

“Improving Labor Productivity in Egypt’s Ready-Made Garments Sector”

Introduction

Through the implementation of the Qualifying Industrial Zone (QIZ) program¹, Egypt has experienced significant growth in its exports of garments to the US. Apparel and clothing are the largest category of goods exported under the QIZ, comprising over 90 percent of all QIZ exports and 24% of Egypt's total exports (excluding oil). The expansion of the apparel industry through the QIZ program has generally sharpened Egypt's comparative advantage in the sector. However, despite all the success of the industry under the QIZ program thus far, export growth of garments to the US is leveling off. In 2006, growth increased by 41%, while achieving only 12% growth in 2007²; a considerable 30% below the growth of the previous year. This decrease in export growth is disconcerting considering the golden opportunity that Egypt has through QIZs' provision of duty-free market access. In the wake of the financial crisis, urgency is needed for Egypt to increase its competitiveness and productivity to compensate for the expected losses resulting from the global recession.

On April 5th 2009 the Trade Related Assistance Center (TRAC) at the American Chamber of Commerce in Egypt hosted a workshop titled “Improving Labor Productivity in Egypt’s Ready-Made Garments Sector.” The workshop, attended by industrialists, buyers, government officials and industry experts, aimed to address the concerns revolving around the leveling off that Egypt is experiencing in its exports of garments to the US in spite of the implementation of the QIZ program. In order to determine the root causes for the slow-down in the ready-made garments sector and ensure that Egypt capitalizes on every opportunity to maintain and expand its export capacity through these unstable economic times, USAID/TAPR II in cooperation with the QIZ Unit at the Ministry of Trade and Industry, commissioned a study titled ‘The Overall Assessment of Selected Apparel Manufacturing Factories.’ The workshop was held to present the findings of the study, which provides the basis for this report.

This report analyzes labor productivity in the ready-made garment sector in Egypt. Section 1 seeks to highlight and understand the constraints to labor productivity by focusing on productivity challenges, limitations to growth and working conditions in the garment sector. Section 2 of the report focuses on the main findings of the study commissioned by USAID/TAPRII and the Ministry of Trade and Industry which reveals Egypt's current situation in terms of labor productivity. Section 3 addresses a number of approaches to improve labor productivity in the ready-made garment industry with a strong emphasis on training, followed by recommendations for overcoming the

¹ The QIZ program is an agreement through which Egyptian goods can enter the US duty-free. In 2005, the QIZ started operating in 7 designated industrial locations in Egypt. Starting with an initial 397 qualified companies in these locations, QIZ has rapidly expanded to encompass over 15 designated industrial zones, with nearly 700 qualified companies, amounting to more than 1 billion USD in annual revenues.

² According to statistics, total textile production in Egypt in 2007 amounted to 3.7 Billion USD, constituting 3% of Gross Domestic Product (GDP).

challenges and constraints to improving labor productivity. The report concludes in Section 4 that in order to improve labor productivity in the ready-made garment sector, it is necessary to upgrade the skills of workers at all levels of the labor hierarchy. The report will show that everyone shares a portion of the responsibility, and thus it is the role of all stakeholders to be involved in ameliorating the skills of workers; which should ultimately result in an increased export of garments to the US through the QIZ program. Finally, an Annex highlights the experiences of Cambodia in order to provide a relevant model of success in raising competitiveness through labor productivity.

I. Constraints to Labor Productivity in the Garment Industry

1.1 Productivity Challenges

The purpose of this section is to address the main obstacles that pose a barrier to productivity. The failure to overcome the productivity challenges of high turnover, absenteeism and training is costing Egypt in terms of productivity, quality, and foregone exports. Dr. Magdi Tolba, CEO of Cairo Cotton Center, stated that turnover in the industry ranges from 8% to 15% per month. This rate of turnover leads to low productivity, low levels of quality, as well as a lack of technical education. Absenteeism in the industry is from 10% to 12% on normal days and from 15% to 18% in pre-seasonal days; which is the equivalent of 600 workers out of 4000 generally not showing up. The degree of damage inflicted on the performance of the factory at large cannot be underestimated. Training is very limited in Egypt;³ it is restricted to operators and is given only upon entry to the company. Addressing such problems could boost productivity significantly, using the existing labor resources. Egypt could easily increase exports by 20-40% if its factories were better organized. Those in the production community must be aware of training sources that are available and the unemployed must be made aware of opportunities in the garment industry.

Comparisons in productivity are often made between countries in the garment industry; however, there are certain elements and productivity challenges that are apparent worldwide in the ready-made garment industry. For example, production is usually concentrated in lower wage countries and thus poor basic education is endemic and an issue in terms of addressing training needs. Despite the fact that the majority of ready-made garment industry skills tend to be manually focused, the ready-made garment industry still requires some critical thinking skills. However, most employees have only basic education, with an acceptable level of literacy. Thus, absence of necessary skills pushes management to hire operators who do not necessarily have supervisory skills or the ability to motivate people. There is a perception that it is cheaper to over-hire than it is to upgrade the skills or the services available to the worker that you currently have. However, that is only true if you have really low wage workers, which is not the case in Egypt where workers get between 40 to 80 cents an hour compared to Bangladesh where

³ Comparing the training in Egypt to that in other countries that are leading exports of textiles indicates that the majority of the positions in Egypt receive almost no training with the exception of the engineers who might receive training once a year, while countries such as China, Tunisia, and Turkey train machine operators and management relatively frequently.

workers get 22 cents an hour. There is a point where over-hiring does not work anymore and therefore there is a growing interest in upgrading skills⁴.

In most countries, productivity challenges are typically reflective of a labor deficit; however, in Egypt there is 8-10% unemployment. A common response to a labor deficit situation is to increase wages. Given that Egypt is not suffering from a typical labor deficit, upward pressure on wages will cost Egypt its competitive advantage in production in the garment industry unless it makes productivity improvements that address its particular labor challenges. It is important to note that the intersection of labor demand and labor supply begets a value in wages, but also comprises a broader range of values that must be considered. To satisfy labor demand in Egypt, a reliable and quality-based labor supply must be cultivated.

Thus, in order to address the productivity challenges in the labor market and workforce development issues⁵, skills, training and competitiveness⁶ must be addressed with a view to identifying how top management can better organize and run their factories. The focus should be at all levels, but particularly mid-level skills; mid-level management, industrial engineers, line supervisors, work-planners, as well as top management. Some options to create competitiveness include attracting a reliable workforce by improving the compensation package, moving into services, shifting from the production of low-value commodity clothing to high-value design production, or focusing attention on increasing productivity in order to reduce the total unit cost.

1.2 Limitations to Growth

In general, QIZ exports have experienced many significant disruptive events, such as the end of the quota system, the rise in the value of the euro over the dollar that compelled exporters to view the former market more favorably, and finally, the global economic recession. Over time, with the exception of the heightened value of the euro, nothing has actually caused QIZ exports to drop. In the case of a minimal drop, export growth to the US rebounded almost immediately. Even though QIZ exports from Egypt to the US have leveled off, Egypt is still in the top 22 garment exporters supplying the US market (See table below) Of the top 22 countries, 9 of them have preferential trade agreements with the US, whether a free trade agreement, QIZ arrangement, bilateral textile agreement, or a regional trade agreement. 8 of the countries' market shares in the US continue to grow.

⁴ In addition, with regards to production per minute, Egypt's performance is way below these and other countries. Where in Egypt it takes 6-7 minutes to make a basic shirt, in Sri Lanka and Bangladesh it takes only 4 minutes—this is from 50 to 75 percent higher productivity. This suggests that producers are willing to pay wages from 25 to 40 percent more than other countries, because they are losing more with the existing performance.

⁵ Productivity here refers to physical output per unit output while labor productivity refers to physical output per day and/or per hour (unit time of work in the factory).

⁶ The term competitiveness takes many different forms and has become a popular concept in business and management circles. It can be a measure of relations in many different areas. Costs and cost reduction, research and development i.e. new products, customer service and physical productivity are all elements of the competitiveness equation.

A significant number of countries enjoyed preferential access into the US market, in which China headed the list in 2008 with 32% of the market. At one time Mexico was the leading supplier of garments to the US, but as China continues to grow it has been pushed out of first place and is now preceded by Vietnam and Indonesia. Dr. Tolba presented figures that indicated that Egypt is not maximizing the benefit of its involvement in the QIZ program; in which a number of buyers are sourcing small volumes from Egypt. Macy's, for example, sources 20 billion USD a year globally, but takes from Egypt only 25 million USD worth of products. This is the same for Gap, Wal-Mart, K-Mart, and Calvin Klein; they all consume billions of dollars worth of products but Egypt's share of these transactions is negligible. Even though growth in exports of ready-made garments is slowing down, Egypt has an incredibly rich support from the government as it shares a significant part of the cost of training and advisory services for industry.

TABLE

EVOLVING US MARKET SHARES

| Rank | Country | 2004 | 2005 | 2006 | 2007 | 2008 | Rank | Country | 2004 | 2005 | 2006 | 2007 | 2008 |
|------|-------------|-------|-------|-------|-------|-------|------|---------------|------|------|------|------|------|
| 1 | China | 13.8% | 22.0% | 25.9% | 30.8% | 32.0% | 12 | Pakistan | 1.8% | 1.8% | 2.0% | 2.0% | 2.1% |
| 2 | Vietnam | 4.0% | 4.0% | 4.5% | 5.9% | 7.3% | 13 | Sri Lanka | 2.4% | 2.4% | 2.3% | 2.1% | 2.0% |
| 3 | Indonesia | 3.7% | 4.2% | 5.1% | 5.4% | 5.6% | 14 | Guatemala | 3.0% | 2.6% | 2.3% | 2.0% | 1.9% |
| 4 | Mexico | 10.3% | 8.8% | 7.4% | 6.1% | 5.6% | 15 | Philippines | 2.8% | 2.7% | 2.8% | 2.3% | 1.9% |
| 5 | Bangladesh | 3.1% | 3.5% | 4.2% | 4.2% | 4.8% | 16 | Italy | 2.2% | 2.0% | 1.8% | 1.9% | 1.9% |
| 6 | India | 3.4% | 4.3% | 4.4% | 4.3% | 4.3% | 17 | Jordan | 1.5% | 1.6% | 1.7% | 1.5% | 1.4% |
| 7 | Honduras | 4.1% | 3.8% | 3.4% | 3.4% | 3.6% | 18 | Nicaragua | 0.9% | 1.0% | 1.2% | 1.3% | 1.3% |
| 8 | Cambodia | 2.2% | 2.5% | 3.0% | 3.3% | 3.3% | 19 | Dominican Rep | 3.2% | 2.7% | 2.2% | 1.4% | 1.2% |
| 9 | Thailand | 2.8% | 2.6% | 2.6% | 2.4% | 2.3% | 20 | Macau | 2.2% | 1.7% | 1.6% | 1.4% | 1.2% |
| 10 | Hong Kong | 5.9% | 5.1% | 3.9% | 2.8% | 2.2% | 21 | Peru | 1.0% | 1.2% | 1.2% | 1.1% | 1.1% |
| 11 | El Salvador | 2.7% | 2.4% | 2.0% | 2.0% | 2.1% | 22 | Egypt | 0.7% | 0.6% | 0.9% | 0.9% | 1.0% |

In light of this reality it becomes evident that the cause of the current leveling off of exports is the pre-existent limits to growth, as referred to by Dr. Ali Awni, Director of the QIZ Unit at the Ministry of Trade and Industry. In the case of industry in the QIZs, Dr. Awni further highlighted some main factors that produce these limits: lack of skilled labor, availability of suitable locations for operations (i.e. a piece of land that meets specific qualifications; such as infrastructure connectivity, proximity to required services, etc.) and the ease of doing business (government procedures). With regards to the latter limits, the Ministry of Trade and Industry has launched an industrial zones program that, through addressing the ease of doing business, also offers solutions for the land problem. To help with the availability of suitable land, the program seeks to shield investors from the local details which complicate acquisition. Furthermore, the program provides individual support and follow-up through the provision of an account manager who maintains contact with key investors to ensure their satisfaction and ongoing success.

In addition to these limits, Ms. Lynn Salinger, USAID/TAPRII Consultant and Garment Industry Workforce Specialist highlighted additional gaps in Egypt's labor market and work force development that are among the main factors that limit growth. She classified

Dr. Awni's limit of skilled labor under the Human Resources gap. This gap reflects the inadequate training of managers and workers especially in ready-made garments, high turnover and absenteeism, difficulty in attracting workers, highly restrictive labor regulations, and the lack of qualified human resources development departments. Low levels of skilled labor emerged as perhaps the most significant barrier as it is the critical component upon which competitiveness is contingent. It is important to note that from the perspective of buyers and investors, skilled labor is very much tied to the value-added nature of production. In Egypt, there is evidence from the feedback of buyers, and local and foreign investors that value in the labor force is lacking. As a result, these buyers and investors often chose basic models, because they could not find a sufficient labor pool with the skill-set to produce high-end products.

Dr. Awni referred to the QIZ Export Readiness Project 2006 in his presentation to provide an example of the absence of sufficiently skilled labor to produce high-end products in Egypt, and how often the highly technical aspects of production are conducted by external experts. This project shows almost 50% of Egypt's QIZ Exports are denim pants. The value-added factor that makes denim a high quality product is the washing, which takes place in the final stage of production and can be accomplished by hiring experts from anywhere. In so doing, a quality denim product can be exported. This is unlike shirts, for example, which require skilled labor across the entire production process. The high levels of denim exports from Egypt are then related to the skills levels. The problem of skills is also evidenced by the buyers, only one of whom is high-end (Jones). Instead the clients, as previously stated, are K-mart, Wal-Mart and Target; which is not where exporters should position themselves. Additional findings from the QIZ Export Readiness Project showed that of the 500 companies surveyed; only approximately 70 appeared to be export ready. Significantly, those with no export potential and those who are export capable but do not export achieved low scores on "competitive position," which is directly linked to the skill of the labor. Thus, this project indicates a strong correlation between export readiness and training.

The labor market analysis gap highlights that there is insufficient information to know who is paying what around the industry. The institutional gap portrays that there seems to be a multitude of organizations representing members of the industry, they have redundant functions and lack clear mandates. There is no one garment manufacturers association that speaks on behalf of the industry and acts as a channel of communication between the government or the external market and the membership. Finally, there also seems to be a gap in higher education, in which universities should work in partnership with the industry to design courses, degree programs, and curricula that correspond to the needs of industry. Thus, from the management perspective, the optimal approach to address these gaps and limitations, and increase capacity is through removing the factors that limit growth.

1.3 Working Conditions in the Garment Industry

As stated by Mr. Claude Loiselle, ILO Senior Specialist on Occupational Safety and Health and Working Conditions, compliance with labor standards and labor laws, as well

as good working conditions are criteria by which factories are judged when international buyers review them for eligibility in their programs. Thus, serious exporting factories have to meet those conditions. Efforts must be taken to assist enterprises, workers, and governments to work together to improve productivity and working conditions. The ILO promotes decent work for all in the export or local market. However, concern remains that the problem of working conditions are certainly impeding the capacity of the private sector and the workers in contributing to the development of the economy and ensuring full employment. Although some highly efficient practices have been witnessed; it is important to go beyond numbers and look at attitudes towards collaborative arrangement in work places. The future of the garments industry in Egypt largely depends on massive investments and the capacity of the people (managers mostly in policies); as well as on the capacity of the actors working together in ensuring that social rights go hand in hand with economic comparatives and choices.

Poor working conditions can lead to a number of productivity problems, such as worker injuries, production errors, poor quality products, absenteeism, lack of machine maintenance, haphazard inventory systems, and lack of respect and loyalty to the enterprise – to name a few examples. Many of these easily avoidable problems will eventually have to be resolved later down the line, taking more time at needle point and costing more money. The ILO posits that improved working, safety and health conditions actually lead to increased productivity. The ILO offers a methodology for the garment industry, which is currently implemented in 40 countries, to improve working conditions and productivity in the industry. Referred to as the 'wise methodology', it features interactive training sessions that aim to raise efficiency and productivity by tackling small, practical issues. It focuses on incentives and achievements and links good working conditions with management goals in order to avoid the problems of absenteeism and high turnover.

II. Main Findings of the Projects

2.1 The Study on the Overall Assessment of Selected Apparel Manufacturing Factories

In order to determine the factors behind export growth stagnation in the garments sector, a study on labor productivity in the ready-made garments sector was commissioned by USAID/TAPR II and led by Bearing Point. The study, 'Overall Assessment of Selected Apparel Manufacturing Factories', began in August 2008, following the visits of Ms. Lynn Salinger, USAID/TAPRII Consultant and Garment Industry Workforce Specialist, to several Egyptian factories. Mr. Gino Marello, an industrial engineer, joined the team in January at which time he met with 19 different factories. Jane O'Dell, the Chief of Party for the Garment Activity Center in Cambodia and USAID/TAPRII Consultant, was also a key member of the team. The study is ongoing, taking place in various phases, and benefits from the specific skills of each team member. The USAID/TAPRII study is also the first to take a systematic overview of the ready-made garments sector in Egypt; focusing on that one niche.

The findings of Mr. Mareello's study were based on the 19 factories that he visited in Egypt. He evaluated them on a group of criteria and ranked them from 1-10 with 10 signifying performance at the best International Standard.⁷ The criteria were as follows:

- (i) **Product Development Capability:** On a global basis, garment buyers are looking for companies that can be better partners and one element of this is whether or not the industry has product development capability. Out of the 19 factories surveyed by Mr. Mareello, all but 2 were able to develop products internally.
- (ii) **Cutting Room Organization:** In general, the cutting rooms of the factories surveyed exhibited a lack of organization. There were only a couple of companies operating at the 8-10 level, while the majority fell around the lower-mid level of the scale. Without an effectively functioning cutting room it is very difficult to maintain productivity standards. Cutting room organization is one of the prime reasons for quality problems. On productivity specifically in cutting rooms, 69% of the participants averaged 55% efficiency or lower.
- (iii) **Sewing Organization:** This criterion ranked even lower than the cutting room. No factory scored better than 8 on sewing organization with major opportunities identified for improving line balance and improving training. In the sewing section 90% of factories averaged 46% efficiency, while the world standard in efficiency in the sewing line is 75-80%. There is a huge potential for improvement; the worst performers could double their output while those who are strong can still gain around 20-30%.
- (iv) **Finishing and Packing:** These ranked exactly the same as the cutting room. According to Mr. Mareello's findings, a few companies did well in this category, while the rest ranked between levels 5 and 6. This weakness needs to be addressed at the level of supervisory training. Often, problems in the finishing section were attributable to over-staffing. If the department is properly organized and the supervisors are well trained there is no need for an excess of staff. With an average of 48.5% efficiency, there is a potential productivity gain of 20%.
- (v) **Organization and Control Systems:** These criterions also scored quite low. It is essential that information about productivity is routinely generated in order to properly manage the production on an on-going basis. Again, properly trained supervisory personnel and middle management is required. Many factories employ qualified industrial engineers but without middle-managers and supervisors trained to effectively manage the operations, the benefit of these skills is lost. The majority of the

⁷ The details of Mr. Mareello's study were available in the conference materials and can also be accessed on the TRAC website; <http://www.egypttrade.org/trac/default.asp>

factories surveyed scored low level 6 on the organization and control systems. Quality control is so critical to garment production that it must be a priority. The greatest deficiency in quality control was not maintaining the procedure throughout the entire production process, i.e. checking quality at the end but not checking fabric at the outset of production.

In addition to ranking the factories in the foregoing categories, Mr. Marelo also identified some of the causes of low efficiency that he observed:

- High labor turnover averaged 20-25%. These figures were derived from the interviews conducted by Mr. Marelo.⁸
- High absenteeism averaging 10-20%.
- Untrained labor force, untrained middle management. Four of the factories ranked level 6-8 in terms of the training of the middle management. The majority of factories scored below level 5; completely lacking a professional organization system. Without a system in place, the skills of well trained workers are under utilized.

III. Improving Labor Productivity in the Ready-Made Garment Industry

This section addresses some approaches to improving labor productivity in the ready-made garment sector. It has been noted that companies that are still able to attract orders in this time of recession in the international economy are the companies that are following a strategy; in which the companies are, for example, investing in capacity building / training, production engineering, IMC support, addressing labor issues, and mobilizing themselves to be as productive as possible. The buyers are aware of this and thus address their business needs to those companies. This section will conclude with a number of recommendations revolving around the central issues of policy and legislation, the role of stakeholders, capacity building, research and development, human resources and the environment.

3.1 Improving Labor Productivity through Capacity Building

In order to achieve continued growth, there has to be an improvement on all the elements of production, however, training is the key to enabling Egyptian manufacturers to attain results. Many other countries are already active in training, and competitors are already looking at improving training. Thus, if the Egyptian manufacturers aim to continue growing in terms of market share, then training is a vital issue that must be given sufficient attention; especially in areas of basic education (literacy, numeracy, critical thinking) and soft skills (personnel management and motivation, health, wellness, and nutrition issues). So far, it appears that there is a real shortage of competent human resources management able to provide the kind of support that the Egyptian manufacturers need in the garment industry. However, the short term focus should be on technical training (operator skills and performance, engineering, production management - quality and control systems) since those are places where short term quick interventions

⁸ Note that this turnover rate is higher than that previously stated in the report by Dr. Magdi Tolba.

are actually going to enhance productivity. However, it is also exceptionally important to focus on training in the industry as a whole. Success will not be achieved unless labor is trained to work properly on quality and production efficiency, regardless of whether it is in the local or export industries.

Egypt has a rich diversity of training and capacity building opportunities. The following sub-sections will highlight two significant services that exist in Egypt.

3.1.1 Technical Education and Vocational Training (TEVT)

One of the foundational services available to factories in Egypt to improve the competitiveness of Egyptian enterprises in the domestic and international markets is the EU-Egypt cooperation project titled Technical Education and Vocational Training (TEVT), which was initiated in 2002. This project was based on a labor market study conducted by international experts from the European Union and the World Bank. TEVT consists of three components; establishment of a network of the decentralized, demand-driven enterprises through a public private partnership mechanism; improvement of the quality of TEVT delivery through capacity building; and development of a national regulatory institution for a decentralized and demand-driven TEVT system.

TEVT partnership is an autonomous, legally recognized entity that ensures that enterprises have a leading role in shaping TEVT in their sector. It is a tool for enterprises to bridge the gap between demand and supply for qualified labor and ensures that the main stakeholders (local authorities, suppliers, other TVET projects, syndicates, etc) are invited and encouraged to participate in the Enterprise Training Partnership (ETP) activities; it is also strongly linked to the sectors Chambers, Investors Associations, Unions, and Training Councils.

However, a main problem that the industry faces is that not enough people want to work in the ready-made garment sector. Despite the fact that TEVT places advertisements in the newspaper on a regular basis, young workers or graduates are not applying for the trainings that are offered. A study was conducted to examine this phenomenon and the findings revealed that the lack of interest is partly due to low wages, working conditions, insurance, career development, and social and cultural problems. Mr. Mohamed Helal, Project Director of the TVET Reform Project, stated that an alternative approach was put in place to attract more participants. According to this approach, workers are trained for a certain job for a time period then they are sent to a company to work for an equivalent period, after which they train for another job and then they are sent back to put what they learned into practice. This approach allows the worker to graduate after three years with multiple skills making it easier for him to find employment in any part of the industry.

3.1.2 Enterprise Training Partnership (ETP) – TrainTex

Another service available to the ready-made garments sector is the Enterprise Training Partnership (ETP) called TrainTex. This is one of 12 ETPs that have been established throughout the last 3 years. At the start of TrainTex the aim was to encourage companies

to establish training facilities, because it was believed that this was the only way to meet the high demand for labor. The project supported 113 companies to establish training centers. Moreover, it established technical secondary schools, 14 public vocational training centers and 8 private vocational training centers. TrainTex further aims to bring together training providers such as, the Ministry of Education, Technical Secondary School sector, Ministry of Industry and Ministry of Manpower and observers from ITC, World Bank project, Ministry of Higher Education, Investment Association Unions, and MKI to form a unique public private partnership.

TrainTex identifies real gaps through mapping, audits, and carrying out training needs assessment; as well as develops demand-led training education and training packages through coordinating efforts with major stakeholders in the sector. TrainTex also introduces education and training systems, which have already been implemented in 27 schools in Egypt and has developed 13 training packages based on the demand of the industry. The first 6 trainings were sewing operation, cutting, spreading, ironing, and packaging. Although most of the activities were concentrated in Cairo where there are 4092 workers on different levels, workers in 75 companies were trained nationwide. Furthermore, TrainTex monitors the progress in order to assess the effects that the training has on the industry.

3.2 Improving Labor Productivity through Production Engineering

The concept of production engineering involves the design, control and continuous improvement of integrated systems in order to provide the consumers with high-quality goods and services in a timely and cost-effective manner.

Many companies claim they are actively involved in production engineering; however their production is not effective. In production engineering, it is important to focus on the pre-production phase, which allows the team to gain experience in making the product manufacturing a product economically whilst preserving its functionality. This phase allows for problems to be identified and solved before production takes place on a larger scale and additional costs are incurred; resulting in the necessary changes in order to achieve an optimal trade-off between cost, functionality, product quality and reliability. Generally, the pre-production phase is a large, difficult and time-consuming stage that contains many integrated elements. Once the product is perfected in the pre-production phase, the production phase becomes more straight-forward in the sense that it is a repetitive manufacturing of the product that was created and analyzed in the pre-production phase. Even after the production of the product, it is important to continue to identify potential areas for improvement regarding the performance of the production system as a whole, and to develop the necessary solutions.

Furthermore, it has been noted that some companies resist involvement in production engineering since they are functioning adequately. Thus, they are not looking for solutions to improve and obtain better opportunities, such as training. However, given the current economic recession, in which the market and prices are decreasing, the timing may be appropriate to engage in further training.

3.3 Improving Labor Productivity through Government Support (IMC)

Despite the fact that the Industrial Modernization Center (IMC) offers highly subsidized consultants to work on quality, marketing, and IT issues, some companies (small & medium) do not take advantage of the services provided. This might be attributed to companies' lack of awareness about the programs on offer; that companies are unaware that they are in need of help; others are satisfied with their performance, or they have other priorities and do not want to invest in training. Therefore, there is a need to shift the mind set from thinking about scarcity of labor to thinking about how to use the existing human resources more effectively. It is important to convince management that there is a need for training at all levels (not just the operators).

Industrial clusters which by definition exist in one geographical area and produce mostly similar industrial products, have been an area of focus for the International Modernization Center (IMC). The identification and assessment of the clusters has shown that bigger exporting companies have more experience, are more dynamic, regularly learn new techniques and share their experiences from their daily production. Meanwhile, more weaknesses are apparent in the broader base of the ready-made manufacturers or producers and therefore it is important to focus additional attention on the broader base of companies. The upgrading of SMEs is an issue of priority since they compose part of the broader base in the ready-made garments industry.

Several successful factories were already accessing services through the IMC. These factories knew exactly what they wanted ahead of time, and had already identified the consultant they wanted to hire. In other words, they were prepared with a whole package and mainly asked for assistance in the financing of this package. However, on the other hand, there are other factories that are not able to identify their needs, nor know who to consult. As such, the focus revolves around smaller factories in order to guide them in how to proceed. It is important to be resourceful and take advantage of what already exists.

3.4 Improving Labor Productivity through a Niche Approach

Tackling labor productivity requires a determination of where to intersect and invest in the value chain. In Egypt, there are initiatives which address the value chain in its entirety; from spinning to finishing. Contrary to this broad-scoped approach, the USAID/TAPRII study adapted a niche approach focusing on a specific part of the value chain, namely ready-made garment manufacturing. Egypt's competitive advantage is currently in the ready-made garment industry. Though the country is a fiber cultivator, the bulk of industrial production in Egypt relies on fabrics purchased from elsewhere; in general operations are not completely integrated. The niche approach therefore enables a comprehensive assessment of a specific sector, which targets central problems and generates manageable recommendations. This is an appropriate short-term strategy to mitigate export growth decline, given that the bulk of exports are in ready-made

garments. Over the long-term however, it would be advisable to assess fiber cultivation and spinning with a view to increasing domestic capacity for fully integrated operations.

3.5 Improving Labor Productivity through addressing Cultural Challenges

The extent to which labor challenges are imbued with cultural specificities is difficult to determine. However, examining culture will reveal some factors that may influence productivity. For example, in many societies there tends to be a sociological phenomenon in which gender issues have an impact on labor force participation rates. Often, when women wed, their spouses do not allow them to work outside the home. Thus, culture becomes a constraint to women within the labor force. Other reasons why women might be compelled to leave the labor force include: the difficulty of balancing home-based responsibilities and work responsibilities following marriage. Also, there may be a limited access or availability of reliable and sufficient child care providers.

Furthermore, trust between employees is a concern. Workers lack confidence and trust in their supervisors as they fear they may be dismissed at any time. It is important to demonstrate loyalty and stability to one's employer by proving diligence in the assigned tasks, and being committed to the job for the long-term. However, the overall work environment provided by the employer plays a central role in securing this loyalty.

Egypt is unique for being an export-oriented garment industry that is not unionized, which has its advantages and disadvantages. It is an advantage because activist unions that cause problems do not exist. Simultaneously the absence of unions is a disadvantage because management fails to hear the complaints, comments and feedback from their workforce in an institutionalized way. Ideally, internal complaint procedures would exist. The effectiveness of an internal complaints mechanism should minimize the occurrence of high turnover and absenteeism, as it would allow for management to hear the concerns of their workforce; so that a solution can be undertaken as opposed to an unsatisfied laborer simply leaving the job.

3.6 Recommendations

In summary, there were a number of key issues that evolved throughout the workshop and discussions on how to maintain production competitiveness, bypass some limitations and improve labor productivity in Egypt's ready-made garment sector. Some recommendations include:

Policy and Legislation

- ❖ Review and improve employment law through achieving a greater balance between employees' and employers' rights;
- ❖ Establish a new and developed system to improve worker performance and income;

- ❖ Develop a strategic plan concerning the promotion of specific sectors and industries;⁹
- ❖ Raise awareness about the importance of monitoring and evaluation;

Roles of stakeholders

- ❖ Create and announce a clear mandate for the relevant government bodies. These bodies must be evaluated and restructured;
- ❖ Encourage the Ministry of Manpower and Migration to provide relevant information to link up the market e.g. labor studies, wage surveys, employment services;
- ❖ Encourage the Ministry of Education to play a role as it is responsible for public education, which includes technical secondary schools, specialized vocational training, as well as the university system. Implement vocational education and link education to industry.¹⁰ It is essential that universities work in partnership with the industry to design courses, degree programs, and curricula that correspond to the needs of industry.
- ❖ Encourage the involvement of the private sector in being proactive and strengthening its role in training; rather than the government bearing the burden alone.
- ❖ Consult with advisory services in order to determine the issues with the factory/organization. Advisors may create a focused initiative – pilot project – to gain additional information about the experiences of factories, and then consult the factories on their areas of weakness.

Capacity Building

- ❖ Focus on the already existing manpower within the organizations and further enhance and upgrade their skills and capabilities.
- ❖ Provide capacity building to all levels of the hierarchy, including laborers, supervisors and production management.
- ❖ Ensure that Supervisors' training is comprehensive; addressing issues such as quality control, work study (Methods, Time Study, STD time calculation), efficiency control, work balancing, etc.
- ❖ Review the Quality Control System and its impact on production. Proper training of the quality control team is necessary in order to increase efficiency, collect information at all points of production, and to produce a weekly report that tracks results. Quality specifications must be defined and quality control systems streamlined for all operations.

Research and Development

⁹ This strategy must be reflected accordingly in education as it is the schools that will supply the worker and feed the growth of the industry; unlike in the past where parents would have their children accompany them to work and learn the trade.

¹⁰ In Europe, the US and the Far East there is a strong connection between education and industry while in Egypt this is not the case. This is one of the major problems of the industry because its future security depends on willing labor with middle education. Currently, of the thousands of middle schools there are almost none with teachers, equipment, and programs linked with industry.

- ❖ Invest in Research and Development (R&D) programs to gain knowledge on new and changing fashion trends, materials and technologies. Such investment will save factories from producing against international trends and help them maintain production competitiveness

Human Resources

- ❖ Implement human resources divisions to address high turnover rates and problems concerning labor;
- ❖ Identify and analyze how human resources and labor management relations in Egypt are conducted and look to improve relations between workers and mid-management;
- ❖ Establish a garment manufacturers association that speaks on behalf of the industry and acts as a channel of communication between the government or the external market and the membership;
- ❖ Create a work place council (or other form of complaints mechanism) so that laborers have a method of expression to provide feedback and share their concerns about issues affecting them within the work environment.

Environment

- ❖ Promote good working conditions and practices within the working environment;
- ❖ Educate staff on potentially harmful practices i.e. having loose and long fabric or hair near the machine;
- ❖ Enforce good lighting and ventilation systems;
- ❖ Provide access to a quality food canteen that is clean and healthy;
- ❖ Organize the availability of spare parts for the machines.

IV. Conclusion

Although the global recession has left its mark on many sectors both locally and internationally, Egypt's ready-made garment industry is still well positioned to increase its market share in the US. Since Egypt has a comparative advantage through the QIZ program, as well as a small percentage of business from most of the major customers, it can still benefit despite buyers limiting the number of regions and countries with which they are doing business. Thus, the workshop has highlighted the importance of addressing and tackling the deep-rooted problems that go beyond the current financial crisis in order to improve labor productivity in the ready-made garment sector.

It has been seen that problems in labor productivity in Egypt's ready-made garment sector revolve around a number of key issues that trace back to the essence of economics: supply and demand. In order to function efficiently, the gap between both sides must be dealt with; there is demand for skilled labor on the one side while there is a failure to supply education and training on the other. To connect supply and demand, it is necessary to provide trained labor for the sector and to upgrade their skills. In general, skill-building is a fundamental component of any successful model and it is essential to shift the perception from viewing a scarcity of labor to thinking about how to utilize the existing

human resources more efficiently. Also, the findings of the USAID/TAPRII study stressed the importance of skilled labor in the industry, as well as the significance of training as a tool to improve efficiency, productivity, and ultimately growth.

The report further revealed that everyone shares a portion of the responsibility, and therefore it is the role of all stakeholders, within both the government and the private sector, to be involved in ameliorating the skills of workers at all levels of the hierarchy. The industry should define and amend the skills that are needed, motivate the workers, communicate with the educators and government, and provide on-going skill development opportunities from which the results are measured. Educators need to assure basic competence, literacy and vocational training while the government should subsidize basic education and training, as well as establish and enforce standards. By focusing on capacity building, the impact of the main productivity challenges and limitations to growth should minimize. Through the allocation of appropriate efforts towards improving labor productivity in Egypt's ready-made garment sector, companies exporting under the QIZ will begin to enjoy higher profits once again as a result of their unrestricted duty-free access.

ANNEX 1

The Cambodian Experience

Unlike Egypt, which has a long horizontal and vertical history in the textiles industry and ready-made garments with solid basis, Cambodia has grown like a mushroom and there is not much underneath to hold it. In the education sector there were absolutely no courses that were relevant to the garment industry, nor in the business or engineering programs. Everything had to be donor driven, as the government had no financial resources to help provide the needed set of skills.

Today, Cambodia exports \$2 billion dollars worth of ready-made garments annually and this represents 80% of export revenue. Its market share in the US reaches 3.3% ranking number 8, whereas Egypt does not exceed 1% of the US market. The industry in Cambodia consists of about 300 ready-made garment factories employing over 50,000 workers out of a workforce that totals 250,000. 95% of the factories are foreign-owned.

To further advance its industry, Cambodia has established a strong garment manufacturers association to which all the exporters belong. This association has been fundamental for presenting industry interests to government, specifically these views have been provided to the negotiators who work with the importing countries on developing terms of trade. The association also runs an operator training program, which graduates 30 persons per month with the support from Japan International Cooperation Agency (JICA). The International Labor Organization (ILO) launched another training program called “Better Factories”, which focuses on improved workplace relations and soft skills (factory based).

In 2005 the United States Agency for International Development (USAID) commissioned a scoping study for the Cambodian ready-made garment industry. The outcomes of the study showed that efficiency was below 40% in over 75% of the industry and that over-hiring was one of the reasons for low productivity. It concluded that despite the fact that there were good needle skills, poor planning and controls with limited skills training were endemic to the industry. Though there are strong similarities between Cambodia and Egypt in terms of rapid growth followed by a leveling off in exports, the former worked hard to ensure the competitiveness of its industry and change the global textile and apparel production environment. In order to raise competitiveness, the relationship between productivity of labor and wage levels and employment services was assessed. A salary survey across the industry was conducted by a private firm. The outcome results were then sold to those parties interested to know what compensation factories were offering across the industry. The scoping study in Cambodia was promptly followed by the launching of a USAID supported technical training program in 2005 with a \$3.4 million investment over three years to serve the industry.

Though Egypt has a wealth of expertise available, it is important to tailor a program that will provide adequate training to the industry throughout the value chain. However, given the parallels between the cases of Cambodia and Egypt, the latter may take certain

yardsticks from the ‘Cambodian Model’ that can be easily emulated to raise the competitiveness of labor productivity:

1. The program used foreign experts to design training and consulting. To ensure the sustainability of the program, however, it was vital to prepare local people. Training of local trainers was an integral part of the project. The program also helped make training accessible to less-educated workers therefore widened the supply pool of the labor force available for the industry.
2. As most of the factories did not have industrial engineering of any kind and all planning was based on the experience of supervisors and production managers, most of whom had grown up in the industry in other countries and had no theoretical training, the program addressed comprehensive training starting with a time and work study to create balance in the line. Time was also spent in measuring the output and comparing it to the rest of the factory.
3. Since the aim was to establish a sustainable business model to make sure that the industry continues to prosper once donor funding ceases, the program was used a fee-based system to reduce the reliance on donor support. A fee-based system helped the industry recognize the value of training and encouraged it to be more results-oriented and to measure productivity.

The Cambodia program resulted in over 20% sustainable efficiency gains as well as higher job satisfaction and earnings. It also resulted in a growing demand on training programs at all levels (after an initial reluctance on the industry side) with the majority of participants being mid-sized producers (600-1200 workers). Moreover, it helped sustain higher-than-average market performance despite the economic downturn, while the training ensured an increase in the pool of skilled workers. Although it is a widely held that if you train workers they go elsewhere, in case of Cambodia the surveys showed that 6 months to a year following the program only 10% of the trained people had gone to other factories. The rest stayed because they felt appreciated by their management, they got raises, they got recognized, and they got opportunities to put what they learned into practice. In other words, they stayed where they were because they felt more motivated. The outcome is an increase in training supply in Cambodia. The success of the training that was offered through the program showed that there is a demand for these services. Similar programs have been initiated by the private sector, which is positive for the industry. In fact Cambodia began institutionalizing learning and training; the schools and universities are introducing garment-related industry training.