR SUPPLY: EDUCATION AND TRAINING INSTITUTIONS

Cambodia's education and training system has evolved rapidly over the last decade in order to meet the demands of an economy evolving from one that previously ran as a command economy,

[18] Figures vary, depending on the survey source of the data as reported in Table 1 of World Bank (2005).

wherein graduates were directed into public sector jobs, to one in which market forces determine employment needs and skill requirements. Clearly, educational planning, curriculum, teacher training, pedagogic materials, financing, and management needs, as well as educational output expectations, are very different, depending on the economic system in which the educational program is embedded. Cambodia has embarked on an education strategic plan to improve equitable access to education, quality of education, and planning and financial performance, and to cross-cutting issues such as gender, ethnic minorities, disabled learners, HIV/AIDS, the environment, information communication technology, and border/ reconciliation areas in the context of education (MOEYS 2004a).

Cambodia's education and training sectors are governed under two separate ministries of government. The Ministry of Education, Youth, and Sports (MOEYS) is responsible for early, primary, secondary, and higher education, while the Ministry of Labor and Vocational Training (MOLVT) is responsible for the country's technical vocational education and training program.[19] Coordination between the two ministries is envisioned as part of the country's education strategic plan. Technical and vocational education and training (TVET) is managed in the Department of TVET within MOLVT. TVET policy and planning is done by the National Training Board (NTB), with financing for skills development available through the National Training Fund. Both of these were established under the ADB-funded Basic Skills Project, which ran from 1995 to 2003 (ADB 2003). Within TVET, a Deputy Director of National Competency Standards oversees the process of establishing skill standards and qualifying processes. The NTB's mission is to provide demand-driven TVET programs. The Board is in the process of developing sector training strategies. This workforce assessment is offered as a case study and a component of a sector training strategy for the garment industry.

It is the responsibility of public schools to provide core skills – literacy, numeracy, civic education, … – to Cambodian youth. Graduates of upper secondary school are expected *inter alia* to have developed a love of learning; attained a foundation knowledge of Khmer language and literature; achieved a foundation in mathematics, science and technology, history, civic education, and a foreign language; acquired good health knowledge, skills, and attitudes; developed employment-related skills, including a positive work attitude and the ability to work well in teams; and become responsible and self-reliant (MOEYS 2004b).

The general education curriculum has recently been reformed to include a Local Life Skills Program (LLSP). Life skills are "the intellectual, personal, interpersonal, and vocational skills that enable informed decision-making, effective communication, and coping and self-management skills that contribute to a healthy and productive life" (MOEYS 2004b, p. 8). USAID's Improving Basic Education program funds *inter alia* the development of accompanying

[19] Nevertheless, a number of government agencies maintain their own, separately managed training institutions, e.g. Ministry of Agriculture, Ministry of Public Works and Transport, Ministry of Education Youth and Sports, etc. The TVET strategic plan notes, "Various Government Ministries have their own staff training colleges providing the skilled workers required for Government services (transport, electrical power supply, agriculture)." (MOLVT 2006). It is anticipated that the TVET department will assume responsibility for some of these other training institutions.

teaching materials to implement this new curriculum for grades one through nine, focusing on civic education, health and nutrition, and agro-ecological training.[20]

After 10th grade, upper secondary students are eligible for the public schools' Elective Vocational Education Program (EVEP), which covers ICT/technology, accounting and business management, local vocational technical subjects, tourism, and art education.

For high school graduates, higher education opportunities exist at both public and private institutions to study in management and technical fields. Post-secondary institutions are overseen by the fledgling Accreditation Council of Cambodia (Ford 2003). A large number of post-secondary options exist for management study (e.g., accounting, banking, business administration, finance, hotel and tourism management, human resources management, management, marketing, etc.) at public and private universities and institutes. Public higher education institutions such as the Royal University of Law and Economics and National University of Management, as well as private institutions such as Build Bright University, Institute of Management and Economics, International Institute of Cambodia, International University, Norton University, and Pannasastra University all offer management degrees. Many of these programs are delivered in English.

On the technical side, the public Institute of Technology of Cambodia (ITC) trains both engineers (five-year Bachelor of Science degree) and advanced technicians (three-year technology diploma) to enter fields such as chemical, civil, electrical, industrial and mechanical, and rural engineering, as well as information technology. All ITC courses are conducted in French.

In addition to the technical university, several TVET institutes exist in Phnom Penh. Among these are the Preah Kossomak Polytechnic Institute (PPI), which prepares high school graduates to enter the fields of engineering (electrical, electronic, construction) and business management (marketing, management, accounting), and the newly-opened National Polytechnic Institute of Cambodia (NPIC), which prepares students in electronics, information technology, computer-aided design and manufacturing, automobile repair, hospitality, and culinary arts.[21] NPIC students also study the Korean language, as the institute was built with Korean resources and a guest worker program for NPIC graduates in Korea is envisaged. The National Technical Training Institute prepares technical teachers, curriculum, and materials for the TVET system.

Outside of Phnom Penh, provincial training centers exist to provide rural vocational training. To be eligible to enter Cambodia's vocational training system, youth must have completed the 9th grade in school.

---

[20] See Congressional Budget Justification for USAID/Cambodia, strategic objective 442-011, "Increases Relevance and Quality of Basic Education," http://www.usaid.gov/policy/budget/cbj2005/ane/kh.html.

[21] ADB (2003) also includes the Russey Keo Institute of Technical College and the National Institute of Business as belonging to the public TVET institutions; these were not visited by the workforce assessment team.

4. Garment Industry Skill Requirements and Supply

SKILLS DEMANDED BY JOB CATEGORY

Garment factory representatives were asked to identify the range of employment positions for which they recruit candidates, the skills they seek and those they actually find in the Cambodian workforce, and how they evaluate job applicants for employment suitability.

We probed the extent to which factories distinguish among various technical and non-technical skills. Recall the competency model for advanced manufacturing in the U.S., mentioned above, which also distinguishes personal effectiveness and academic competencies (what we call social and core skills here), from more workplace- and industry-related skills (what we call technical here). Although factories in Cambodia do not classify their skill needs using these exact terms, from the responses gathered we are able to distinguish the following categories of skill needs:

- *Core skills* include the ability to read, write, and perform basic arithmetic functions. Beyond these basic skills, factories also mention the importance of varying degrees of foreign language familiarity (English and Chinese). Civic education was also repeatedly mentioned as a core requirement, one dimension of which was education of youth about the importance of manufacturing, and garment factories in particular, to Cambodia's economic future.
- *Technical skills* include the ability to operate fabric spreading and cutting equipment, sewing machines (e.g., single-needle, double-needle, overlock, zigzag, cover stitch, bartack and shapetack, button and button-holing, and more specialized machines), and pressing equipment, and an understanding of quality control standards and procedures. Job applicants may be screened for technical basics such as visual acuity, color recognition, eye-hand coordination, and manual dexterity.
- *Social skills* include a wide range of assets that improve the chances of workforce success, such as the ability to follow a set of oral directions, communicate clearly, work in teams, take initiative to solve problems, the willingness to take on new tasks or positions, and an understanding of workplace rights and responsibilities.
- *Industry knowledge* starts with a broad understanding of the global value-chain in which Cambodia's garment manufacturing sector is situated, to an appreciation of the role that garment manufacturing and exports play in the development of the Cambodian economy, to more in-depth familiarity with the roles of particular actors, especially those with greatest proximity to garment factories, such as buyers, compliance officers, foreign

investors and their home offices, input suppliers, and shippers, as well as those more distant actors – from competing producers to end-consumers – whose actions shape the competitiveness environment faced by factories.

In articulating their skill needs to us, factories distinguish between skill requirements for three functional categories, i.e. production workers, supervisors, and management staff, explored below.

Production Worker Skill Requirements

Factories in Cambodia have very limited technical skill requirements for entry on to the production floor, though they all say they prefer to hire sewing operators with prior factory work experience and higher skill levels. Most factories simply test whether job applicants can sew a straight line using a single-needle machine, although some factories also evaluate sewing speed. Familiarity with double-needle, overlock, and more specialized sewing machines is a plus.

Several factories also evaluate job applicants for:

- Hand-eye coordination
- Manual dexterity to handle more complex sewing operations
- Color recognition, visual acuity, pattern recognition
- Basic trainability, ability to listen and correctly respond to a sequence of technical directions
- Literacy and numeracy: some factories test workers on their ability to recognize letters or work with numbers, but most acknowledge that it is extremely difficult to find workers with literacy or numeracy training.

Factories see advantages in training production workers in-house; on the other hand, factories are also enthusiastic about hiring applicants with some skills, including graduates of CGTC's sewing program (though not about paying for their training). Most factories train newly hired production workers in machine skills, work procedures, and human resources in their first week or two on the job. Factories commonly take advantage of the official probationary periods of one to three months that are allowed under Cambodia's minimum wage notice for garment workers, paying workers the official probation period wage ($40 per month) during that time. Under Cambodian law, workers are elevated to the full mandated wage rate at the end of the probation period.

Factories observe workers during the first year of employment and may shift them between cutting, sewing, QC, finishing, and shipping departments, depending on their skills and personalities, until they find the right "fit," which is where they will likely stay. Several factories mentioned that workers often resist changes once they have become established at a certain machine or task. However, most factories do not expect or desire their production workers to become multi-skilled. Assigning workers to a single operation minimizes training costs and the difficulty of replacing departed workers and may also result in higher productivity from specialization.

In addition to legally mandated minimum monthly wages, workers in most factories are paid additional incentives to promote productivity. Factories may set production quotas and pay "incentives" for output exceeding that level, usually calculated according to a formula, rather than as a per unit "piece rate." Factories seek to define production standards for each garment that are achievable at a reasonable level of efficiency. Piece rates or incentives are offered by management to induce performance at levels above those standards.[22] However, lack of transparency or use of transparent but complex formulae for determining production standards, quotas, incentives, and piece rates can lead to confusion and thus increased tension between workers and employers. A number of employers cited the desirability of at least limited worker literacy and numeracy in order to be able to comprehend their pay slips.

A few of the factories with whom we spoke underscored the importance of training as they strive to build a cohesive workforce. One of the larger factories in Phnom Penh is building a training center to retrain their entire workforce in core, social, and technical skills over time. Another factory sent two-thirds of its production workforce (the other third refused to attend out of fear of the unfamiliar) to the NPIC for a three-day team-building exercise just after the Cambodian New Year break. Factory workers lived in the student dormitories, participated in group exercises and recreation, and learned social skills associated with working together in a factory. One month later, the general manager of the factory reported that employee morale was high, workers seemed more committed to group goals, and factory productivity had not suffered its usual post-holiday dip.

Production Supervision Skill Requirements

Garment factory production supervisors are expected to be able to communicate management's workflow programming to the production floor and ensure that production operations are carried out in a timely fashion. Supervisors are also responsible for training, monitoring, and screening newly hired production workers, re-assigning them, if necessary, to new work stations.

Supervisors are expected to know all aspects of garment production, from pattern marking through quality control and finishing. They should understand whole garment construction. In addition, factories report that they seek supervisors with literacy, leadership, and communication skills. Supervisors should also be able to push the interests of their own line, defend the team as necessary vis-à-vis bottlenecks from other production departments. At the same time, they should be assertive vis-à-vis their own line workers, yet able to motivate them to meet production targets. One factory manager said that English language capability is a must for supervisors in his factory.

Factories would prefer to promote from among internal operator ranks to fill their production supervisor positions. However, in some cases, they do hire from the outside to find individuals with prior supervisory experience as well as production experience. The CGTC supervisor

---

[22] According to Article 108 of Cambodia's labor law, "For task-work or piecework, whether it is done in the workshop or at home, the wage must be calculated in a manner that permits the worker of mediocre ability working normally to earn, for the same amount of time worked, a wage at least equal to the guaranteed minimum wage as determined for a worker."

training program was cancelled over a year ago, as few factories were willing to spare their personnel for training and it was difficult to quantify benefits. The CGTC currently runs a short course in machine maintenance.

Though factories state they seek to develop Khmer supervisors, they complain that many Khmer working as operators are reluctant to accept promotion. They attribute this to insecurities about the increased responsibility to management, to lack of acceptance by their former teammates, and to concerns about losing some income initially while they adapt to the new position.

Production Management and Office Skill Requirements

There are two sides to the skills equation at the level of higher skill factory jobs. On the one hand, for some factories in Cambodia, fulfilling some skill requirements (such as accounting and human resources) is not a problem. "Skills are not an issue, we find everything we need," one factory manager asserted. "For every office position we advertise, we have thirty job applicants with management training show up at our door." High school and post-secondary graduates with accounting and management education indeed appear to be abundantly available.

Some management skills, however, are difficult to find. Several factories reported a shortage of well-trained human resources leaders, especially individuals with dispute resolution skills. GMAC confirms that HR professionals with top skills are able to earn over $1500 per month. Compliance officers were also identified as desired, but in short supply relative to industry demand.

Satisfaction with the local skilled labor market appears a good deal more fragile when more industry-specific skill requirements are identified. Factories admit that they cannot find skilled workers who arrive with an understanding of how the global garment industry is organized or functions. Khmer high school and college graduates know little about manufacturing or about the garment industry in Cambodia or around the world. Garment industry-specific technical and production management skills that factories may seek, but cannot find in Cambodia, include:

- Production costing
- Production planning
- Industrial engineering, work study[23]
- Foreign language (especially English and Chinese)
- Labor standards compliance

---

[23] "Work study is the analysis of the operations required to produce a style [and is] primarily the responsibility of plant engineers. Effective work study requires both methods analysis and work measurement. Methods are studied, analyzed, and the elements of the method measured in terms of time consumed. Data are collected, analyzed, and used to support decisions on rates and methods. … Work measurement techniques used by garment manufacturers include 1) time studies, 2) judgment or past experience of the engineer or production manager, 3) predetermined motion/time systems, 4) standard data, 5) operator reporting, and 6) work sampling. Each work measurement technique has advantages and disadvantages for specific applications." As highlighted in Salinger et al. (2005), few factories in Cambodia maintain production engineering departments capable of conducting work study and analyzing the ensuing data to improve production performance. Filling this gap in factories' skill sets is the goal of the Garment Industry Productivity Center. (Glock and Kunz 2005, pp. 351 and 353)

- Trade logistics
- Electrical maintenance and machine repair
- Marketing, merchandising [24]

This leads factories working in Cambodia to rely on alternative strategies. Either they may recruit skilled management workers from abroad, usually from China and other Asian countries with greater industry experience and a commitment to professional and vocational training, or they tend to concentrate factory operations in Cambodia on the lower skill functions of the global value chain, leaving higher skill activities to be conducted by overseas headquarters or partner firms.

SOURCES OF GARMENT INDUSTRY SKILLS SUPPLY

None of Cambodia's public education or TVET institutions outlined in section 3 offers garment industry-specific management or technical training. Nonetheless, polytechnic institutes provide training in electronics, computer-aided design, machine repair, and information technology, as well as management. These skill sets are of real interest to garment industry employers. Yet HR managers surveyed were largely unaware that technical training programs exist in Cambodia.

Outside of the formal education and TVET systems, a number of specialized garment industry training programs have been initiated in Cambodia, usually with some donor funding. A number of these were developed with input from local industry, international buyers, and government (Ministry of Commerce). These include three pre-production and production training courses, one course that combines workplace and production training, and one course that focuses primarily on workplace conditions:

- **Cambodia Garment Training Center** (CGTC), established by GMAC with funding from the Japanese International Cooperation Agency and implemented with assistance from Juki Corporation's Sewing Research Institute, provides training for sewing operators and sewing machine repair technicians. CGTC's newest addition to its offerings, expected to get underway in mid-2006, is a program aimed at developing fashion trend analysis and merchandising capabilities for the Cambodian industry, to be implemented by the Singapore-based Textile and Fashion Industry Training Center.
- **Garment Industry Productivity Center** (GIPC), a project of USAID, provides industrial engineering training to factory mid-level management. Its purpose is to raise Cambodian garment industry productivity by training in production management techniques; prepare Cambodians to contribute to a stable yet diverse manufacturing economy; and improve productivity and industrial skills so that Cambodia becomes a supplier of choice in the international apparel market. In addition to classroom training,

---

[24] Marketing and merchandising are often used interchangeably, yet they are two separate functions. *Marketing* departments are responsible for selling the capabilities of the factory and the company to which it belongs to customers, i.e. contractors and buyers from the retail end of the value chain. Marketers follow competitor and consumer trends and position the firm, therefore, relative to both for optimal sales growth. *Merchandising* refers to the development of clothing (and accessory) product lines for clients, preparing a set of styles, sizes, and price points to meet customers' needs at specific calendar dates.

GIPC productivity technicians provide advisory and on-site training services to client factories.

- **Improvement of Garment Technical Labor** (IGTL) is a non-governmental organization that was founded in February 2006 by a team of former garment factory compliance officers. IGTL offers one-week operator training courses, for which it charges $25. The curriculum includes an industry overview, sewing machine use, quality control, and labor rights and responsibilities. Trainees only pay for the course after they have been hired by a factory. Thus far, IGTL has contacts with three factories that have hired its graduates.
- **Better Factories Cambodia** (BFC), supported by a public-private sector partnership with donor support, offers a modular training program to factory managers and workforce representatives. The modules cover a series of issues (globalization, workplace cooperation, quality, occupational health and safety, productivity, human resources and working conditions, and continuous improvement), and are presented at staged intervals during a fourteen-month period.
- **Mekong Private Sector Development Facility** (MPDF), a multi-donor initiative housed within the International Finance Corporation, contracted with the Indonesia-based group Business Dynamics to run a supervisory training program in 2005 for 650 garment industry production supervisors from seven factories producing for the U.S. clothing company, Gap, Inc. The program emphasized human relations and conflict-management skills training.
- Smaller training initiatives also exist. These range from private sewing tutors who charge 2,000 Riels per hour for sewing lessons to prepare factory job applicants, to non-governmental organizations that offer sewing courses. NGO sewing programs mostly provide training in tailoring or artisanal craft production, rather than industrial sewing skills; one of these is run by the Salesian Sisters of Don Bosco in Poipet, Battambang province.

BALANCING SKILL NEEDS AND SUPPLIES

On balance, several factors prevent optimal clearing in the garment industry labor market in Cambodia. Each of these has direct consequences for factories:

- First, the weak education system in Cambodia and high dropout rates, especially in rural areas, create a large pool of illiterate, minimally skilled workers. While this results in one of the lowest cost workforces in the world, factories acknowledge negative consequences of that low skill base in terms of low productivity and workplace instability.
- Second, weak or near absent communication between industry and the education and training system prolongs a situation of value-chain segregation. Education and training institutions do not address the needs of the garment industry; most garment companies therefore import skilled garment industry labor into Cambodia and process pre- and post-production job functions back at headquarters. This lack of cooperation between demand and supply sides of the labor market equation precludes Cambodia's ability to climb up the learning curve into higher value-added niches of the value-chain.

- Third, the absence of any kind of qualifications framework for the garment industry in Cambodia leaves Cambodian students in the dark about which skills will improve their employability and the available career pathways in the garment industry that might employ their computer-aided design and manufacturing, electrical, information technology, machine repair, and management skills. Skilled Cambodian youth imagine futures for themselves in a range of occupations, but rarely in the garment industry or in manufacturing in general.
- Finally, lack of a formal, overarching sector training strategy may lead to inefficient uses of public, private, and donor-supplied training resources.

Using a common framework to evaluate industry training needs and coordinate public, private, and donor funded training resources will improve the rationality of resource allocation and consistency of outcomes. Each of these is explored below, by job function category.

Production Workers

On balance, the Cambodian garment industry's largest workforce demand is for minimally skilled production workers. The labor market supplies ample numbers of candidates for cutter, operator, QC, presser, and packaging personnel. Employers expect minimal pre-employment training, accepting that they will train production workers on the job over a week to two months. In terms of production skills, these workers will come up to speed fairly quickly.

However, the extremely low levels of schooling of most job entrants yields a semi-literate and uneducated workforce that knows very little about manufacturing work in general and about the garment industry in particular before beginning employment. This impacts production in a number of ways: workers are tentative, even inflexible, with regard to assuming new operations or new positions within the production line; they are unlikely to take initiative to resolve workflow problems; and even in some instances unwilling to engage in training. Moreover, many are unclear about how compensation is calculated and may be unable to read or understand their pay slips, a situation fraught with possibilities for creating tension in the workplace.

Limited or informal opportunities are available to learn the social skills necessary for a successful and productive factory. These weak "social" dimensions of work constrain factories from achieving higher levels of productivity by increasing the chances of miscommunication and misunderstanding which can lead to work stoppages. It also makes it difficult to identify and develop supervisor candidates from among Khmer production workers' ranks, which virtually all employers say they would like to do. Teamwork and cooperative approaches to problem analysis and solution are certainly learned in rural settings in the village. However, with an appropriate curriculum, more structured opportunities to develop these skills can be provided in formal educational settings.

Production Supervision and Management

At the level of skilled garment industry occupations – e.g., production supervision, production costing and planning, industrial engineering, accounting, human resources including compliance, sourcing, logistics and shipping, marketing, merchandising – garment factories in Cambodia do not have access to local, trained personnel with prior knowledge of the garment industry, unless

they hire workers previously employed by another factory. There is no formal education or training program in Cambodia that teaches youth about the garment industry or industrial work or provides certificates for positions as clerks or technicians or management assistants or managers.

When factory managers are queried about the various polytechnic and management schools that send trained graduates into the Phnom Penh labor market, they are usually unaware of the educational offerings, and interested in hearing more. However, some employers express skepticism as to whether the training is provided by a certified program that delivers the skills appropriate to the garment industry, underscoring the need for a coordinated training strategy and standards. Most employers surveyed expressed interest in greater outreach to Cambodian schools and institutes, perhaps via some kind of "job development fair" at which both schools and employers could present their programs and needs to each other.

The independent training programs listed in section 3 – CGTC, GIPC, IGTL, BFC, and MPDF – partially fill in these gaps. They offer short courses to update the skills of existing garment industry employees. To date, however, while various training initiatives co-exist and coordinate on an informal basis, or through GMAC, there is no overarching technical and vocational education and training vision to connect them. Also, there has been no formal coordination of these programs with Cambodia's TVET system. Finally, while these programs address needs for specific on-the-job training, there are a number of glaring gaps in the array of training options particularly with respect to pre-employment training.

Cambodia is at an awkward juncture in its education planning. On the one hand, its overall labor force is still largely employed in the informal sector, working in agriculture, trade, and informal businesses; firm data on labor force allocation by sector are scarce. Yet if youth are to be able to transition into formal sector employment – in the garment industry, tourism sector, and other organized businesses – secondary education and vocational training will have to provide more skills to facilitate the transition from school to work. A bias that favors skills and technology-based industries permeates labor markets around the globe, even those whose economies might be thought to have a comparative advantage in low-skill, inexpensive labor (Salinger, Bolnick, Reisman, and Endean 2006). As countries integrate their economies into global patterns of production and exchange, wage inequalities increase sharply as those with skills sought by global businesses will be more heavily compensated than those without. If Cambodia's workers are to compete in this context, the delivery of industry-relevant skills must be a part of its education and TVET systems.

A tentative outline to guide thinking about garment industry skills needs and training options, and recommended next steps in the preparation of a garment industry training strategy are offered in section 5.

5. Strategy to Address Skill Gaps in Cambodia

Careful consideration of garment industry needs and available opportunities for addressing those needs has identified a number of noticeable gaps in Cambodia's TVET system as it relates to the garment industry. Developing a strategy to address these skill gaps must embrace several dimensions.

First, any proposed training strategy for the garment industry must be conceived both narrowly and broadly. The garment industry is most likely just the first of a number of labor-intensive, export-oriented manufacturing sectors that will find it attractive to do business in Cambodia. Garments came first in the 1990s, as foreign investors were attracted to available export quotas. However, if the lessons of Asian development serve as guideposts, Cambodia can expect that other manufacturing-related foreign and domestic investment will be drawn to the country.

Relying on a low-skill, low-wage strategy to attract investors will not suffice. Others have addressed the relative attractiveness of Cambodia and the macro considerations – e.g., improved infrastructure, reduced costs and improved reliability of key services such as electricity and telecommunications, reduced costs of corruption and crime, strengthened regulatory transparency – that Cambodian policy makers must address in order to successfully lure other investments to the country (Development Consulting International 2003, World Bank 2004a). Just as important, Cambodia must produce a literate, skilled, multilingual workforce that is ready for industrialization.

Thus, a sector training strategy for garments needs to be conceived in terms of industry-specific skills to support the industry that has flourished in Cambodia to date, but also building broad enough skills to prepare workers for tomorrow's industries – agro-processing, automotive parts manufacturing and assembly, electronics, furniture, footwear, etc. – as well.

Second, training needs should be conceived not only from the perspective of job functions, but also from a life-cycle perspective. Despite the fact that TVET and education are managed under separate ministries, the NTB's perspective should encompass opportunities for education and training at all points along what might be thought of us an "education – training – post-secondary study – skills upgrading" continuum. Challenges exist at each point along the way; a tentative qualifications matrix summarizing needs at each of these junctures is offered (Table 7).

- **Youth:** Youth and their families compare the opportunity cost of attending school plus the eventual employment and earnings that might be attained after graduation, on the one

hand, with the potential returns to the family of early school departure and return to the household as a full-time contributing member. For many rural households, the equation mitigates in favor of the latter. Youth are not eligible for TVET services unless they have at least achieved a ninth grade education. Given the high prevalence of primary school abandonment, what to do about this "missing middle," i.e. the middle school-aged school leaver who is ineligible for further training? Are local life skills curricula the answer for keeping youth in school? Can some minimum pre-employment training be provided to youth in rural provinces that would better prepare them for better remunerating future livelihoods, whether on the farm, in town, or in the factory? A team of workforce specialists with education, youth, and economic backgrounds will be considering this question for a broader age cohort and a broader economic perspective (i.e. not narrowly focused on the garment industry) for USAID/Cambodia's education office in July and August 2006.[25]

- **Entry-level workers:** Semi-literate, minimally skilled youth, mostly women, arrive from the provinces at factory gates seeking work. Yet they know little, if anything, about this industry to which they seek to sell their labor and the skills it requires. While factories can readily teach sewing, the weakness of core and social skills – literacy, numeracy, language, teamwork, problem-solving – cost in terms of productivity and contribute to tensions on the factory floor. What kinds of pre-employment education and training would be effective and valued by employers to the point that they would require it of job applicants?
- **Production supervisors:** Factories wish to employ Cambodian production supervisors but find it extremely difficult to promote from within, for at least two reasons. First, given the current social organization of the factory floor, many sewing machine operators are reluctant to leave their Khmer colleagues on the line and join the ranks of the foreign supervisors. Second, many factories are reluctant to send supervisor candidates off-site for supervision training once they are on the job. A solution might be found in a better pre-employment training system, whereby not only operator skills but supervisor skills would be offered for those deemed qualified by virtue of an objective testing system at the end of the operator training course. Factories may wish to require supervisor candidates to work some minimum number of months on production lines, however, before promoting them in order to ground them with adequate line production experience.
- **Production management:** Certificate and degree programs are needed that will provide specialized training, both for new job entrants as well as for the already employed seeking to upgrade their skills and make a career switch or whose factories seek to promote them from within. Areas of emphasis include marketing, merchandising, industrial engineering, production planning, maintenance, office, compliance, and trade logistics skills. Some of the elements of these programs already exist in Cambodia's post-secondary institutions, but need to be grounded with additional courses to teach students about the garment industry. Some of these programs exist as independent, donor-funded activities, but aim to become independent and sustainably funded over the next several

[25] The assessment will be undertaken by USAID's Global Workforce in Transition project (www.gwit.us).

years; integrating these into an overarching institutional TVET vision will help them achieve that goal. Some of these programs do not yet exist, and will need to be developed from the ground up.

Third, any TVET strategy to address skill gaps in the garment industry must be accompanied by a broader information campaign to balance the news Cambodians typically hear about factory labor issues with information about the economic and workforce impacts of the industry. Skilled youth dismiss any thoughts of seeking employment in the garment industry because they perceive it to undervalue skills and be abusive of Khmer workers. One dimension of a broader information campaign would be for the garment industry to develop a strategy for better representation in the local and regional press. Another dimension would be for industry, education, and TVET to collaborate on the organization of a job forum to allow factories to accurately detail for educators, trainers, and youth their full range of workforce needs. Career guidance information should also be prepared for distribution to schools, training centers, youth groups, and other interested organizations in the provinces.

Fourth, financing of training for employment is an ongoing issue. To a poor family in the provinces, even the most modest of school fees serves to dissuade from sending a child to school, suggesting that training course fees are not affordable for the bulk of garment industry job seekers.[26] Cambodia does not yet have any skills levy in place that would distribute part of the cost of training to employers, although there has been much discussion about introducing such a policy. Garment factories have been exceedingly reluctant until now to pay for operator and supervisor training. In part, this stems from dissatisfaction with the quality of graduates. Tighter curriculum standards and more rigid certification requirements may inspire greater confidence in the quality of graduates, and thus encourage factories' increased willingness to pay for external training. Garment factories do, however, pay for skills acquisition in that they pay production incentives for more productive production workers and distinctly higher wages to production supervisors, maintenance workers, and management staff. Under a market model, the promise of higher wages in skilled employment acts as an incentive to individuals to invest in appropriate education and training.

On the other hand, not all technical and vocational education and training happens in TVET institutions. A significant amount of training happens on the job. What policy incentives might be created that would encourage factories to invest more on-site in their own workforce training programs? At present, donor-funded training programs offer attractive fees to factories that utilize their training services. Longer term, sustainable options should be sought that will encourage more factories to invest in workforce training. Options to explore might include tax or regulatory benefits for factories that meet training investment thresholds, whether through the funding of pre-employment or on-the-job training.

---

[26] One operator training program reports that it only assesses fees of its trainees *after* they are employed. If they cannot find a job, they are not obliged to reimburse the training program. One might also envision a system whereby accredited training programs are compensated directly by factories for training, paid for out of the worker's salary over a fixed timeframe, though the logistical and reliability issues would have to be worked out.

Table 7: Cambodia Garment Industry Draft Qualifications Matrix

Education/ Training Stage	Job Functions		Knowledge/ Skills Requirements	Certification
Youth – Grades 6th-8th – Grades 9th-12th			School-to-work • Cambodian economy • Cambodia in world economy • Understanding trade • Understanding foreign investment • What is industry • What is paid work • Team projects • Problem solving • Worker rights, responsibilities • Personal budgeting • English basics • Garment industry basics	School- or TVET-based program component, delivered over 1-3 years School or TVET program certificate
Workers, Pre-employment (Assumes early school leavers)			Above, plus • Intro to global garment industry • Intro to factory organization & skills required by department • Use of cutting, sewing machines • Quality control • Garment finishing • Compliance • Compensation systems • Workplace organization & dispute resolution	Pre-employment training program of 1-2 weeks Pre-employment training certificate
Workers, Employment	Production workers		See above	Worker training program of 1-2 weeks Worker training certificate
	Production supervision		Above, plus • Factory organization • Garment assembly • Production planning basics • Workplace safety • English	Supervision training program of 1-2 months, plus 2-6 months on-the-job line employment Supervision training program certificate
	Production management	Marketing Merchandising Industrial engineering, planning Maintenance Office (accounting, HR) Compliance Trade logistics	To be determined	To be determined

The next logical step is for this paper to be presented to an appropriate multi-stakeholder forum or series of fora, to gain feedback from representatives of GMAC, TVET, labor, and other interested parties. The GIPC Center Advisory Committee, with representatives of many of these stakeholder groups in attendance, may be an appropriate forum for a first round of such consideration.

The draft qualifications matrix outlined here obviously will need to be refined with input from all interested stakeholders. The matrix should also be extended to include consideration of which education and training service providers should be accredited to deliver this knowledge/skills base. A number of initiatives to broaden garment industry-related education and training opportunities in Cambodia could be considered. The Cambodia Garment Training Center could be expanded, to envelop one or more of the independent training programs that currently exist. Alternatively, garment sector-related education and training could be brought under the aegis of an existing polytechnic institute or university. At the public school level, curriculum units could be developed under the aegis of the Local Life Skills Program to introduce younger students to the world of work, industrialization, and *inter alia* the garment industry.

As the framework is discussed, modified, and improved, parameters will need to be established for qualification, accreditation, and certification. Programs, curricula, courses, and teacher training will need to be defined. And input is needed from all parties interested in furthering a garment industry training strategy – NTB, TVET, industry, donors, labor – to determine next steps for furthering the process.

Appendix A. References

Aring, Monika and Cathleen Corbitt. 1996. *Best Practice Compass to Workforce Development. A Toolkit for Policymakers, Donors, Governments, NGOs and Practitioners.* Newton, MA: Education Development Center. Available from www.gwit.us.

Asian Development Bank. 2003. "Project Completion Report on the Basic Skills Project (Loan 1368-CAM[SF]) in Cambodia." July.

_____. 2004. *Improving Technical Education and Vocational Training: Strategies for Asia.* Manila.

_____. Operations Evaluations Department. 2005. "Basic Skills Project (Loan 1368-CAM[SF]) in Cambodia." Project Performance Audit Report CAM 27411. Manila. September.

Association for Career and Technical Education (ACTE). 2006. *Reinventing the American High School for the Twenty-First Century.* Alexandria, VA: ACTE.

Barrie, Leonie. *Apparel sourcing in 2006: what can be learnt from events in 2005?* WWW.just-style.com Management Briefing. Worcestershire: Aroq Limited. January.

Becker, Elizabeth. 1986. *When the War Was Over.* New York: BBS Public Affairs, 1998 edition.

Carnevale, Anthony P. 1999. "Beyond Consensus: Much Ado about Job Training." *Brookings Review* (Fall): 40-43.

Cambodian Researchers for Development (CRD). 2004. "Garment Employees in Cambodia: A Socio-Economic Survey." Prepared for the Asian Development Bank. Phnom Penh.

Chan, Vuthy. 2005. "Appendix I: Cambodia Competitiveness Report 2005-2006." *Cambodia Economic Watch III.* Phnom Penh: Economic Institute of Cambodia.

Clothing Industry Training Authority. Various. *Annual Report 2002 & 2003.* Hong Kong.

Deloitte Touche Tohmatsu, National Association of Manufacturers, and The Manufacturing Institute. 2006. *2005 Skills Gap Report – A Survey of the American Manufacturing Workforce.* Washington.

Development Consulting International. 2003. *Private Sector Assessment for the Kingdom of Cambodia.* Manila: Asian Development Bank, December.

Dyson, Chloe and Jack Keating. 2005. "Skills, Knowledge, and Employability." Skills Working Paper No. 21. Geneva: International Labor Organization.

Ford, David. 2003. "Cambodian Accreditation: An Uncertain Beginning." *International Higher Education.* Fall. Chestnut Hill, MA: Boston College Center for International Higher Education.

Foreign Investment Advisory Service. 2004. "Cambodia: Corporate Social Responsibility & the Apparel Sector – Buyer survey results." December. Washington, DC: FIAS.

Friedman, Thomas L. 2005. *The World is Flat: A Brief History of the Twenty-First Century.* New York: Farrar, Straus, and Giroux.

Glock, Ruth E. and Grace I. Kunz. 2000. *Apparel Manufacturing: Sewn Product Analysis.* Third edition. Upper Saddle River, NJ: Prentice Hall.

International Labor Organization. 1999. "Skills in Asia and the Pacific: Why Training Matters." Technical report, Tripartite Asian and Pacific Consultative Meeting on Human Resources Development and Training, Singapore, 30 June – 2 July.

Lall, Sanjaya. 1999. "Competing with Labour: Skills and Competitiveness in Developing Countries." Issues in Development Discussion Paper 31. Geneva: International Labor Organization.

Laughlin, Joan and Rita C. Kean. 1995. "Assessment of Textiles and Clothing Academic Programs in the United States." *Clothing and Textiles Research Journal,* vol. 13, no. 3: 184-1999.

Low, Linda. 1998. "Jobs, technology and skill requirements in a globalized economy: Country study on Singapore." Employment and Training Papers 13. Geneva: International Labor Organization.

Maja, Botshabelo, Sabata Nakanyane, and Pat Telela, eds. 2005. *State of Skills in South Africa, 2005.* Pretoria: Department of Labour, Republic of South Africa.

Manufacturing Skill Standards Council. No date. *A Blueprint for Workforce Excellence Core and Concentration Skill Standards.* www.msscusa.org

McMillan, Margaret, Selina Pandolfi, and B. Lynn Salinger. 1999. "Promoting Foreign Direct Investment in Labor-Intensive, Manufacturing Exports in Developing Countries." Consulting Assistance on Economic Reform II Discussion Paper No. 42. Cambridge, MA: Harvard Institute for International Development, Harvard University. July.

Ministry of Commerce, Royal Government of Cambodia and Asian Development Bank. 2004. *Phase I Report: Cambodia's Garment Industry: Meeting the Challenges of the Post-Quota Environment.* Phnom Penh. October. Available at http://www.adb.org/CARM/CAM-Garment-Report-Final-2004.pdf.

Ministry of Education, Youth, and Sports, Royal Government of Cambodia. 2002. *Education for All: National Plan 2003-2015.* Phnom Penh.

_____. 2004a. *Education Strategic Plan 2004/08.* Phnom Penh. September.

_____. 2004b. *Policy for Curriculum Development 2005-2009.* Phnom Penh. December.

Ministry of Labor and Vocational Education, Royal Government of Cambodia. 2006. "National Technical And Vocational Education And Training Development Framework." Submitted to the National Training Board by Directorate General, TVET. Endorsed by the NTB, March 1, 2006.

Radelet, Steven. 1999. "Manufactured Exports, Export Platforms, and Economic Growth." Consulting Assistance on Economic Reform II Discussion Paper No. 43. Cambridge, MA: Harvard Institute for International Development, Harvard University. November.

Salinger, B. Lynn. 2004. "Known & Unknown Dimensions of Cambodia Garment Sector Challenges after 2004: Results of Scoping Mission for USAID." Prepared for the U.S. Agency for International Development. Arlington, VA: Nathan Associates Inc. July.

_____; Sok Hach; Chea Samnang; Neou Seiha; Mauro Pereira; Heinz Reich; and Jan Urlings. 2005. *Measuring Competitiveness and Labor Productivity in Cambodia's Garment Industry.* Prepared for the U.S. Agency for International Development. Arlington, VA: Nathan Associates Inc. June.

_____; Bruce Bolnick; Matthew Reisman; and Erin Endean. 2006. *Labor Market Adjustments in Countries Undergoing Trade Liberalization: An Overview and Resource Guide.* Arlington, VA: Nathan Associates.

U.S. Department of Labor. Employment and Training Administration. 2006. "U.S. Department of Labor Announces Industry-based Competency Model for Advanced Manufacturing." Press release. May 22.

Wilcox, Dave. 2006. "The Role of Industry-Based Certifications in Career and Technical Education." *Techniques,* pp. 21-23. www.acteonline.org. January.

Wills, Joan L. 199x. "Skill Standards: A Primer." Center for Workforce Development, Institute for Educational Leadership. www.iel.org

World Bank. 2004a. *Cambodia: Seizing the Global Opportunity: Investment Climate Assessment and Reform Strategy for Cambodia.* Report No. 27925-KH. Washington, DC: August 12.

_____. 2004b. *Cambodia at the Crossroads: Strengthening Accountability to Reduce Poverty.* Report No. 30636-KH. Washington, DC: November 15, 2004.

_____. 2005. *Cambodia: Quality Basic Education for All.* Report No. 32619-KH. Washington, DC. January.

World Economic Forum. 2005. *The Global Competitiveness Report 2005-2006.* Geneva.

Appendix B. Meetings Held

Industry

Garment Manufacturers Association in Cambodia

- Van Sou Ieng, Director
- Ken Loo, Secretary-general
- Executive Council of GMAC

Gawon Apparel, Mercedes Cha, President

HR Inc.

- Sandra D'Amico, Managing director; also Cambodian Federation of Employers & Business Associations, Secretary-general
- Sweta Satpathy, HR consultant

Manhattan Textile & Garment Corp. (MED-TECS), Jack Tsai, General manager

New Island Clothing (Cambodia) Ltd.

- Adrian Ross, General manager
- Gladys Ross, Training manager

NOW Corp.

- Leng Vannchai, Managing director
- Oeung Seng, Administrative manager

Ocean Garment Factory

- Mamounian Rashid, General Manager

Potamon Cambodia Ltd., Li Kam Shing, General Manager

PPS Ltd., Mr. Van Vor En, General manager

QMI Industrial Co., Ltd, Kieng Kirya, Assistant to Executive Director

Suntex PTE Ltd.

Albert Tan Kim Teck, Regional Vice President

Joseph Ang, HR Manager

Thai-Pore Garment Manufacturing Co. Ltd.

Roger Tan, Director

Meng Socheat, Account & HR Manager

United Faith Garment Factory Co., Alan Shi, former HR Manager

Education and Training Institutions

Don Bosco School Teuk Thla, Sr. Teresíta García y García, Director

Institute of Technology of Cambodia, Dr. Om Romny, Deputy-director (October 2005)

Kingdom of Cambodia, Ministry of Labor and Vocational Training

Pich Sophoang, Secretary of State, Training and Vocational Education

Tom Norton, TVET policy and institutional development advisor

National Polytechnic Institute of Cambodia

Bun Phearin, President

Muong Phasy, Head of Academic Department

Pannasastra University of Cambodia, Dr. Ky Ravikun, Academic program coordinator (October 2005)

Preah Kossomak Polytechnic Institute

Hem Chantha, Director

Moeung Viriya, Chief of education office

Organizations and Donors

Better Factories Project, Ros Harvey, Chief technical advisor

Global Skills X-change Corp., Alexandria, VA, Dave Wilcox, President

Improvement of Garment Technical Labor, Hang Vandet, Director

International Finance Corporation/Mekong Project Development Facility, Karla Quizon, Head of office

The Asia Foundation

Véronique Salze-Lozac'h, Regional director, Economic programs

Cambodia Tripartite Forum, "Building Competitiveness through Economic Reforms in Garment-Exporting Countries"

USAID/Cambodia

Reed Aeschliman, General development officer

W. Cullen Hughes, Economic growth officer

Lynn Losert, Education officer

VBNK, Jenny Pearson, Director

Youth Council of Cambodia, Mak Sarath, Program coordinator

Focus Groups

Garment factory workers, Chaom Chav & Phnom Penh

Students, National Polytechnic Institute of Cambodia

University students, Phnom Penh (Build Bright University, Institute of Technology of Cambodia, International University, National University of Management, Norton University, Pannasastra University, Royal University of Law and Economics)

Youth, Kampong Cham province

Youth, Prey Veng province