

- **Contributes to higher exports, economic diversification and more and better jobs.**
- **Helps policy makers to ensure that firms find workers with the right skills and workers acquire the skills needed to find productive employment.**



Skills for Trade and Economic Diversification

STED is a methodology developed by the ILO that provides strategic guidance for the integration of skills development in sectoral policies. It is designed to support growth and decent employment creation in sectors that have the potential to increase exports and to contribute to economic diversification.

STED takes a forward looking perspective, anticipating a sector's development and growth opportunities based on its global competitive position and market development. Together with an analysis of current skills supply and demand, this provides an outlook of existing and future skills shortages.

Thus, STED supports the formation of skills for which there is demand in the labour market and helps to avoid skill mismatches that contribute to unemployment, in particular among the young.

The outcomes of STED are concrete recommendations at the policy, institutional, and enterprise level. The process involved in designing those recommendations contributes to improvements on the ground by raising awareness and stimulating dialogue on skills development among key stakeholders within a sector.

This note presents the ILO's **Skills for Trade and Economic Diversification (STED)** methodology. STED helps to align skill policies with sectoral strategies that contribute to export growth, economic diversification, and employment creation.

The note presents the rationale for this type of intervention, discusses some practical aspects of implementation, and explains the analytical process underlying STED. It also provides a brief overview of the experience with STED in four pilot countries: Ukraine, Bangladesh, Macedonia, and Kyrgyzstan.

STED was launched in 2010 as a joint product of the ILO's Trade and Employment Programme and Skills and Employability Department.

www.ilo.org/STED



Why ILO Technical Assistance on Skills for Trade?

SKILLS CONTRIBUTE TO HIGHER AND MORE DIVERSIFIED EXPORTS WITH MORE JOB CREATION. PROVIDING THE RIGHT SKILLS AT THE RIGHT TIME IS IMPORTANT AND REQUIRES POLICY COORDINATION.

Skills and trade

The experience of many successful developing and emerging countries has demonstrated that trade openness can promote GDP growth and employment creation if accompanied by appropriate complementary policies.¹

A key area in which well designed and pro-active policies are required to complement trade openness is skills development. Exporters tend to be larger, more productive, and employ more highly skilled workers than non-exporters.² Enterprise survey data also show that many firms around the world rank finding adequately skilled workers as a major constraint to their business (Fig. 1). Thus, in order for trade openness to translate into sustainable growth, investment in skills formation is crucial, especially in developing countries where skilled labour is scarce.

Skills are not only important for the quantity of export growth, but also for its quality. A country's level of skills is a key determinant of export diversification.³ Availability of skilled labour is also a prerequisite for countries to absorb new technologies through trade openness and FDI.⁴ Experience from countries that have benefited from globalization suggests that strategic coordination between trade, investment, development, and skills policies was an important factor for success.

Skills are also a key determinant of the social impact of trade, and in particular employment creation. The wage premium on skills is rising in many countries due to increasing demand for skilled labour.⁵ Open economies need workers with higher and more flexible skills, and education and lifelong learning are the decisive factors for a worker's success in today's labour markets.⁶

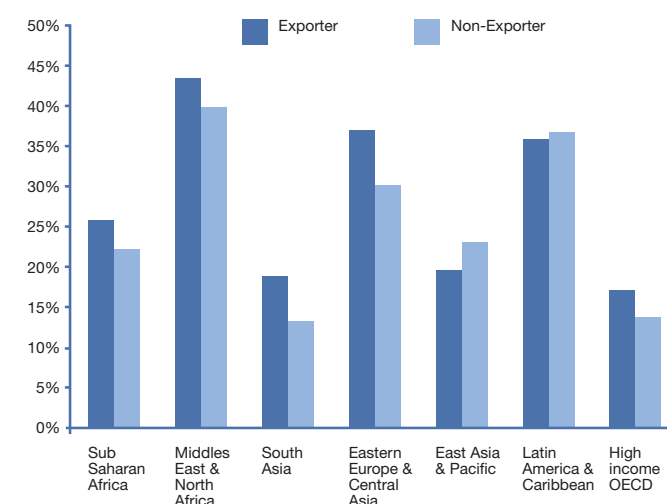
Why Technical Assistance?

Governments and social partners are well aware of the importance of skills policies in the context of globalization.⁷ However, implementing these policies well is a challenge and requires strategic coordination with trade, investment, and development policies. Trade leads to rapid structural changes and need for new capabilities at the firm level, which makes the anticipation of skill demand even more complex for sectors with high trade integration.

Skills mismatch – a situation where the skills taught by education institutions do not match the demand of the labour market – is a common phenomenon. It has high social and economic costs, in particular when it takes the form of youth unemployment (Box 1).

Demographic trends in many developing and middle income countries contribute to the urgency of addressing these problems. Unprecedented numbers of young people are expected to enter the labour market over the next twenty years. Providing them with the right skills will be crucial for countries to benefit from this one time opportunity.⁸

Fig. 1:
Firms Ranking Inadequate Education of Workforce as Major Obstacle



Source: World Bank Enterprise Survey Data (2006-11)

ILO's experience

STED builds upon the ILO's long standing experience in supporting its constituents on skills related issues. ILO technical assistance projects around the world contribute to the improvement of technical and vocational education and training (TVET), skills anticipation, labour market information systems, and active labour market policies.

On the trade side, the ILO provides advisory services and capacity building on the relationship between trade and employment, integration with global value

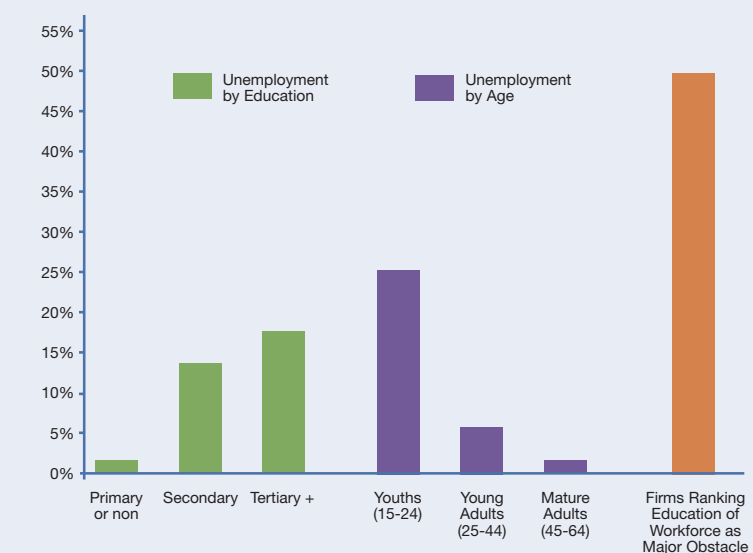
chains, and operations of multinational enterprises. Technical assistance in this area also covers competitiveness and worker-employer relations in exporting businesses.

Due to its tripartite structure, the ILO is uniquely positioned to work with governments, unions, and employers to promote social dialogue on skills development.

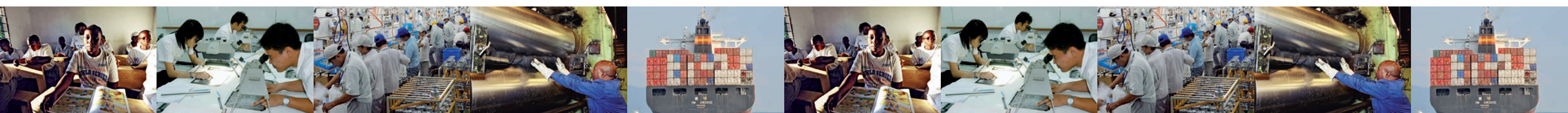
Box 1: Skills Mismatch and Youth Unemployment

Fig. 2 illustrates the problem of skills mismatch and its connection with youth unemployment in the case of Egypt. Unemployment is significantly higher among youths and among the highly educated, reflecting the fact that the nature of jobs created does not match with the skills provided by the university and vocational education system. At the same time, over 50% of firms in Egypt rank inadequately educated workforce as a major constraint to their business.

Fig. 2:
Youth Unemployment and Skills Mismatch in Egypt



Source: CAPMAS Labour Force Survey (data for 2008), World Bank Enterprise Survey (2008)



STED Process

STED WORKS AT THE SECTORAL LEVEL USING A COMBINATION OF DESK REVIEW, STAKEHOLDER WORKSHOPS AND FIELD RESEARCH. LOCAL PARTNERSHIPS ENSURE OWNERSHIP OF STED RECOMMENDATIONS AT POLICY, INSTITUTIONAL AND ENTERPRISE LEVEL.

A Sectoral Approach

STED is designed for sectors that have potential to make substantial contributions to export development and diversification, or need to improve competitiveness in the face of foreign competition. They can be sectors that are still in their infancy, or established sectors with potential to diversify, for example through better products or new markets.

Set-up and Methods

Applying STED typically involves a combination of desk review by trade and skills experts at ILO Headquarters, stakeholder workshops and consultations in the country, and field research that is carried out by local consultants. The latter includes collection of relevant data and structured interviews with key informants. Fig. 3 shows a model structure of activities for STED application. In practice, this will often have to be adjusted to country or sector specific needs, or time constraints. Provided that sufficient resources are available, any number of suitable sectors can be covered in parallel.

Local Partners and Ownership

In order to facilitate access to information and increase the chances for recommendations to be implemented, a key factor for the success of STED is to involve local partners and ensure that stakeholders have ownership of the results.

ILO's strong relationship with labour ministries, unions, and employers' organizations greatly facilitates access to well-positioned partners for STED. These partners are systematically involved in the process from the beginning, including in the selection of sectors. In some cases, tripartite institutions for social dialogue on skills already exist as natural counterparts. In other cases, STED brings the relevant stakeholders in a sector together for the first time, and thus lays a foundation for social dialogue on skills and better policy coherence based on a strategic vision for a sector's future.

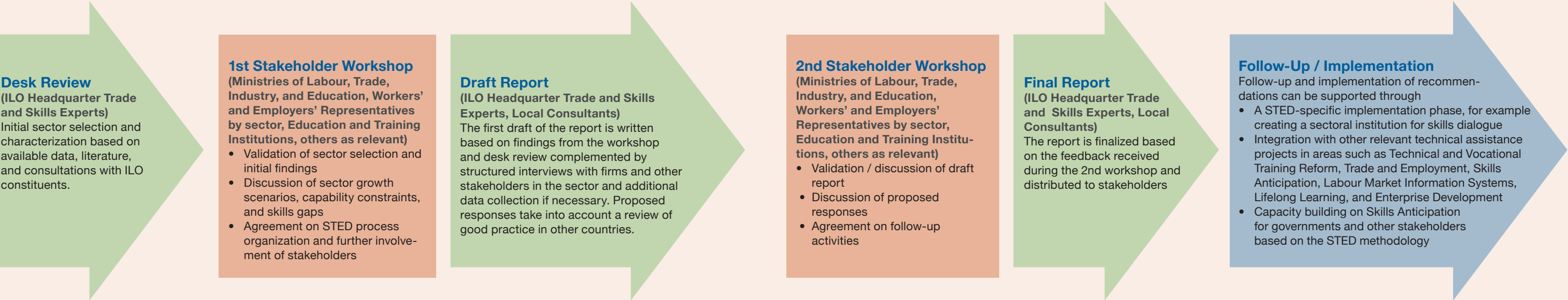
Three Paths for Follow-Up and Implementation

The process of applying STED contributes to improvements on the ground by raising awareness and stimulating dialogue on skills development among stakeholders within a sector. However, many of the recommendations from STED have a long term perspective. Ideally, planning a STED application will therefore include provisions for follow-up activities to support implementation. These include one or several of the following:

- If STED is applied as a stand-alone project, follow-up activities can include building and maintaining a specific institution for continuous skills dialogue at sectoral level and support to implementation. It can also involve providing funding and technical assistance for the development of new curricula or other targeted support to training institutions.

- STED can also be embedded in broader technical assistance projects in the areas of skills, trade, sectoral and private sector development, and employment promotion. In this case, the analytical results from STED inform follow-up work through established ILO methodologies in areas such as Technical and Vocational Training Reform, Dialogue on Trade and Employment, Skills Anticipation, Labour Market Information Systems, Promotion of Lifelong Learning, and Enterprise Development. Integration of STED into multi-agency projects is also a possibility.
- Finally, the STED methodology can be the basis for capacity building and support to existing institutions for skills anticipation and education planning. In this case, the focus is on transmitting to the relevant local institutions the ability to apply STED independently on an ongoing basis.

Fig. 3:
Typical STED Process



Six Analytical Stages of STED

STED'S SIX-STAGE ANALYSIS ANTICIPATES A SECTOR'S FUTURE PERFORMANCE AND THE RESULTING CHANGES IN LABOUR DEMAND BY SKILL TYPE.

STAGE 1 / Sector Position and Outlook

The first stage of STED is to analyze a sector's current position and outlook as well as external factors that are likely to affect its progress in the future. The results are discussed with stakeholders in order to develop an ambitious but realistic growth scenario for the medium term, based on the following questions:

- **Business as usual:** What would be a realistic growth trajectory based on existing products and existing markets?
- **More of the same:** How can export growth for existing products be stepped up, and what would be a realistic target?
- **Upgrade:** Is there room to develop new products, access new markets, improve quality and branding, increase value addition, etc.?

STAGE 2 / Business Capability Implications

The second stage identifies gaps between the business capabilities that firms in the sector have now and the business capabilities they will need in order to achieve the outcomes envisaged in the growth scenario from Stage 1. For example:

- What capabilities will firms need in order to develop new products in line with regulations and consumer tastes in foreign markets?
- What will they need to be able to do in areas such as logistics, sales, marketing and channel management in order to develop new export markets?

- What will a business in the sector have to be able to do better in its operations in order to become more competitive on cost and quality?

STAGE 3 / What Type of Skills?

Improving business capabilities is not just about skills. It is also about technologies, processes, strategies, financing, business culture and other factors within and outside a firm. However, any capability improvement will also have significant implications for skill demand. These are analyzed in Stage 3. The results point to the types of skills that will be important to deliver the medium term growth scenario. In addition, Stage 3 also identifies existing gaps in skills in all areas of relevance to firms (Box 2).

STAGE 4 / How Many Workers by Skill Type?

Companies hire workers, not skill-sets. In order to develop useful policy recommendations, anticipated developments in skills requirements are translated into demand for workers based on the sector's current occupational structure and the expected demand for new skills. The result is a picture of expected demand for workers by each relevant skill type.

Subject to data availability, this stage can include quantitative modelling that delivers indicative numbers for labour demand by detailed occupational categories (Box 3).

BOX 2: Firm Level Analysis

Analysis of business capabilities (Stage 2) and types of skills needed (Stage 3) in STED takes account of all areas of activity within a firm.



STAGE 5 / Skill Supply Gaps

Stage 5 matches the results from the previous stage with an assessment of the skills currently provided by the education system, on-the-job training, migration, etc. The purpose is to identify gaps between skill supply and demand now and in the future.

The analysis also covers the institutional set-up of the education system and available mechanisms for skills anticipation in order to identify potential institutional causes for skills mismatch.

STAGE 6 / Proposed Responses

The results of STED are concrete recommendations at the policy, institutional, and enterprise level. Policy recommendations typically cover the development of specific curricula or training programs, labour market policies that improve job matching, as well as the overall incentive system (taxes, subsidies, etc.) for innovation and skill formation. Policy recommendations also cover ways to enhance coherence between trade, investment, development, and skills policies.

At the institutional level, recommendations may suggest ways to enhance the relevance of training and educational institutions for the sector's needs, for example by improving dialogue with employers. In addition, the creation or improvement of permanent institutional arrangements for skills anticipation might be recommended.

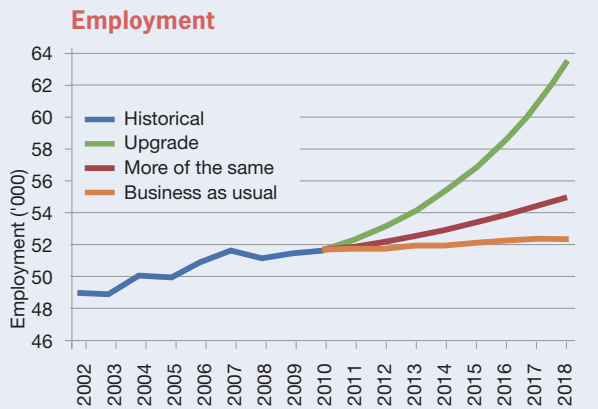
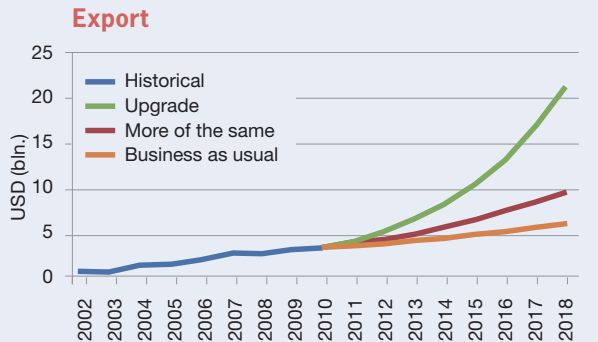
At the enterprise level, critical factors for skills development, such as in-house training, labour turnover, and mechanisms for social dialogue on training needs and delivery, are considered and improvements are recommended where necessary.

BOX 3: Modelling Labour Demand by Occupational Categories (part of STAGE 4)

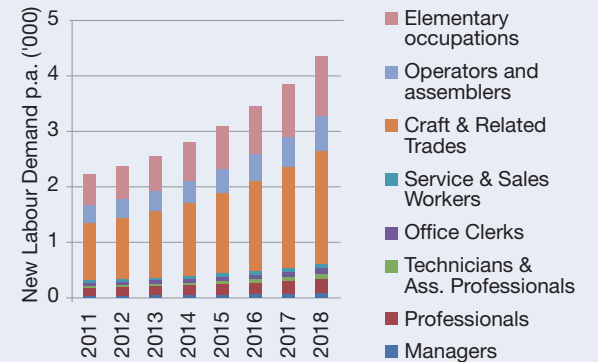
Future skill demand in a sector can be analysed quantitatively with a simple model that links: trade to output; output to employment; total employment in the sector to employment by occupation; and employment by occupation to labour demand by occupation. This can be used to quantify the demand for workers by occupation associated with an export growth scenario.

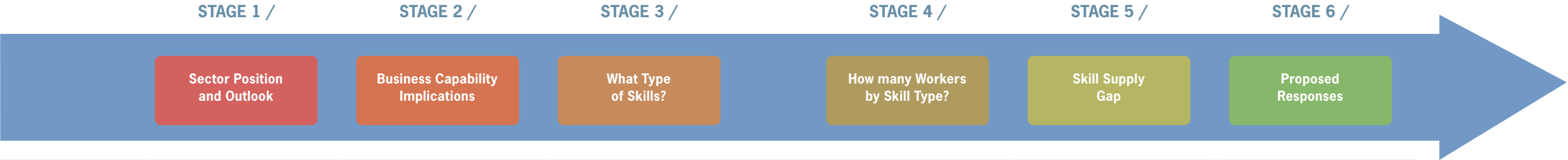
The suitability of this method depends on the availability of current trade, industry, and Labour Force Survey data.

Figs. 3a,b,c: Illustration of Modelling Steps



Labour demand by occupation under "upgrade" scenario





QUESTIONS	Internal • Sector size • Growth trend • Structure (firms, value chains) • Employment • Sources of competitive advantage / disadvantage • Investment • Entrepreneurship • Sectoral strategy External • Enabling environment • World market growth & structure • Position in world market • Drivers of change • Competitors • Prices	What business capabilities are required to support the preferred growth scenario from STAGE 1 ? Which capabilities already exist, which need to be improved or newly created?	What skills are needed by firms to acquire the priority capabilities from STAGE 2 ? What are the existing skills gaps that should also be bridged? Demand for which skills is likely to newly emerge / expand / contract?	How is labour demand likely to develop for workers of different skill types (both new and existing)?	What are the critical gaps between current and future labour demand and supply by skill type? To what extent does the existing education and training system produce workers with the required skills? What other sources of skills supply (learning by doing, migration, etc.) are available?	How can existing and future critical skill gaps be closed? How can existing training/ education institutions be improved to match demand? What other sources of skill supply can be used? How can skill demand be better anticipated in the future? How can enterprises contribute to enhanced skills in their workforce?
RESULTS	Growth scenarios such as: • Business as usual • More of the same • Upgrade the sector	Gaps and priorities in business capability development	Qualitative information on types of skills demanded	Quantitative and qualitative outlook on labour demand by skill type	Identification of current and future skill gaps	Recommendations at policy, institutional, and enterprise level to close critical skill gaps
SIMPLIFIED EXAMPLE	Food exporting firms currently serve mainly neighbouring low income markets. They see an opportunity to export higher quality products to more developed markets in the future.	Accessing higher end markets requires regulatory approval and compliance with quality standards.	Production line workers will need better skills in safe food handling. Laboratory skills are required for quality control.	Accessing large high end markets will raise demand for production workers, and a need for specialists in a range of areas relating to quality control, assurance and certification.	There is a shortage of production workers trained in safe food handling skills. Too few specialists on compliance with EU and US food safety regulations and documentation are available.	Include training on safe food handling in technical education curricula. Provide training in safe food handling to production workers. Establish partnership with a leading university on food science education.



STED Pilot Applications

Macedonia

Year: 2011

Sectors: Tourism, Food Processing

Selected Findings:

Only few companies in the food industry have been successful in building up sustainable export relationships and integrate into international value chains. The sector needs a clear strategy for enhancing its international competitiveness. Capability gaps at the enterprise level include brand development, international marketing and entry into international supply chains, as well as compliance with international food quality and safety standards.

Among the skill gaps that need to be addressed as part of a sector strategy are management and entrepreneurship skills, safe food handling and operation skills, handling of state-of-the-art machinery, process analysis and design, production chain management, food science and food engineering.

Recommendations include the design of appropriate training on the above mentioned topics to managers, technicians, and production workers, and integration of these topics into the relevant education curricula. Continuation of the ongoing reform process of technical education with a stronger focus on labour market applicability of the skills taught is encouraged. A reform of the legal provisions on seasonal work could help to address the negative impact of high seasonality in the sector on skills formation among workers.

Ukraine

Year: 2010

Sectors: Metal Industry, Tourism

Selected Findings:

Prior to the global economic crisis of 2008/9, the metal sector grew at high rates. However, growth was based on favourable world market demand rather than improvements in competitiveness, and metal exports remain concentrated in a few markets and relatively low-value products. The demand collapse during the crisis revealed the dangers of this growth model.

The sector is characterized by low levels of investment in new technology and entrepreneurship. Government incentives tend to support the status quo rather than promoting positive change. In addition, these policies are prone to be in conflict with WTO rules, which has led to disputes against Ukrainian metal exports.

Entrepreneurship skills are lacking at the top level of the sector. Current engineering curricula do not match the requirements of firms that attempt to move into higher value metal products. Expertise on applicable WTO rules needs to be strengthened in relevant government units.

Recommendations include a revision of the incentive system to reward innovation, the creation of an industry skills council to anticipate future skills needs and enhance the relevance of training curricula, and creating a graduate programme on WTO law.

Kyrgyzstan

Year: 2011

Sector: Garments

Selected Findings:

The garment sector faces significant adjustment challenges, including trade policy changes and potential adjustments to the small business tax system. At the same time, the current model of competitiveness through low wages has reached its limits. Increasing labour productivity will be key to maintain competitiveness.

Structural adjustments are expected to increase demand for specific types of skilled labour and new skill sets, in particular in quality control and marketing.

Public technical education institutions struggle to provide the required level of training, often due to outdated curricula and equipment. On-the-job training is frequent but informality and high labour turnover reduce incentives of workers and employers to invest in training.

Recommendations include specific training curricula and equipment for schools, strengthening of a recently founded sectoral body for skills anticipation, and application of ILO tools at the enterprise level to enhance labour productivity and reduce informality and labour turnover.

Bangladesh

Year: 2011

Sectors: Agro Processing, Pharmaceuticals

Selected Findings:

The pharmaceutical sector is currently producing mainly for the domestic market and some exports to low income markets. Active Pharmaceutical Ingredients (APIs) are imported and production is limited to generic drugs.

The sector has ambitious targets to increase exports to high-end markets, internalize API production, and invest in domestic research and development capacity.

Pharmaceutical companies will require new capabilities in the areas of research and development, clinical testing, quality control, and marketing to achieve these targets.

Awareness raising and training on regulatory compliance and Good Manufacturing Practices is required across all levels of manufacturing operations. Skill gaps are likely to occur in areas such as regulatory affairs, biotechnology, process development and plant design, and product and channel management for export marketing.



References

1/ OECD, ILO, World Bank, WTO (2010): *Seizing the Benefits of Trade for Employment and Growth*, Report for the G20 Seoul summit.

2/ Bernard, AB., JB. Jensen, SJ. Redding and PK. Schott (2007): *Firms in International Trade*, in: Journal of Economic Perspectives, Vol. 12, pp. 105-130.

3/ Cadot, O., C. Carrere and V. Strauss-Kahn (2011): *Trade Diversification: Drivers and Impacts*, in: M. Jansen, R. Peters and JM. Salazar-Xirinachs: Trade and Employment: From Myths to Facts, ILO, Geneva.

4/ Hoekman, B. and A. Winters: *Trade and Employment: Stylized Facts and Research Findings*, World Bank Policy Research Working Paper No. 3676.

5/ Goldberg, P. and N. Pavcnik (2007): *Distributional Effects of Globalization in Developing Countries*, in: Journal of Economic Literature, Vol. 45(1), pp. 39-82.

6/ Woessmann, L. (2011): *Education Policies to make Globalization more Inclusive*, in: M. Bacchetta and M. Jansen: Making Globalization Socially Sustainable, ILO and WTO, Geneva.

7/ International Labour Conference (2008): *Conclusions on Skills for Improved Productivity, Employment Growth and Development*, Geneva.

8/ World Bank (2007): *World Development Report 2007: Development and the Next Generation*, Washington DC.

