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Improving Productivity in Egypt's Ready-Made Garments Sector

Trip Report

PREPARED FOR THE QUALIFYING INDUSTRIAL ZONE UNIT
OF EGYPT'S MINISTRY OF TRADE AND INDUSTRY

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This publication was produced for review by the United States Agency for International Development. It was prepared by Gino Mareello, Jane O'Dell, and Lynn Salinger.

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DISCLAIMER:

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

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Abbreviations

CMTT	Cut, make, trim, trade, and transport
EFE	Education For Employment Foundation
EGP	Egyptian pound
ETP	Enterprise TVET Partnership
EU	European Union
FEI	Federation of Egyptian Industries
FTA	Free trade agreement
GIPC	Garment Industry Productivity Center (Cambodia)
GMAC	Garment Manufacturers Association in Cambodia
GOE	Government of Egypt
HR	Human resources
IMC	Industrial Modernization Center
ITC	Industrial Training Council
MTI	Ministry of Trade and Industry
PIP	Productivity Improvement Program
QIZ	Qualifying Industrial Zone
RMG	Ready-made garments
SDP	Skills Development Project
TAPRII	Technical Assistance to Policy Reform II project
TCF	Textile Consolidation Fund
TTA	Trainee Technical Advisor
TVET	Technical and vocational education and training
USAID	United States Agency for International Development

1. Executive Summary

The TAPRII RMG Sector Assessment Team has concluded that small- and medium-sized RMG factories in Egypt presently do not benefit to the extent that they should from available industrial modernization and vocational training services. Despite ample financial resources available from donors and the Government of Egypt, QIZ export growth appears to have stalled and industry governance and productivity challenges are observed in several crucial areas: need for an effective, industry-level organization that communicates actively with RMG industry members regarding policy issues, industry programs, and international trends; problems of labor shortages and high rates of labor turnover; poor management practices; and weaknesses in the workforce development system.

Together, these four factors add up to an underperforming RMG sector. While a handful of globally competitive firms already export high quality, high value-added garments to clients in the U.S. and Europe, the majority of QIZ-approved firms are missing opportunities to improve and expand their businesses.

To address these concerns, the Ministry of Trade and Industry's QIZ Unit seeks focused efforts that can introduce these techniques in Egypt to improve flagging levels of productivity within these sub-optimally performing firms. We have outlined an initiative, dubbed a Productivity Improvement Program (PIP), that combines specialized training to develop a cadre of local Technical Production Advisors who can deliver factory-tailored productivity training and coaching services, led by one or more globally experienced, senior Technical Experts, with in-factory training and production coaching to be delivered to small- and medium-sized, QIZ approved, export-capable factories. A Senior Program Manager and Senior Monitoring & Evaluation Expert comprise the remaining professional staff, with administrative support. The proposed PIP builds on the independent productivity training center model developed by Nathan Associates and its partners in Cambodia with support from the local USAID mission. A phased program is outlined (phase I pilot program, followed by a larger scale phase II) to fast-track the delivery of productivity services to export-capable firms. The core of six training and coaching modules to be implemented has been summarized, qualifications profiles suggested for the experts and advisors who will guide and implement the recommended Productivity Improvement Program, and preliminary resource requirements outlined.

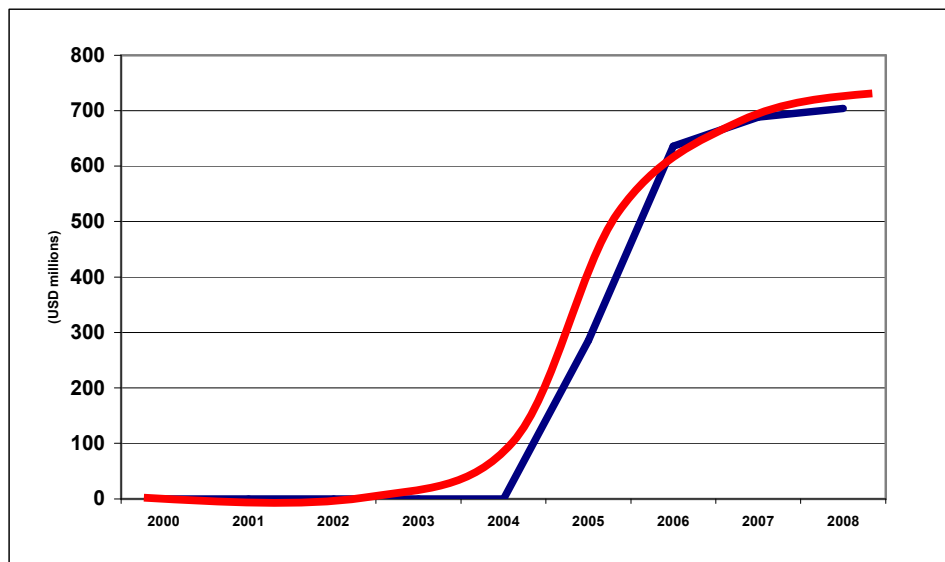
The following program design considerations have arisen. First, in order to avoid further institutional redundancy and client confusion, the QIZ Unit should seek a Memorandum of Understanding with the Industrial Modernization Center to ensure collaboration and open communication pathways among colleagues working in the RMG sector and coordinate service provision and financing. Second, the QIZ Unit should also consider the role that existing private and non-profit technical advisory service providers (e.g., Gherzi, Sahara Group, TrainTex) might have in the PIP. Third, the PIP may wish to utilize the services of a group such as the Education for Employment Foundation to recruit Production Advisor candidates. Finally, given the number of university programs that have the potential to educate skilled candidates for technical and management positions in the RMG industry, efforts to link one or more of these departments with the PIP would help to build a more sustainable, future workforce development system.

2. Limits to QIZ Export Growth?

Stakeholders gathered at an April 9, 2009, meeting in Cairo for an interim workshop on productivity and training needs in Egypt's ready-made garment (RMG) industry were presented with a provocative question. In his opening remarks to the American Chamber of Commerce of Egypt-sponsored seminar, Dr. Ali Awni, head of the Ministry of Trade and Industry's (MTI) QIZ Unit, asked whether Egypt's export growth in the ready-made garment (RMG) industry has already reached its ceiling.

Comparing the growth in Egypt's textile articles exports under the Qualifying Industrial Zone (QIZ) Arrangement to a sigmoid curve (S-curve, depicted in red below) illustrating the limit to growth (a similar graph is traced in Figure 1 below), Dr. Awni suggested that – in contrast with the boost experienced in Jordan (see Figure 2) – Egypt's RMG export growth trajectory may be short-lived.

Figure 1: Egypt's QIZ Exports of Textile and Textile Articles

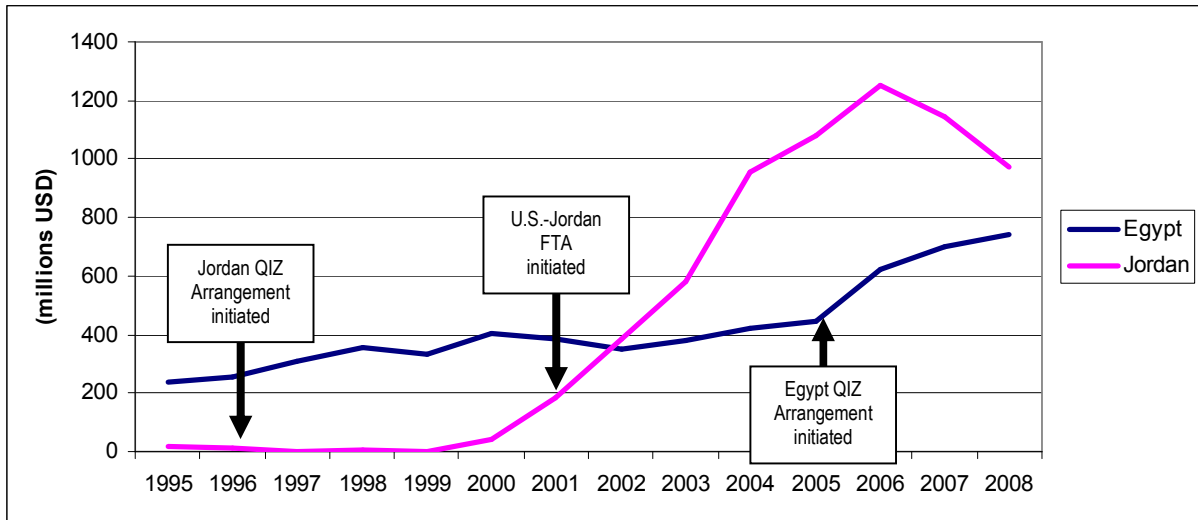


Source: Egypt Ministry of Trade and Industry, QIZ Unit, <http://www.qizegypt.gov.eg>

In its first year of QIZ Arrangement implementation, Egypt's garnered QIZ exports of \$285 million (2005). In 2006 the value of textiles exported from the QIZ more than doubled to \$636 million. Yet the rate of export growth leveled off thereafter. In 2007 and 2008, growth rates of 8.3% and 2.3%, respectively, were recorded.

Factors affecting this rapid deceleration of growth, Dr. Awni hypothesized, might include the business environment, government actions, industry actions, and workforce limitations.

Figure 2: Comparison of Jordan and Egypt Apparel Exports to U.S.



Source: U.S. Department of Commerce, Office of Textiles and Apparel

Note: Graph compares *total* apparel import values into the U.S., including all flows, whether under QIZ arrangements or not.

Its recent fall-off in apparel export growth notwithstanding, Egypt figures among the top 20 suppliers to the U.S. apparel market. Together, these 25 countries accounted for 90% of the 1st quarter 2009 apparel market in the U.S. (Table 1).

Nine of these countries receive tariff preferences in the U.S. market: Mexico (North America Free Trade Agreement (FTA)); Honduras, El Salvador, Guatemala, Nicaragua, and Dominican Republic (Central America-Dominican Republic FTA), Jordan (Jordan FTA and QIZ arrangement), Peru (Peru FTA), and Egypt (QIZ arrangement).

However, this by no means guarantees export success. None of the three leading suppliers, with a combined market share of 45%, accesses the U.S. through a preferential trade agreement. The performance of the nine countries with preference programs is mixed; several are experiencing declines in market share (e.g., Mexico, Honduras, El Salvador, Guatemala, Jordan, Dominican Republic, and Peru). Among the top 20, only eight countries – those lines shaded below in yellow – are experiencing *increases* in their market share into the U.S. This is an indicator of revealed comparative advantage – and Egypt figures among the “Elite Eight.”

Table 1: U.S. Apparel Market Shares, Top 20 Suppliers

Rank	Country	Preferential Trade						March
		with U.S.?	2004	2005	2006	2007	2008	2009
1	China	No	13.8%	22.0%	25.9%	30.8%	32.0%	30.7%
2	Vietnam	No	4.0%	4.0%	4.5%	5.9%	7.3%	8.2%
3	Indonesia	No	3.7%	4.2%	5.1%	5.4%	5.6%	7.2%
4	Bangladesh	No	3.1%	3.5%	4.2%	4.2%	4.8%	6.3%
5	India	No	3.4%	4.3%	4.4%	4.3%	4.3%	5.8%
6	Mexico	NAFTA	10.3%	8.8%	7.4%	6.1%	5.6%	5.2%
7	Cambodia	No	2.2%	2.5%	3.0%	3.3%	3.3%	3.4%
8	Honduras	CAFTA-DR	4.1%	3.8%	3.4%	3.4%	3.6%	3.1%
9	Sri Lanka	No	2.4%	2.4%	2.3%	2.1%	2.0%	2.4%
10	Thailand	No	2.8%	2.6%	2.6%	2.4%	2.3%	2.4%
11	El Salvador	CAFTA-DR	2.7%	2.4%	2.0%	2.0%	2.1%	2.0%
12	Philippines	No	2.8%	2.7%	2.8%	2.3%	1.9%	2.0%
13	Pakistan	No	1.8%	1.8%	2.0%	2.0%	2.1%	1.9%
14	Guatemala	CAFTA-DR	3.0%	2.6%	2.3%	2.0%	1.9%	1.7%
15	Italy	No	2.2%	2.0%	1.8%	1.9%	1.9%	1.5%
16	Jordan	QIZ, US-Jordan FTA	1.5%	1.6%	1.7%	1.5%	1.4%	1.4%
17	Nicaragua	CAFTA-DR	0.9%	1.0%	1.2%	1.3%	1.3%	1.3%
18	Egypt	QIZ	0.7%	0.6%	0.9%	0.9%	1.0%	1.3%
19	Peru	US-Peru TPA	1.0%	1.2%	1.2%	1.1%	1.1%	1.1%
20	Dominican Republic	CAFTA-DR	3.2%	2.7%	2.2%	1.4%	1.2%	0.9%

Source: U.S. Department of Commerce, Office of Textiles and Apparel, Major Shippers Reports (data accessed May 12, 2009)

Note: Yellow highlight indicates a country whose market share into the U.S. is increasing.

Despite these auspicious signs, Egypt's recent fall-off in export growth is troubling.¹ To test the hypothesis that Egypt has reached the ceiling of its RMG sector growth potential and to explore whether anything can be done to give Egypt's industry several more years to push the limits of growth for RMG exports and stretch the S-curve to reflect continued expansion, Nathan Associates Inc., in its role as lead of the trade component of the USAID-supported Technical Assistance for Policy Reform (TAPR) II project, under the overall direction of Bearing Point Inc., has provided resources to the MTI's QIZ Unit. As part of this assignment, economist and workforce development expert Lynn Salinger visited Egypt to conduct an initial scoping study of RMG sector issues in August 2008 (Salinger 2008). Garment industry engineer Giovanni Marelllo conducted rapid technical appraisals of nineteen factories in January 2009, with the support of the American Chamber of Commerce in Egypt (Marelllo 2009). Salinger and garment industry training specialist Jane O'Dell returned to Egypt in April 2009 under TAPRII and completed the RMG sector assessment for MTI, focusing on institutional opportunities for training and management capacity building (and financing thereof) in the RMG sector.

The team met with managers from and/or toured twenty-seven factories in Cairo, Giza, 10th of Ramadan, Badr City, Ismailia, Port Said, and Alexandria. We also conducted two focus group

¹ However, if 1st quarter 2009 levels are extrapolated to twelve-month levels, only Indonesia, Bangladesh, India – and Egypt – will have increased the value of U.S. apparel imports.

discussions with factory owners and managers. The first was conducted at an event organized by the QIZ Unit to review QIZ customs compliance issues, held at the Federation of Egyptian Industries (April 2, 2009). The second was conducted with industry representatives following the American Chamber of Commerce in Egypt workshop (April 5, 2009). For an external perspective, our team met with regional representatives of U.S. clothing retailer groups (see Salinger 2008). Finally, we explored resources available from public and private training and service providers offering industrial upgrading to the garment industry in Egypt. A full list of meetings held is appended to this report.

The present report summarizes findings from Mr. Marelló's assessments, as well as from Ms. O'Dell and Salinger's visits with training and industrial upgrading service providers (Section 3). The Cambodia model of a Garment Industry Productivity Center is summarized (Section 4). Suggestions for a pilot program to stimulate productivity are also outlined (Section 5). A preliminary estimate of resource requirements (Annex A), list of meetings held (Annex B), summaries of services available from Egypt-based training providers (Annex C), and sources consulted (Annex D) are also included at the end of this report.

3. Egypt's RMG Sector Productivity Dilemma

Managers seek to increase the productivity of their operations as one element in their overall competitiveness strategy.²

“Productivity” is a business concept that measures physical output achieved for a given unit of input. An individual’s productivity is the sum of accomplishments, given the time he or she has exerted. A factory’s productivity is the total output across all production lines measured either in terms of physical product or value of product, relative to the total labor time (direct production labor and indirect management and technical labor) expended. In the RMG sector labor productivity is affected not only by the rapidity with which cutters, sewing operators, and pressers do their production jobs, but also by the technical and management skills of supervisors, industrial engineers, work planners, and managers who plan and oversee their work. With increased productivity, unit costs are reduced, wages can be raised, and exports and market share can be increased.

A rapid appraisal of nine QIZ companies carried out in August 2008 noted that labor productivity among RMG companies was low, although high-productivity exceptions could be found, and recommended that a productivity and workforce development assessment be undertaken among a broader sample of firms to deepen understanding of the challenges facing the sector. The present report, following this broader assessment, highlights one overall industry governance issue and three production-specific factors that collectively bear on the productivity of Egypt’s RMG factories:

1. Lack of an effective organization representing a broad cross-section of RMG industry membership that can help factories navigate through complex information regarding government programs, policies, and industry practices.
2. Labor shortages, and thus high rates of labor turnover, constrain the ability of factories to maintain consistent work flow through production lines and to expand operations.
3. Poor management practices keep overall production efficiency low.
4. Despite ample supply of industrial training and advisory services, many factories, especially those of small and medium size, fail to connect, and thus lag significantly in their industrial modernization efforts, with weak productivity as a result.

These challenges are costing the country in terms of lost competitiveness and export growth. Experience from other countries suggests that addressing productivity issues could easily boost Egypt’s RMG production *with existing labor resources* to allow Egypt to expand its exports by 20-40%. Each of these is discussed in turn.

² Other variables affecting competitiveness include the extent to which Egyptian factories are well integrated along the value-chain and can deliver a full package of services (e.g., sourcing, finishing, logistics) to buyers, the ability to innovate new processes and products, customer service, cost control (itself a function of productivity), and so on.

3.1 RMG Industry Representation

Egypt's industry is hampered by the lack of a single strong association to represent members' interests, communicate with members on issues of interest, act as a forum for synthesizing points of view either across the industry as a whole or disaggregated according to enterprise characteristics, and provide updates on management and technical innovations practiced elsewhere in the world.

In most garment-producing countries, the manufacturers' association represents the first point of contact with "the industry." For example, in Cambodia, the Garment Manufacturers Association in Cambodia (GMAC) represents the universe of mostly foreign-owned garment companies that produce there, in South Africa the Clothing Federation is distinct from the Textile Federation, while in Morocco textiles and garments producers are represented in one *Association Marocaine des Industries du Textile et de l'Habillement* (AMITH).

In Egypt, we see a number of organizations with overlapping concerns. The government-funded Federation of Egyptian Industries (FEI), which is affiliated with the MTI, is the country's most powerful representative of private sector interests organization. Within FEI are sixteen industry-specific "chambers," including the Chamber of Textiles Industries. An RMG Export Council exists, one of several created by MTI, though its presence is extremely weak.³ The only readily identifiable online presence for Egyptian textile exporters is [Egytex.com](http://egyptex.com), the "official portal of the Egyptian textile industry" run by the Sahara Group, a private textile industry consultancy based in Cairo.⁴

Lack of clear mandates and accountabilities tends to produce inertia and confusion among companies in the industry, obstructing the delivery of meaningful services. In order to probe this tentative hypothesis further, 37 RMG companies were surveyed as part of this assessment on a range of issues. When asked, "What are the most important services you receive to help you improve your production and export performance from each of the following government and private sector organizations?" they indicated on average a much higher appreciation for the services received from MTI (mentioned were the Export Fund, Training Fund, incentives, and marketing services), the QIZ Unit (mentioned were "general awareness," "support, help," publications, "studies, seminars," "moral support," awareness of QIZ and other trade agreements, U.S. Customs-related compliance assistance), and the IMC (ISO certification, WRAP certification, training, development services) than for anything received from the RMG Export Council or the Chamber.⁵

Given the breadth of RMG industry-specific services offered to the more than 700 firms with which it maintains regular contact on the subject of QIZ exports, the QIZ Unit seems to represent the best appreciated, de facto "industry association" at present.

³ The Ready-Made Garment Export Council has recently switched leadership. Several informants mentioned it as having once been an active organization, providing regular communication to industry members. It appears to have lost momentum of late.

⁴ See <http://www.egyptex.com/main/>.

⁵ Average scores, on scale of 1 (lowest) to 5 (highest) appreciation: IMC 2.62, MTI 2.58, QIZ Unit 2.57, RMG Export Council 0.80, CTI 0.44, FEI 0.36.

3.2 Labor Issues

Most of Egypt's garment factories complain of difficulties attracting job applicants, high rates of labor turnover (from 20% to as much as 100% each year), and heavy absenteeism (on average, 10-20%). These are characteristics of labor market "supply deficits," where demand for labor (in general, or with regard to specific skill sets) exceeds available supply at a given wage rate and overall compensation package.

Explaining the apparent labor deficit involves consideration of multiple factors. Labor supply to the RMG sector in Egypt may be in deficit for a number of reasons:

- *The overall economy may be booming and thus offering competing job opportunities.* Yet according to Egypt's Central Agency for Public Mobilization and Statistics, formal unemployment is between 8 and 9% in Egypt (albeit somewhat lower than the 10-11% of just two years ago). Youth unemployment is particularly high, said to be twice the level of overall unemployment (Dhillon 2009), 95% of whom are youth with at least a secondary education.
- *Wages offered in the RMG sector may be too low, relative to other comparable job opportunities.* Starting operator wages in the industry are reported to be on the order of 300 Egyptian Pounds (EGP) per month (\$53, at early 2009 exchange rates), rising to 700-900 EGP (\$125-160) per month with bonuses and production incentives for skilled operators. Several factory owners acknowledged that they are constrained to increase the wages they offer, or risk losing their staff to nearby factories that are willing to pay as little as 50 EGP more per month (about \$9).
- *Working conditions may be considered severe, relative to other comparable job opportunities.* RMG factories usually expect ten hours of work per day, inclusive of overtime,⁶ and six days per week. Anecdotal reports were also heard of verbal abuse by line supervisors toward their sewing operators. Such a level of job-related stress may make factory jobs undesirable, relative to far more relaxed, albeit perhaps less highly remunerating, positions in government or the retail sector.
- *Opportunities to pursue private, factory-based work may be poorly advertised or youth may be poorly prepared to seek work.* Few factory managers actively recruit at schools and universities, nor do they provide incentives to existing staff to suggest new hiring candidates. Youth may be unaware of the job openings, skills required, and salary levels that can be achieved. Several organizations are working to improve linkages between youth and industry. For example, the EU- and GOE-co-financed TVET Reform Program undertook a sewing operator recruitment drive for the RMG industry and has trained over 7,000 in three years.⁷ The Education for Employment Foundation's Egypt program is developing a training program to prepare Egyptian youth for textile merchandiser positions.⁸ The Mubarak-Kohl Initiative's Vocational Education, Training, and

⁶ By law, employers must be a 35% overtime premium for two hours of overtime per day in summer. In winter, when workers leave the factory after dark, the premium rises to 70%. If workers are required to work on Fridays, they receive a 100% overtime bonus.

⁷ See <http://www.tvet.org/rmg.htm>.

⁸ See <http://www.efefoundation.org/index.php?m=3&s=1&t=3>.

Employment Program has instituted an employability training program for 15-29 year-old technical and secondary school graduates and out-of-school youth.⁹

- *Gender issues affect labor force participation rates.* Women, who are traditionally heavily represented in RMG sector workforces around the world, may find it difficult to balance home-based responsibilities and work after they are married. Williams (2008) and Assaad and Arntz (no date) identify a range of cultural and economic barriers to female labor force participation in Muslim countries. Restrictions against the unescorted movement of women outside the home and negative perceptions of women's participation in formal employment or entrepreneurship outside of the home conspire against their economic activity away from home. Moreover, limited access to technologies and institutions that would ease women's home-based responsibilities for cooking, cleaning, seeking water, child care, health care, and so on makes it difficult for the household to relinquish a woman to the external world of work when so many tasks in the home require women's attention.
- *Lack of discretionary control over income earned may discourage job seeking by youth.* Youth remain in their parents' home until marriage. Incomes earned by youth are often turned over to the heads of their households. Lack of independent control over income earned, particularly in households where one or both senior adults work, may make youth less inclined to seek work outside the home.
- *Garment factories may not be conveniently located near sources of appropriate labor supply.* This requires workers to spend significant additional time commuting between home and the factory, with an additional implicit cost of another 1-3 hours per day spent in transit.
- *Labor markets may be quite distinct between urban districts and rural communities.* Different employment, wage, and working conditions expectations may make it easier to attract factory labor from rural communities.
- *Lack of attention to human resource development within factories may discourage job seekers, especially among the better educated.* Workers may, in addition to employment and a paycheck, aspire to increased skills and responsibilities as they progress along a career path. Assaad and Barsoum (2007, 17) note the huge improvement in educational attainment of new labor market entrants. Whereas in 1980, 40% of those entering the labor market had not completed their primary education, by 2005 70% had received at least a secondary education. However, expectations regarding job characteristics and career advancement opportunities rise with increased education. RMG factories will have to pay more attention to human resource development if they continue to employ from this better educated labor pool which is more prominent in the urban neighborhoods where qualifying industrial zones are congregated.

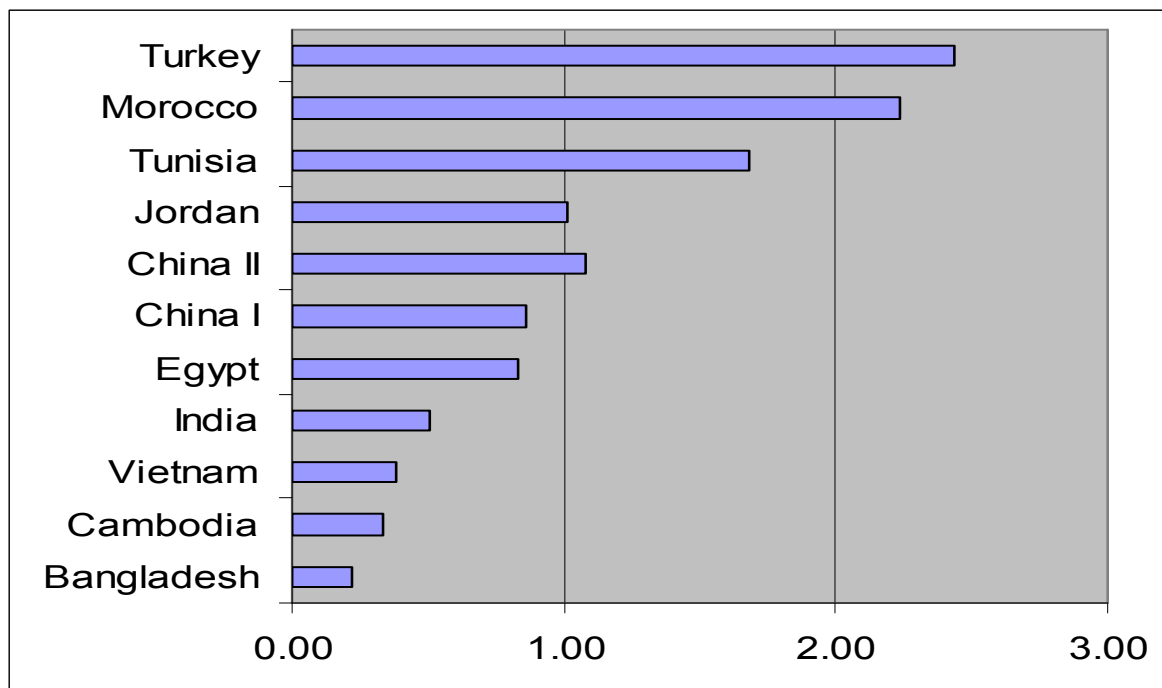
When labor is in short supply, we would expect to observe upward pressure on wages or on the overall compensation package offered. In fact, anecdotal evidence from interviews suggests that some factories are more successful than others in attracting a loyal workforce: foreign-owned RMG factories that offer higher wages, companies that provide transportation to/from work even at great distance, factories that offer job training and promotion, and companies that

⁹ See <http://www.mki-vetep.com/>.

encourage life partnering between co-workers cited these programs as helpful in improving labor outcomes. In addition, a number of factories we visited are now employing a small South Asian labor force to supplement their Egyptian staff.¹⁰ Managers are reportedly quite pleased with their productivity levels, given similar wage levels.

Of course, firms may be concerned that raising employees' wages will negatively affect their cost competitiveness, relative to low-wage countries such as Bangladesh and Cambodia (see Figure 3).

Figure 3: Comparing Garment Industry Labor Costs (USD/hour)



Source: Jassin-O'Rourke Group, LLC, 2008 Global Apparel Manufacturing Labor Costs

However, factories that improve other dimensions of their competitiveness equation can absorb higher production wage costs. Strategies to do this may include, for example, increasing the physical productivity of their lines, increasing the unit value-added generated by the factory by improving skills and shifting into more complex, higher priced, higher quality garments, or expanding the range of services offered to clients (e.g., product design and development, raw materials sourcing, tighter integration with buyers' IT departments in order to allow the latter to track progress in filling orders, custom product finishing, full trade logistics).

3.3 Production Issues

Productivity is a measurable variable. Methods of "scientific management" that pioneered work, time, and motion study were first developed in the late 1800s by an American mechanical engineer, Frederick Winslow Taylor, whose *Principles of Scientific Management* (1911) is still considered to be the seminal work in this area (Barnes 1980). His observations about the need to

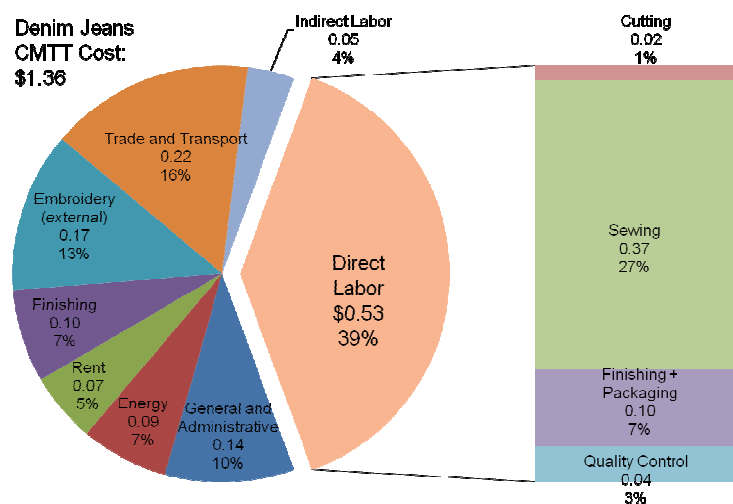
¹⁰ Egypt's labor law stipulates that no more than 10% of an enterprise's workforce may be comprised of foreign nationals.

achieve work rhythms that allow for sustained, repeated motion, while respecting workers' needs for work breaks and good ergonomic principles, still form the core of industrial engineering.¹¹

Productivity benchmarking carried out in January 2009 in Egypt's RMG sector (Marello 2009) concluded that while wage rates in Egypt's RMG factories are extremely competitive, low levels of labor productivity achieved in firms erodes the advantage conferred by these low wages. Such mediocre performance is due to moderate, at best, organization practiced in most factories. With better production planning and controls, introduced through a focus on training of middle management and supervisors, productivity increases of 20% or more can realistically be achieved in most factories.

Productivity evaluation focuses on how work processes unfold on the production floor for the simple reason that direct, or production, labor typically comprises the largest share of the factory-gate cost of a garment. For instance, in Figure 4 below depicting sample costs of production of a typical pair of denim jeans, direct labor accounts for 39% of the final cost ex-factory of a pair of denim jeans.

Figure 4: Sample Cost Breakdown, Denim Jeans



Note: CMTT = Cut, make, trim, trade, and transport

Source: Feeney and Minor (2007)

Marello's technical survey examined factory performance in seven distinct areas. Among the 19-factory sample, product development capability was the greatest strength, with 145 out of a possible 190 points. Only two companies lacked product development capability. However, in other performance areas, Egypt's RMG factories fared less well. Cutting room organization was weak in over half the sample, often affecting quality of final product. No factory scored over 8 in sewing organization, with major opportunities for improvement in the areas of line balancing

¹¹ According to the Institute of Industrial Engineers, "Industrial engineering is concerned with the design, improvement and installation of integrated systems of people, materials, information, equipment and energy. It draws upon specialized knowledge and skill in the mathematical, physical, and social sciences, together with the principles and methods of engineering analysis and design, to specify, predict, and evaluate the results to be obtained from such systems;" from www.iienet2.org.

and training. Finishing scored in the range of 5-8, with overstaffing found. The majority of factories visited scored below 6 on organization and control systems, with potential for better use of balancing and standard times to set efficiency targets. Out of a total possible 190 points in each area, the following levels of performance were measured:

Table 2: RMG Sector Technical Performance

Performance Area	Level of Performance (100% = 190 points)	Potential Efficiency Gain
Product development	145	
Cutting room organization	121	25-80%
Sewing section organization	119	30-100%
Finishing and packing	119	20-100%
Organization and control systems	115	
Productivity	98	
Quality control organization	127	

Source: Marengo (2009)

Recommendations of the productivity benchmarking survey included:

1. Introduce a proper work-study system and a trained industrial engineering team.
2. Control the efficiency of each operator by issuing daily productivity reports for each section and line/group.
3. Introduce a piece-rate compensation system, based on individually measured efficiency levels.
4. Commit to training of middle management and supervisors in working methods, measurement of standard times, measurement of efficiency, production balancing, and quality.
5. Set reasonable targets for middle management to reach. With the introduction of correct standard times as benchmarks, a good factory may expect to perform at 80-85% efficiency in the cutting room and finishing sections and 75-80% in the sewing lines.
6. Introduce better procedures for fabric control, including the ability to lay and cut stripes and processes to identify and eliminate fabric defects in the cutting room.
7. Streamline the quality control system by defining quality specifications for all operations, training the quality control team to be efficient, collecting information from all quality control points, and issuing weekly quality control reports to compare results with targets.

3.4 Workforce Development Issues

Around the world, workforce development systems help companies address the labor and production issues outlined above. Such systems usually supply 1) educated and trained workers to be hired by employers, matching them through public or private employment services, and 2) training and advisory services to develop or re-skill workforces on the job.

3.4.1 Elements of a Workforce Development System

A country's workforce development system normally consists of the following elements. A **general education** system prepares youth (and perhaps lifelong learners) with knowledge and skills needed to enter the general workforce. In addition, a **vocational education** system further prepares students, out-of-school youth, and lifelong learners with technical knowledge and skills needed to enter specific occupations and manual trades. These systems may be under public administration through a Department or Ministry of Education, or they may be privately financed. **Accreditation systems** normally oversee both public and private institutions to ensure adherence with agreed-upon educational standards and provide a measure of quality assurance to consumers.

Specialized **training and advisory services** provide management and technical advice and coaching to individuals or firms. These services are normally accessed through private institutions, though public support may be available to cover part of the cost of the services borne by individuals and firms who engage their services.

An **employer association** or private sector group provides a forum for discussion among enterprises. In the case of labor market and workforce development issues, such an association can be a useful forum for synthesizing feedback to a ministry of labor, seeking to develop skills standards for the industry, or its employment office, seeking to develop recruitment criteria for new job entrants, or a ministry of education, seeking to revamp technical curricula to better prepare students to enter the industry's workforce.

Some form of multi-stakeholder forum, such as a **workforce board or council**, helps employers in specific industries to articulate the knowledge and skills they need in their workforces and educators and trainers to understand how to adapt course outlines, program curricula, and degree and certificate requirements to meet those needs.¹² In addition, employers may connect directly with students, either by offering internship or summer work opportunities, speaking at secondary and tertiary education fora to increase awareness of youth about job opportunities in their industry, or offering to mentor students who seek to do enterprise-based research projects or case studies.

Employment agencies, either housed within a Department or Ministry of Labor or private recruitment firms, that provide job and career information to job seekers, identify job openings and publicize them through various media to job seekers, match job seekers with employers looking to fill job vacancies, and help job seekers to prepare for job interviews.

At a micro level, **human resource departments** fill a number of these functions within the firm. They match the profiles of job applicants and existing personnel with managers' skills needs. They provide opportunities for employees to review their own performance and be reviewed by peers and supervisors. They may manage labor relations between workers and management. And they can help employees understand better their role within the firm and what they need to do to advance within the company. Few Egyptian RMG factories operate human resource (HR) departments that offer a full complement of HR services to all levels of personnel. Often,

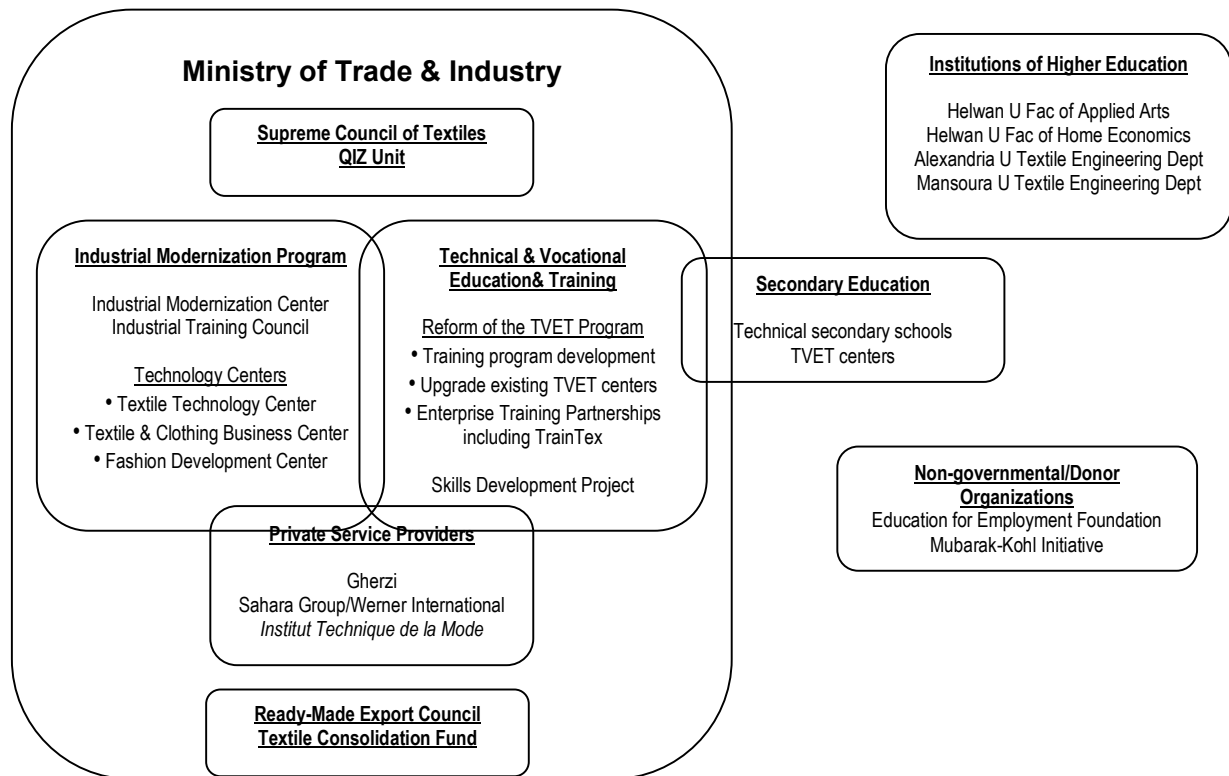
¹² For an example of how such collaboration can yield benefits in terms of a freshly skilled, young workforce, investments, industrial modernization, and jobs, see The Economist's April 16 article regarding the expansion of the biotechnology industry in North Carolina (2009).

HR departments are staffed with “compliance officers,” who provide information on workplace conditions to representatives of international buyers and auditing firms.

3.4.2 Supply of Industrial Training and Capacity-Building Services in Egypt

The supply of industrial training and capacity-building services available in Egypt is plentiful and generously financed. MTI manages many of these under the auspices of its Industrial Modernization Plan, launched in the 1990s. The network of service providers identified during our April 2009 visit is outlined in Figure 5 below.

Figure 5: Network of RMG Industry Service Providers



Source: Mission visits.

This visual highlights the heavy involvement of the Ministry in training in the sector. It also underscores the dissociation between institutions of higher education, on the one hand, and the industry, on the other. There is some overlap between the MTI and technical secondary schools, as well as between private service providers and MTI programs.

Within the Ministry of Trade and Industry, a wealth of training and capacity-building programs are already available to the RMG industry:

- Egypt’s **Program for Industrial Modernization** was originally launched in the 1990s as a five-year cooperation with the European Union’s Euro-Mediterranean program. In 2001 the **Industrial Modernization Center (IMC)** was launched (with 430 million € from the EU plus 130 million € equivalent from the GOE, and an additional contribution from Egyptian firms) to provide financial assistance, technical assistance, business resource centers, and institutional development across a range of industries. In 2005, the IMC

became a sustainable industrial development agency of the government, and is now fully funded by the GOE. The IMC subsidizes employment creation,¹³ provides funding to enterprises to hire technical assistance in eight areas (human resources, management, production, quality, IT, marketing, export promotion, and finance), and – in conjunction with the **Industrial Training Council (ITC)** – subsidizes demand-driven training courses. **ExpoLink**, the former USAID-funded export promotion program, is now also housed within IMC. The cost of technical assistance services to firms is subsidized 60-80% by IMC, up to a specific ceiling.¹⁴ IMC's annual budget is 1.3 billion EGP.

- **ITC**, currently developing a new institutional strategy, subsidizes up to 80% of the cost of training services to enterprises. ITC works with the TVET Reform Program (below) and IMC. In addition to acting as an umbrella financing mechanism for training provision, ITC is also working on a project to upgrade 100 technical secondary schools. Its annual budget is 500 million EGP.
- **Technical and innovation centers** within the MTI offer specialized training and business services. Those focusing on the textile industry include the **Textile Technology Center** (equipped and seriously under-utilized, despite the engagement of two consultants to provide free diagnostics to RMG factories in order to identify needs and then supply training), the **Textile and Clothing Business Center** (ambitious mission to link Egyptian producers with international buyers that seems to overlap with functions already carried out by ExpoLink, the **RMG Export Council**, and several private, Egypt-based companies), and the **Fashion Design Center** (dynamic, highly specialized training in fashion and jewelry design, overseen by the Milan-based Istituto di Moda Burgo). Of the three, the FDC appears to be the most active, with a database of 1200 graduates who have participated in the center's two-year, accredited and short-term courses. FDC also runs a business incubator to help launch independent companies of its graduates. Consulting services by FDC staff and graduates are also provided to RMG firms seeking design and product development assistance; about 30 companies have thus far taken advantage of this service. Of these three, FDC is presently the only technology center that is self-financing, through fees charged to students and private sector clients.
- In 2005 the EU launched a program to **reform Egypt's technical and vocational education and training (TVET) program**, co-funded by the EU and GOE (66 million €), also managed within the MTI. The project works at the national level on the TVET policy and regulatory environment, at the industry level delivering technical assistance via public-private enterprise TVET partnerships, and at a decentralized level to improve the quality of TVET delivery. Training curricula and materials are prepared for use in upgraded TVET centers.
- One of the Enterprise TVET Partnerships (ETPs) under the TVET Reform Program is **TrainTex**, an NGO that provides enterprise-level training of sewing operators, production supervisors, pattern makers, machine maintenance personnel, quality

¹³ IMC explains that it offers a 15,000 EGP in-kind stipend (grants for energy and social services) per worker hired to employers. ITC says it pays 80% of the first three months of salary of new employees of foreign (Turkish)-invested firms.

¹⁴ Up to 500,000 € per company or 10% of turnover for competitiveness-related technical assistance, up to 500,000 € for research and development-related technical assistance, and up to 200,000 € for productivity-related technical assistance.

assurance personnel, time and motion study, and RMG company management. TrainTex also provides specialized consultants to RMG firms upon request.

- Egypt's **Skills Development Project** is the result of a seven-year loan (2003-2010) by the World Bank to the GOE, managed alongside the TVET Reform Program in the MTI. The SDP aims to stimulate private sector demand for skills training services by small- and medium-sized businesses in Egypt, focusing on companies in the manufacturing, construction, and tourism sectors (World Bank 2003).
- The role of the **QIZ Unit** within the MTI is primarily to manage implementation of the QIZ Arrangement, making sure that participating firms are physically located in one of the designated QIZs, collecting and maintaining registration information from each participating firm, certifying that each participating firm is in compliance with QIZ regulations, and communicating on a regular basis with all firms on any news of note. As of February 2009, 740 Egyptian companies are qualified to participate in the QIZ.¹⁵
- Finally, on April 9, 2009, the MTI Minister Rachid M. Rachid announced plans to establish a **Supreme Council of Textiles** with a package of resources worth nearly \$60 million to develop a strategy for reviving the flagging textile industry in Egypt.¹⁶ It is not known – nor could any confirming information be found online after the Assessment Team's return to the U.S. – what actions or programs this Council may initiate. We speculate that this likely represents long-awaited government action in response to the "Vision 2020" prepared for the IMC (Gherzi 2007).

Outside of MTI, there are a number of other textile-related initiatives underway in Egypt. Private for-profit companies and not-for-profit organizations also supply training programs. For instance, a privately operated fashion design center exists in Giza. The **Institut Technique de la Mode** is affiliated with the *Ecole de la Chambre Syndicale de la Couture Parisienne* and currently seeks accreditation from ITC to be an approved training provider. ITC offers a three-year accredited degree and short courses. The institute is enjoying success: twice in the last three years its graduates have won the Lebanese Broadcasting Corporation's "Mission Fashion" reality television competition (similar to the "Project Runway" show in the U.S.).

The **Education For Employment (EFE) Foundation** in Egypt implements programs to qualify unemployed youth for employment. In the textile industry, they are preparing with Gherzi a textile industry merchandiser training program. The **Mubarak-Kohl Initiative's** Vocational Education, Training, and Employment Program also targets unemployed youth with employment coaching resources. Technical education is provided by **technical secondary schools** in Egypt. A number of **higher education programs** prepare students in related fields (Table 3). The textile-related programs were characterized by one informant as "very academic and not linked to the private sector at all," but we were unable to interview anyone from these faculties during our stay in Cairo, despite repeated efforts. Moreover, one RMG factory manager related that when he tried to contact one of these university departments to learn more about their curriculum and whether their graduates would be interested in employment with his firm, the university was unwilling to grant him a meeting. Other anecdotal accounts

¹⁵ For a complete list, see <http://www.qizegypt.gov.eg>.

¹⁶ "\$59m kiss of life," Editorial, *The Egyptian Gazette*, April 9, 2009.

reinforced the impression that these higher education departments are not well connected to industry leaders.

Table 3: Egyptian University Programs in Related Fields

Textiles-Related University Programs	Industrial Engineering-Related University Programs
<ul style="list-style-type: none"> • Alexandria University, Faculty of Engineering, Department of Textile Engineering • Helwan University, Faculty of Applied Arts, Textiles Design program • Helwan University, Faculty of Home Economics, Clothes and Textiles program • Mansoura University, Faculty of Engineering, Department of Textile Engineering 	<ul style="list-style-type: none"> • Ain Shams University, Faculty of Engineering, Design & Production Engineering • Alexandria University, Faculty of Engineering, graduate studies in Industrial Engineering • The British University in Egypt, Mechanical Engineering Department • Cairo University, Center for Advancement of Post-Graduate Studies & Research in Engineering Sciences, Faculty of Engineering, Industrial Engineering training program • Fayoum University, Faculty of Engineering, Industrial Department • Modern Sciences & Arts University, Department of Engineering, Industrial Systems engineering

In the private sector at least two companies provide technical training and consulting services to private clients. **Gherzi**, headquartered in Zurich, Switzerland with offices in Cairo, provides technical consultants to work with RMG factories and also advises GOE agencies. As already mentioned, Gherzi conducted the far-reaching “Vision 2020” study for the IMC. The **Sahara Group**, which is affiliated with the Washington-based **Werner International, Inc.**, provides similar services to clients and will be undertaking a firm-level inventory on training needs for the Chamber of Textiles Industries.

It should also be noted that the supply of **individual Egyptian textile experts** to deliver these services to RMG factories is quite small. In several instances, local consulting services serve as conduits for international experts to be brought in. This is a great solution, on a case-by-case basis, for firms that know what they want and who can provide it. However, it does little to develop a cadre of Egyptian technical advisors who can service the industry.

3.4.3 Demand for Industrial Training and Capacity-Building Services in Egypt

As the descriptions above attest, RMG factories can access a wide variety of programs that are well funded, either by donors or government or both, and that offer RMG companies significant subsidies to encourage them to make use of the programs. In the face of such an abundance of service offerings, the Assessment Team probed repeatedly to understand why some programs appear under-utilized and companies still face the productivity challenges they do.

A number of explanations can be offered. In some cases, RMG factories do not know what is available despite numerous mailings, meetings, and even door-to-door visits to companies to inform them of government programs. Larger companies are better able to take advantage of these programs; medium and small companies were both less aware of the options and unsure how to proceed. Some of these institutions and organizations have ill-defined or overlapping mandates, exacerbating confusion on the part of individuals and firms that may be looking for services. Moreover, even under the best of circumstances, RMG managers may be reluctant to pursue change without having a high degree of confidence that the disruption will be worth it. In other words, they are looking for a demonstration of actual benefits before deciding to pursue such a course of action.

This hesitation is completely understandable, especially in an industry where professionally educated managers are rare and most who administer companies today run inherited enterprises through “gut instinct” and “true and tried practices.” Without a business culture that promotes regular association meetings to learn from peer companies, most RMG factories simply continue operating the way they have always operated.

3.5 Way Forward?

In light of the need to address labor market, skills, and workforce development issues as part of a strategy to improve the productivity of Egypt’s RMG sector and re-ignite further export growth, the value of a lead organization that can “hand carry” information on productivity-related management techniques directly to the small- and medium-sized RMG factories that are least confident regarding how to innovate changes in factory operations is clear.

These firms need:

- A clearly defined and proven set of engineering and management practices that factories can adopt to achieve improved productivity results.
- A cadre of production advisors trained in industrial engineering practices with application to RMG manufacturing (and other industrial manufacturing) to work with the factories to implement these services.
- A reliable clearinghouse of information about productivity programs in Egypt, factories’ experiences with them, and similar undertakings around the globe.

The following sections describe a model that currently exists in Cambodia (Section 4) and proposes strategic options for adaptation of such a model to the Egyptian context (Section 5).

4. Cambodia's Garment Industry Productivity Center as Model

Like Egypt, garment makers in Cambodia face productivity challenges. The independent training center model developed in Cambodia with support from USAID/Cambodia, the Garment Industry Productivity Center,¹⁷ offers interesting insights for Egypt to consider and is described here.

Established in the late 1990s as the country emerged from thirty years of conflict, by 2005 Cambodia's garment sector employed 250,000 and represented 14% of the country's GDP. The sector rose to prominence under the system of quotas that controlled world trade in textiles and apparel and by earning special market access to the United States in exchange for implementing progressive labor policies.¹⁸ The elimination of quotas in 2005 in accordance with the World Trade Organization's Agreement on Textiles and Clothing also eliminated that competitive advantage, placing the livelihoods of the workers and their families indirectly supported by the industry, and the country's economic stability, at risk. USAID commissioned a research study that identified technical assistance focused on productivity improvement as an area of opportunity (Salinger et al 2005).

In October 2005, USAID/Cambodia initiated a three-year, \$3.4 million contract for the Garment Industry Productivity Center Project (GIPC). The objective of the project was to improve the competitiveness of Cambodia's garment industry in global markets and to expand its economic impact. USAID created a Statement of Work with three tasks:

1. Establish a sustainable training and consulting center to improve productivity and manufacturing skills in Cambodia's garment industry.
2. Deliver training and consulting services to industry supervisors and middle management, and develop Cambodians as trainers and consultants for the center.
3. Provide technical support to improve the competitiveness of the industry by addressing needs for workforce development, industrial relations, public-private sector cooperation, and encourage diversified investment based on economic good governance.

Implemented by Nathan Associates Inc., with the technical support of Werner International, Inc. and Associates for International Resources and Development, Inc., GIPC's approach was based on consultation and technical excellence. The Garment Manufacturers Association in Cambodia (GMAC) became a key partner, and other stakeholders from international organizations, government, labor, the private sector, and donors were consulted to validate and refine strategy. A Center Advisory Committee, comprised of volunteers representing the factories, government, and other interested parties such as the International Labor Organization and the Cambodian Federation of Employers and Business Associations, contributed to many early decisions.

¹⁷ See <http://gipc.org.kh>.

¹⁸ See Polaski (2006) for background.

The Project Team defined GIPC's business as practical training and consulting services that would be evaluated based on delivering quantifiable improvements in productivity and management; the Center adopted a business model that included fee-for-service as essential to achieving sustainability. GIPC also provided research studies, capacity-building for other stakeholders, and fostered communication channels between institutions and the private sector.

GIPC launched its activities by recruiting an initial group of four Cambodians from diverse backgrounds (education, engineering, business) to be trained as advisors and consultants to the industry. None had relevant experience in apparel making, a challenge that the project's technical experts met with an intensified training regimen that combined theory with in-factory work. Two weeks after the Trainee Technical Advisors (TTAs) began working with the Center, the lead engineer began a pilot project with four factories. Within six months, three of the four factories had measurable productivity increases (one had dropped out of the program), and the TTAs were able to lead theory courses for clients while they continued to build their practical experience.

Methods of Work and Time Study form the theoretical basis for GIPC's technical work, applied to improve organization and efficiency throughout the factories. The areas of practice addressed included:

- use of time study in production management,
- line balancing,
- quality control systems,
- improved sewing skills (a train-the-trainer course), and
- individualized implementation, included with each module.

Some theoretical training was intrinsic to every practice area, but once the initial introduction to work study and time management was absorbed the focus was on in-factory work.

Over the 40-month life of the project, the Center worked with almost 50 companies, adding more than \$13 million to the Cambodian economy by raising factory productivity. Only a third of the client factories achieved productivity gains as gauged by the conservative metrics used by GIPC's technical experts, but the adoption of better management practices – such as in-factory training and industrial engineering – are improving the industry in ways that may not be measured in the short term. Since the onset of the global financial crisis in August 2008, GMAC reports that 70 factories have closed; none of GIPC's clients have been included in that number.

Though foreign investment and expatriate management dominate Cambodia's garment industry, 80% of the participants in GIPC programs have been Cambodians and young women; 50% have reported income gains and 95% better job performance attributable to the training. While many factories expressed concern about training employees who would leave, after one year fewer than 10% of the GIPC program participants had changed employers.

The Project Team also contributed to workforce development and good governance, creating new relationships between employers and educators and between employers and jobseekers. Universities are beginning to incorporate materials relevant to the industry in their business and economics curricula. They are attracting students who have considered industrial work undesirable, but whose management and engineering skills are critical to a sustainable industry and a growing economy. In building its own connections to the business community, GIPC also

created opportunities for stakeholders to meet and exchange their views, and to generate actionable ideas and strategies for the future of manufacturing in Cambodia.

Today GIPC has eight Cambodian technicians, all trained by the technical experts funded by USAID. The Center continues to develop new services, for instance recently adding production management skills for small- to-medium enterprises. Attracting clients is somewhat challenging – owing to multiple factors, including cultural dimensions of management and its reluctance to pay for consultant services, the fact that ownership in most factories is foreign and may not be willing to trust local technicians, and that GMAC is pursuing a different agenda involving the training of industry and entrants – but those working with GIPC express high levels of satisfaction, returning for additional services.

Sustainability remains the Center’s greatest challenge. Registered at the end of the USAID project contract as a Cambodian non-profit entity with a local director and Board, GIPC is now accountable for its own expenses. It receives no support from the Cambodian government or from industry, except in fees for services. USAID/Cambodia has decided to continue support to GIPC (at a reduced level) for another two to three years while the organization adapts to its new role.

Section 5 suggests how this model might be adapted for consideration in the Egyptian context.

5. Creating a QIZ Productivity Improvement Program in Egypt

Working with the garment industry in other countries, the Assessment Team has seen significant gains in organization and productivity achieved through the application of work study, a discipline that combines technical analysis of products and work methods with advice and capacity building. The result is an improvement in productivity gained through adherence to commonly understood technical and management principles. The approach also enables participating factories to address specific problems while improving overall processes. Outcomes achieved by factories in other countries include:

- Gains of 15-50% in productivity of labor on the average sewing line, cutting, and finishing processes;
- Improved product quality, both from quality systems and improved skills;
- Higher fabric utilization, lowering cost per garment; and
- Reduced overtime due to improved planning skills as well as productivity.

For exporters in Egypt's QIZ program, improved systems and processes will contribute to better information management, inventory control, and documentation of the flow of production. Such outcomes may be particularly attractive to enhance compliance with documentation requirements of implementation of the QIZ Arrangement or other trade preference programs.

In reviewing the current garment industry situation in Egypt, the Assessment Team found that a few individual factories are already implementing self-improvement processes, drawing on training and consulting resources available in Egypt or regionally, many with support provided by the IMC. However, we also spoke with many producers who do not know how to figure out what their problem is, or assess what to do about it. Self-diagnosis of productivity gaps and needs and the identification of requisite service providers to address these gaps can be time-consuming and confusing. Many producers, especially smaller to medium sized firms, lack the resources to begin to pursue such a program. This is true, despite the apparent amplitude of resources available in Egypt to address and/or finance remediation activities.

To help this latter subset of factories, the QIZ Unit seeks to develop a Productivity Improvement Program (PIP), focused on a subset of "export-capable" SME garment producers, i.e. those who are already exporting ready-made garments to the U.S. and who are interested in introducing factory-level reforms to improve productivity, reduce costs, and expand overseas markets and/or those who are seriously seeking markets abroad and ready to re-organize themselves to prepare for exports. The PIP would introduce a practical, structured methodology that ensures a consistent approach to production planning and control. It would also prepare factory production leadership to implement these methods. Moreover, the program should be designed as a sustainable activity that complements, rather than competes with, already existing programs.

Focused improvement of manufacturing skills, particularly production management and controls, is a proven and effective means of reducing costs while improving output volume and quality. The PIP combines training – initially delivered "in a classroom," but mostly delivered

on the factory floor – with customized follow-up with factory management to ensure that new techniques are understood, implemented, results-focused, and maintained over time.

5.1 PIP Program Implementation

To achieve sustainability, key elements are required; each is further described below.

1. A group of factories who agree to pilot the program, will act as a laboratory for training the technical advisors, enable any needed adaptations to the curriculum, and allow their results to be disseminated across the industry.
2. A defined technical curriculum that is based on the common needs identified in the industry, delivered through classroom and in-factory training, using texts and materials, available in the languages most commonly used (e.g., Arabic and English).
3. Qualified personnel, including one or more senior **Technical Experts (TE)** to oversee implementation of the PIP; and a team of local **Technical Production Advisors (TPAs)**, recruited and trained by the TE(s), to provide ongoing expertise to Egypt's RMG export community in the longer term.
4. Institutional oversight and resources.

We envision a six-month pilot phase, followed by a two-year, wider rollout phase, introduced below and detailed in Table 4.

5.1.1 Phase I Pilot

The pilot phase is intended to develop the advisor pool as a first priority, and to obtain results for a small group of factories, while providing a laboratory for testing the methods and refining PIP content for Egypt's environment. The results can also be used to promote the program to other potential users who might otherwise be reluctant to invest the time in an unproven concept.

Participating factories are expected to provide feedback on materials and methods, and on TPAs working with them. They should also be willing to speak about the experience before their peers to help build demand for PIP services. Factories should agree from the outset that their industrial engineering departments will supply production data on a monthly basis for at least one year after completion of training. This will allow PIP to monitor results achieved and to allow TPAs to respond quickly if a factory begins to backslide and lose newly achieved efficiency gains. At a minimum, factory feedback should include comments on methods of instruction and organization; suitability/adequacy of learning aids, examples, illustrations; appropriateness of the subject matter to the factory's production constraints; individual staff evaluations of the appropriateness of the training received to their work; and recommendations.

Advantages of the pilot are several. It can probably be implemented with one TE leading the work. A smaller number of target firms improves prospects for adapting PIP to individual needs. TE time is focused on a small group of advisors and factories, thus limited travel is required. Members of the TPA team first concentrate on skills development in a laboratory environment. Results are available more quickly, and concentration maximizes factories' gains. And methods and materials can be adapted before applying to a larger market.

Nevertheless, by focusing on a smaller group at the beginning, a smaller number of firms obviously benefit in the short term. The failure of any one factory to complete the program has a

large impact on the pilot phase outcomes, and thus pilot phase participants should be selected carefully for their commitment. With a smaller pilot group, chances are that not all types of garment production will be represented, thereby narrowing the TPAs' learning opportunities.

At the conclusion of the pilot, the TPAs will have the theory and practical experience to provide service to new participants with more occasional ongoing supervision from the TE.

5.1.2 Phase II Wider Rollout

The wider rollout, anticipated to take place over a two-year period after the pilot phase has been completed, lessons digested, and adaptations made, will draw more heavily on the TPA resources and so can involve more factories. However, successful broadening of industry coverage will depend on the ability to recruit and train additional TPAs, while building TPAs' capacity. Successful interventions implemented by the TPA team will, in turn, increase their acceptance by the industry, and the larger number of beneficiary companies will provide faster payback to the economy. We caution against training too many TPAs, however, for overall industry demand is initially quite small and will take time to develop. In Cambodia, for instance, eight technicians service the present needs of an industry of 300 factories that exports more than three times the value to the U.S. as does Egypt.

It should be noted that the fact of working with a larger factory group will either reduce the individual factory attention received from the TE, or may suggest PIP investment in more than one TE – perhaps one international expert and one locally recruited expert who would take over the PIP reins at program mid-point – to guide the broader process. At a more dispersed level of activity, productivity improvements realized by the participating factories may be smaller initially, while the larger TPA team builds its capabilities. From a monitoring perspective, the larger number of participants will increase the number of variables that can impact the PIP's success, which may make diagnosing needed improvements in the program more difficult.

5.2 Recommended Technical Curriculum

A set of six training modules is outlined below (Table 5). The exact order of implementation of the courses will depend on the needs of the participating factories. Aptitude Testing and Time and Work Study are core building blocks for all other programs, and thus required from the outset. After assuring that those basic elements are understood, the specific needs of individual factories will be considered in setting the order of the following programs. Resource times are estimates based on experience; they will be adapted based on the background and skills of course participants and the commitment of factories to participation.

In addition to the technical elements outlined below, the program should include a *minimum of four sessions with top level management (owner, general manager, production manager) of each factory to review the planned intervention and ensure their support/commitment*. These sessions will be led by the TE and should not exceed 2 hours each.

Table 4: Productivity Improvement Program Organization

Component (Timing, Location, Size of Team)	Objectives	Activities
<p>Phase 1. Pilot 1st six months Cairo only 1 TE + 6-8 TPAs</p>	<ul style="list-style-type: none"> • Train the pool of local Technical Production Advisors; • Test the methods and materials on a small sample of factories; • Obtain results for the pilot factories within 3-6 months of beginning the program; and • Provide the Technical Expert leading the training with feedback to adapt the content and priorities before a broader factory group is involved. 	<ul style="list-style-type: none"> • Invite factories to apply to participate in pilot PIP. • Select 6 pilot factories, located in and around Cairo, preferably clustered closely to reduce transit times, selected based on interest, export potential, and management commitment to revise systems & processes as necessary. • Recruit TPA candidates in advance of technical cooperation with factories. • TE assesses knowledge level of TPAs (review of curricula vitae, some written tests, visits to pilot factories) and selects 6-8 trainees among applicants. • Begin TPA training program, closing gaps in TPA theoretical knowledge base, with guided practice opportunities in the factories. • Introduce factories to core elements of theory and production organization & management. • TE assesses determine factory-level constraints to improved productivity, with TPA assistance. • Adapt factory manufacturing processes with assistance of TPAs and regular TE oversight. • TE adapts TPA training to factories' evolving needs, cross-training added, as necessary. • TE may adapt or innovate new materials according to needs of factories. • Before conclusion of 6-month pilot, recruit wider sample of factories for phase II, broadening geographical selection and product diversity. • Recruit larger number of TPAs in advance of phase II. • Collect monitoring and evaluation data in order to assess PIP benefits and adapt approach and materials, as necessary, prior to phase II launch.
<p>Phase 2. Wider Rollout Next 2 years Cairo + (Alexandria, Port Saïd, other?) 1 TE per location? 6-8 TPAs per location, hence minimum of 18</p>	<ul style="list-style-type: none"> • Provide implementation experience to a group of advisors already trained by a Technical Expert in the work study methods; • Implant Advisory Team units in specific geographic locations and focus them on the types of producers in those locations; and • Obtain improvements in production efficiency based on the capability of the TPA team members, guided by one or more TE's. 	<ul style="list-style-type: none"> • Identify whether types of products or aspects of factory organization differ by geographical location (for example, more knits production in Cairo, more imported woven fabrics in Port Said, fewer educated workers and less technical training in Upper Egypt) in order to help define TPA training needs in each location. • Increase TPA training period from 2 weeks to at least 1 month and possibly longer, depending on the capacity of the individuals, to ensure TPAs are ready to work with factories with a minimum of TE supervision. • TE ensures that principles are understood well by TPAs and being implemented effectively. • After initial training, implement phased launch of factory work in one location first, then in subsequent locations. • TE focuses on ensuring the TPA teams are correctly diagnosing problems, presenting material according to the program, and that implementation is following an acceptable course. TE may be able to perform some factory-based troubleshooting, but a large and geographically diverse group means that opportunities for detailed engagement with factories will be limited. • To minimize delays, factories can undergo assessment by TE with participation of TPAs and be

Component (Timing, Location, Size of Team)	Objectives	Activities
		<p>organized into groups of 3-4 factories with similar products and problem areas</p> <ul style="list-style-type: none"> • Alternatively, several factories may be able to cooperate in training due to proximity of location or other common factors. Results realized in one cluster or by one member may help to stimulate changes in another factory or serve as a demonstration model for others. • Preliminary results may be obtained in this way, but it is also to be expected that the entire program will take longer to complete. • At the end of the PIP, acknowledge TPA teams as source of results, to improve acceptance by the other potential participants in the PIP • Collection of feedback, and especially production measurement data, remains an important factor in evaluating the TPAs, the materials used, and the overall success of the program.

Table 5: Productivity Improvement Program’s Recommended Technical Curriculum

Component	Objective	Who Participates	Location	Target
Aptitude Testing	Select high potential candidates to participate in capacity building and train-the-trainer programs	Factory Human Resources personnel (2 per factory)	Delivered in-factory while testing pilot participants.	Learn to apply testing and to evaluate the potential of supervisory, trainer and technical staff to learn and apply program theory and practices in the manufacturing environment.
Time/Work Study	Ensure factory industrial engineering staff understanding and use of standard times and measurement techniques is consistent with needed practices. Also prepare some supervisors to understand and apply standard times in production management.	Industrial engineering technicians, other production staff (3-5 per factory)	Classroom theory (60 hours) + in-factory implementation (20 hours per factory)	The course will develop the analytical skills regarding work methods and processes in the garment industry. The participant will learn to use basic motion study concepts to optimize the use of labor, materials and equipment to improve productivity and reduce manufacturing cost in each operation from cutting room to shipping.
Effective Supervision	Prepare factory supervisors to apply knowledge of garment production to improve line management	Supervisors, supervisor candidates (3-5, up to 12 per factory)	Conducted in the factory.	Using engineering information, planning and reporting tools to improve output; effective monitoring of operators, coaching, discipline and motivation are covered. Combination of theory (60 hours) and practice (40 hours).
Cutting Room Organization and Operations	Prepare cutting room supervisors and managers to improve productivity, quality, and fabric utilization.	Supervisors, production planners/inventory control (3-4 per factory)	Conducted in the factory.	Participants learn the effective management and operation of a cutting room, including materials planning and handling, laying, and cutting different fabrics of different construction and patterns. Training requires 8 hours theory and systems, 60 hours implementation.
Quality Control Systems	Train quality control teams to manage quality at each production stage reducing defects and related costs.	3-5 quality control team supervisor/technicians per factory	Conducted in the factory.	The course will teach the participants effective processes for controlling quality at each step of the making up process, including warehouse, cutting room, sewing, and finishing sections. Participants will also be introduced to tools and forms that help reduce defects, improving production quality while minimizing waste and costly rework. Total 3 week program involving 12 hours theory and 70 hours practice with guidance and coaching.
Sewing Operator Trainer Development	Prepare a team of qualified sewing operator trainers for each factory to maintain and improve ongoing skills, reduce defects and simplify repairs.	2-3 sewing operator trainers per factory, up to 15 participants	Conducted in the factory.	Participants learn both effective teaching methods and best practices for sewing skills including speed and quality development, organizing work station, ergonomics, and machine care enabling the factory to maintain a skilled workforce. Training group should include trainer candidates and a group of sewing operators from the factory. Total 3 weeks (2 weeks instruction, 1 week observing new trainers).

5.3 Personnel Requirements & Qualifications

5.3.1 Technical Expert(s)

The ideal Technical Expert (TE) should bring prior experience in production and a successful track record as an international consultant in similar efforts in other countries. His/her requisite skills and experience should include:

- Textiles knowledge
- Apparel manufacturing experience required (minimum of 10 years)
- Prior consulting experience in low- and lower middle-income countries (minimum of 5 years), with references provided from previous clients
- Knowledge of North Africa and/or the Mediterranean a plus
- Demonstrated ability to manage complex advisory projects
- Demonstrated ability to lead teams
- Demonstrated ability to train junior professional staff
- Fluency in English essential; fluency in Arabic would be an additional plus.

Although one TE is appropriate for launching the PIP pilot, it is recommended that at least one additional TE, preferably an Egyptian with industry experience, be recruited early in the program in order to share TE responsibilities in phase II and to prepare for transition to Egyptian leadership after the departure of the international expert. If only one TE is recruited, it must be recognized that significant travel by the TE among cities will be required.

5.3.2 Technical Production Advisors

The PIP will require a team of local Technical Production Advisors (TPAs) who are trained to observe factory conditions and provide the necessary advice on factory organization and skills to improve production operations.

To meet the ambitious targets of the program, candidates for TPA positions should have some prior experience in the industry, preferably in industrial engineering or production management, who can readily learn and implement the methods and who will function as team leaders for less experienced advisors. That experience, combined with core competencies in mathematics and problem-solving, will enable them to absorb the necessary theoretical basis for work study. Their prior experience in the production environment will help them apply theory to the workplace in an organized way. Good communications skills are the other essential component, to ensure factory personnel learn from them and can work with them to apply the techniques in the individual company environment.

In discussions with the QIZ Unit it was proposed that TPA applicants should be drawn solely from the pool of recent university graduates. We note that while some of the TPA candidates may be recent university graduates without manufacturing experience, these relatively inexperienced, entry-level professionals will not have the necessary knowledge and skills to advise factories immediately. Moreover, over-reliance on fresh graduates will reduce factory management confidence in the TPA team. We strongly recommend recruitment of a blended class of TPA trainees.

The PIP may wish to engage the services of the Education Foundation for Employment (EFE) to assist with recruitment of TPA candidates, as they already have some experience in this area.

Successful TPA applicants will participate in the pilot program both as trainees and as guides to factory participants. They will refine their knowledge of apparel manufacturing management and develop their ability to conduct training and guide factory supervisors and middle management. TPA requisite skills and experience should include:

- University degree, engineering or industry-related discipline preferred
- Apparel manufacturing experience preferred (3-5 years)
- Textiles knowledge (basics of materials and their performance and handling) preferred
- Excellent communications skills in Arabic and English
- Mathematics and analytical skills
- Ability to work independently with minimum guidance
- Ability to work cooperatively with others

The number of recruits will depend on the pilot model selected; to ensure cost-effective service factories should be divided into two groups, based on geography. If a target group of 16 factories is identified, 8 might be in Cairo (to serve Cairo and Upper Egypt) and 8 in Port Said (to serve the Delta).

5.4 Institutional Oversight and Resource Requirements

Our sector assessment found that the QIZ Unit is the one garment-related organization in Egypt that communicates regularly and transparently with a wide sample of producers (all QIZ-approved producers) and among the short list of MTI agencies whose services are highly valued by factories. Therefore, we recommend that institutional oversight of a Productivity Improvement Program for export-capable, small and medium-sized, QIZ-approved, ready-made garment producers be assigned to the QIZ Unit.

We further recommend that the PIP be overseen by an Advisory Board, consisting of representatives *at a minimum* from IMC, ITC, TrainTex, the MTI's Technical and Innovation Centers, the RMG Export Council, and the private and non-profit service providers to the textile industry operating in Egypt, that meets regularly to validate the approach and strategize future policy and programs.

We also strongly recommend that factory participation require the same private contribution as through the IMC's program. Complementary funding may be routed through the IMC's existing industrial modernization program, which would further encourage institutional collaboration.

A preliminary estimate of resource requirements for the PIP suggests that a program of this magnitude will require resources for

- International Senior Program Manager (an expatriate who would oversee program rollout and report to the QIZ Unit and donor agency);
- International Technical Expert(s);
- Local Technical Production Advisors;
- Local support staff (administrator, financial director, driver);
- Travel to/from Egypt and associated per diem; and
- Other incidental costs (equipment, furniture, vehicle, facility rental and utilities).

Annex A. Assessment Team Meetings Held

Government of the Arab Republic of Egypt, Ministry of Trade and Industry

- Dr. Ali Awni, Director, Qualifying Industrial Zone Unit (012-231-6880, ali.awni@mti.gov.eg)
- Dr.Eng. Mohamed Hany Barakat, 1st Undersecretary (2792 1205, hbarakat@sepme2.hbs.edu)
- Mr. Hassan Omar, Compliance Advisor, QIZ Unit (010-507-2501, hassanomar@mti.gov.eg)

Ready-Made Garment Manufacturers

Artex*	Glass**	New Born*
BTM for RMG*	Himalaya**	SalamTex***
Cairo Cotton Center**	Khalil Bros.*	Smart*
Cairo Malaga*	Liberty*	Swiss Garments***
Cleopatra***	Lotus*	Tiba*
Daly Dress*	Luxor*	Velocity*
Egyptian Clothing*	Maytex***	Wagdy Moamen Weaving Mill***
Farrantex*	Memphis*	Yasmina RMG**
Future Fashion***	Misr-American Carpets***	
Giza Spinning and Weaving**		

Notes: * Seen by Mr. Marelló only

** Seen by both Mr. Marelló and by Ms. Salinger & Ms. O'Dell

*** Seen by Ms. O'Dell &/or Ms. Salinger only

Textile Sector Business Development Service Providers (Public & Private)

Education for Employment Foundation, Egypt Program
Fashion Design Center
Gherzi Egypt
Industrial Modernization Center
Industrial Training Council
Institut Technique de la Mode
Mubarak-Kohl-Initiative, Vocational Education, Training, and Employment Program
Reform of the TVET System
Sahara Group
Textile Consolidation Fund
Textile & Clothing Business Center
Textile Technology Center
TrainTex

For descriptions and contact information of business development service providers, see Annex B.

U.S. Government & Supported Activities

U.S. Agency for International Development

- Ms. Manal El Samadony, Senior Economist (2522 6689, melsamadony@usaid.gov)
- Mr. Robert Wuertz, Director, Office for Policy and Private Sector (2522 6601, rwuertz@usaid.gov)

Annex B. Summaries of Business Service Providers

The following are summaries regarding each of the textile sector-related, training and consulting business service providers with whom we met while in Egypt:

Name of Organization	Education for Employment (EFE) Foundation, Egypt Program
Institutional Affiliation	Independent, international non-governmental organization, headquartered in Washington, DC
Core Competency	Train & provide employment for jobless youth
Program Description	EFE runs programs in Jordan, West Bank/Gaza, Egypt, Morocco, and Yemen. It provides professional and technical job training programs to develop skills in a range of sectors; in Egypt in the textile sector, their focus is on textile merchandiser training. The three-month training program, offered to university graduates between the ages of 20 and 28 with intermediate English language capability, consists of two modules, offered by Gherzi experts and two on workforce readiness, offered by EFE. The first covers basic textiles information, while the second teaches the role of the merchandiser. EFE's modules cover workplace success strategies. Before launching training, EFE secures job commitments from employers, who have already interviewed candidates, screened by EFE.
Donor Support	Key partners include: Consolidated Contractors Company, the Drosos Foundation, the International Youth Foundation, Manpower Inc., the U.S. State Department's Middle East Partnership Initiative, the Saïd Foundation, UNDP, USAID, YNNA Holding, and the Young Presidents' Organization.
Date of Meeting(s)	April 7 (by phone)
Met With	Ms. Shahinaz Ahmed, Chief Executive Officer (010 910 1171, sahemed@efefoundation.org)
Website	www.efefoundation.org

Name of Organization	Fashion Design Center
Institutional Affiliation	One of 14 Technology Centers, operating under the Ministry of Trade & Industry
Core Competency	Technical training in the area of fashion and jewelry design
Program Description	FDC is a collaborative effort between MTI and the Italian Istituto de Moda Burgo from Milan. Training materials are proprietary, provided by the Istituto. FDC primarily provides a two-year diploma program and offers short courses. It also makes its facilities available on a fee-basis to incubate fashion entrepreneurs, and provides consultations and services (such as collection design) to Egyptian factories.
Donor Support	Financially self-supporting through fees charged to students and factories
Date of Meeting(s)	March 31
Met With	Stephania Guliana, Manager (396 0375, info@fashiondesigncenter.org)
Website	www.fashiondesigncenter.org
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Name of Organization	Gherzi Egypt
Institutional Affiliation	Private company, affiliated with Gherzi Textil Organisation AG (Zurich)
Core Competency	Consultancy services for businesses and policymakers in textiles/garments
Program Description	Gherzi business units deliver services all along the value-chain, from fibers and raw materials, through spinning, weaving, knitting, nonwovens, processing, garment manufacturing, warehousing and storage, to retailing and brand development. They can provide experts from within Egypt and drawn internationally in management and operations, logistics, and industrial engineering. Gherzi also works outside of textiles and garments, in other industries.
Donor Support	None
Date of Meeting(s)	April 1
Met With	<ul style="list-style-type: none"> • Mr. Hassan Mekawy, Managing Partner (3304-2073, h.mekawy@gherzi.com) • Mr. David Vickers, Technical Director (012 224-3287, d.vickers@gherzi.com)
Website	www.gherzi.com
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Name of Organization	Industrial Modernisation Center
Institutional Affiliation	Semi-autonomous government body, overseen by Ministry of Trade & Industry
Core Competency	Organizer of industrial upgrading service provision across sectors of Egypt's industrial economy, including textiles
Program Description	IMC does not undertake industrial modernization itself, but rather matches enterprises with business services in the areas of <i>inter alia</i> productivity, SMEs, export readiness preparation, corporate social responsibility, industrial integration, and quality. It subsidizes the cost of service delivery; companies are expected to contribute 20-40% of total project cost. For every new worker hired through IMC-sponsored programs, companies receive a bonus of 15,000 EGP. IMC measures its impact by tracking changes in the level of sales, employment, investment, exports, and productivity.
Donor Support	Launched in 2000 through 430 million euro grant from European Union + 130 million euro support from Government of Egypt. Since 2005 budget covered primarily by MTI; currently approximately 1.3 billion EGP funded by the GOE.
Date of Meeting(s)	March 29, March 30, March 31
Met With	<ul style="list-style-type: none"> • Amr Abdel Latif, Deputy Executive Director (2577 8609, alatif@imc-egypt.org) • Adel Noureldin, Director, Regional Development Programs (012 212 9537, anoureldin@imc-egypt.org) • Eng. Hesham Wagdy A.Dayem, Director, Technical Assistance & National Programs (012 238 0366, wagdyhe@imc-egypt.org) • Eng. Sahar Youssef Gharib, Textile Sector Head (010 527 4768, syoussef@imc-egypt.org)
Website	www.imc-egypt.org/en/programs/index.asp

Name of Organization	Industrial Training Council
Institutional Affiliation	Created subsequent to launch of TVET Reform Program in 2006, one of several training councils in Egypt. ITC is under the Ministry of Trade & Industry.
Core Competency	Organizer of industrial training service provision across sectors of Egypt's industrial economy, including textiles
Program Description	ITC does not undertake industrial training itself, but rather matches enterprises with training services. A new strategy is currently underdevelopment. Eighty percent of the cost of training provision to industries is covered by the ITC. Over 60% of their work is to prepare new workers in basic sewing operator training courses to satisfy the industry's high demand for more labor. There are 42 ITC training centers around Egypt. ITC is also currently running a project to improve 100 secondary schools' vocational training programs and facilities. ITC has also developed a multi-sector set of National Skills Standards, accredited by the Scottish Qualifications Agency, useful for determining training curricula as well as for qualifying workers for migration and employment abroad.
Donor Support	None?
Date of Meeting(s)	March 29
Met With	<ul style="list-style-type: none"> • Ahmed Taha Boraie, Executive Director (012 238 0384, ahmed.taha@itc-egypt.org) • Ehab El Gabbas, Textile & RMG Manager (010 007 1723, ehab.elgabbas@itc-egypt.org)
Website	www.itc-egypt.org (under construction)

Name of Organization	Institut Technique de la Mode
Institutional Affiliation	Private training provider, launched by Bella Donna RMG company, affiliated with the Ecole de la Chambre Syndicale de la Couture Parisienne
Core Competency	Technical training in the area of fashion design
Program Description	ITM offers three-year diploma programs in fashion design, one which is signed by the Ministry of Higher Education, the other which is accredited by the Chambre Syndicale and results in a French diploma from them. Ten-week certificate programs and 40-50-hour short courses are also available.
Donor Support	Tuition paid by students covers 60% of program cost, the rest is financed by Bella Donna
Date of Meeting(s)	March 30
Met With	Ali Houdroge, Director (745 4355, 010 537 4888)
Website	n/a

Name of Organization	Mubarak-Kohl Initiative, Vocational Education, Training, and Employment Program
Institutional Affiliation	International cooperation project, affiliated with Ministry of Education and Ministry of Manpower and Migration
Core Competency	Technical and vocational education and training for youth
Program Description	MKI-vetEP includes 6 components: 1) pilot project for promotion of employability and employment, 2) institutional sustainability of formal 3-year cooperative education, 3) quality management, 4) capacity development of “learning facilitators” who coach youth, 5) structuring of labor market information system, and 6) policy consulting on youth education, labor market, and employment areas.
Donor Support	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ, or German Enterprise for Technical Cooperation)
Date of Meeting(s)	April 1
Met With	Ms. Niveen Sakr, Director, Project Management Unit (010 222 0018, niveen_s@hotmail.com)
Website	www.mki-vetEP.com

Name of Organization	Reform of the Technical Vocational Education and Training (TVET) Program
Institutional Affiliation	Part of the Ministry of Trade & Industry's Industrial Modernisation Program
Core Competency	Technical and vocational education and training for factories
Program Description	The textiles sector was the TVET Reform Program's first target sector when launched in 2005. TVET builds enterprise training partnerships (ETPs), governed by public-private partnerships involving government, enterprises, investor associations, donors, and TVET institutions, to deliver demand-driven training to enterprises across industries. In the textiles sector, the ETP is known as “TrainTex” (see below). Textiles-related technical assistance is provided to develop training curricula, train trainers, and provide advisory services to enterprises. Textiles-related training is available in pattern-making, cutting, sewing operations, production supervision, time- and motion-study, quality control, maintenance, ironing, and packing. Focus on delivering trained entry-level workers for textile industry (12,000 new workers needed, according to the Chamber of Textile Industries in 2006), drawing from students who have left (sometimes prematurely) technical secondary schools.
Donor Support	European Union (33 million euros grant) + GOE (33 million euros) + World Bank-financed Skills Development Program (\$12 million loan)
Date of Meeting(s)	April 1
Met With	<ul style="list-style-type: none"> • General Mohamed Ahmed Helal, Project Director (012 174-1105, mhelal@tvet.org) • Dr. Manfred Diehl, Team Leader (792 6147 8951, Manfred.diehl@gtz.de)
Website	www.tvet.org

Name of Organization	Sahara Group
Institutional Affiliation	Private company, affiliated with Werner International
Core Competency	Consultancy services for businesses and policymakers in textiles/garments
Program Description	The Sahara Group, launched in 1995, provides advisory services to the textiles sector in Egypt, Morocco, Syria, Tunisia. In Egypt, the company has worked on Egyptian cotton trademarking, a spinning sector study (for the EU), and services to individual enterprises. The Sahara Group also seeks to fill the role of a professional association for the industry, having launched a private membership organization known as the Egyptian Textile Development Association that sponsors "Egypt Official Textile Industry Portal" online and organizes an annual international apparel and home textile sourcing fair in Egypt in October.
Donor Support	None
Date of Meeting(s)	April 3
Met With	Hany El Habibi, CEO (736 5311, hany@saharagroup.com)
Websites	http://www.eta-egypt.org/htm/welcome.html www.egytex.com
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Name of Organization	Textile Consolidation Fund
Institutional Affiliation	Established in 1953 as an independent, non-profit body supported by the Ministry of Trade and Industry
Core Competency	Technical training and trouble-shooting services for Egypt's textile value-chain
Program Description	Calling itself "the State Organization for the development of the Egyptian Textile Industry," TCF encompasses the Textile Development Center, established with UNIDO support in 1980, and the Textile Quality Control Center, run in partnership with Bureau Veritas, the French inspection, testing, and certification company. TCF offers 14 classrooms outfitted with blackboards, overhead projectors, video equipment, and seating for 25-40 in each classroom, and equipment laboratories that are in need of updating. TCF currently employs offers a wide array of short courses of 2 weeks duration, available on a fee basis. TCF's main areas of interest are upstream, with courses in spinning technology and quality control in spinning, weaving, dyeing and finishing, and knitting and garment manufacturing, as well as in costing in spinning and weaving. TCF also trains Anglophone African participants, with external sponsorship.
Donor Support	Previously, UNIDO.
Date of Meeting(s)	April 8
Met With	Eng. Salah El-din Saber Abdel-Rahman, Head of Technical Sector (012 338 5166, SedSaber@yahoo.com)
Website	http://www.tcfegypt.org.eg/

Name of Organization	Textile & Clothing Business Center
Institutional Affiliation	One of 14 Technology Centers, operating under the Ministry of Trade & Industry
Core Competency	Promotion of international business linkages between Egyptian textile and RMG producers and international buyers
Program Description	With 9 staff and 4 new managers, TCBC devotes its resources to the development of new buyers (40%), new markets (35%), enhancing export readiness (15%), and new product development (10%). It sees itself as a market agent for new ideas such as organics, bamboo fabrics, etc. TCBC is exploring how to expand Egypt's presence in new trade fairs abroad, and is contemplating the creation of a new B2B (business-to-business) event in Cairo. Key performance indicators for TCBC vis-à-vis the Ministry of Trade & Industry include the number of factory visits, samples delivered to new buyers, trial orders facilitated, and trainees.
Donor Support	German SME Promotion Program
Date of Meeting(s)	April 6
Met With	<ul style="list-style-type: none"> • Baha'a Baheeg, Executive Director (011 102 9962, bbaheeg@mfti.gov.eg) • Mr. Helmut Klomdsorf, General Manager
Website	n/a

Name of Organization	Textile Technology Center
Institutional Affiliation	One of 14 Technology Centers, operating under the Ministry of Trade & Industry
Core Competency	Technical and vocational training in textiles and clothing
Program Description	Established in cooperation with Cairo University's Faculty of Engineering on its Sheikh Zayed campus, TTC is developing a degree program to be offered in collaboration between Cairo University and a foreign university (yet to be announced). The center is equipped with a textile testing laboratory, as well as textile and garment manufacturing equipment. To date, little demand for training services has been expressed by factories, despite the engagement of two expatriate consultants to survey factories on TTC's behalf.
Donor Support	To be announced
Date of Meeting(s)	April 6
Met With	Dr. Mohamed Abou-iiana, Executive Director (010 955 7485, Zayed.textiletechnologycenter@gmail.com)
Website	n/a

Name of Organization	TrainTex, or the Egyptian Association for Training and Research Services in the Garment and Textile Sectors
Institutional Affiliation	Organized now as an independent, non-governmental organization, TrainTex is the Enterprise Training Partnership established under the auspices of the TVET Reform Program for the textile sector.
Core Competency	Develop human resources management for international competitiveness of Egypt's textiles sector firms
Program Description	Established in 2006, TrainTex operates under the Chamber of Textile Industries. It offers training packages for the textiles and garment sectors with regard to beginner training, training of trainers, controllers and supervisors, machinery maintenance, quality assurance, production and quality supervisors, middle management, marketing and negotiation skills. TrainTex is a registered service provider under the Skills Development Program and the Industrial Training Council.
Donor Support	European Union funding, as per wider TVET Reform Program
Date of Meeting(s)	April 2
Met With	Eng. Moshir Aly, Executive Director (016 880 4252, maly@traintex.org)
Website	www.traintex.org

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