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Guidelines for inclusion of skills aspects into employment-related analyses and policy formulation

Hana Říhová, Olga Strietska-Illina



Guide



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International Labour Office
Skills and Employability Branch
Employment Policy Department
Geneva

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Foreword

Availability of skilled workers can attract investments and help to implement new products and technologies. Therefore skills development along with other measures is a key determinant of labour productivity, economic growth and job creation. In this light it is very important how well a country can equip its workforce with skills that are relevant to the labour market needs. Indeed, identifying and delivering the right skills for the economic activities that have a high growth and employment potential has been a central concern of policymakers.

Skills development represents an important investment for a country since it drives sector development processes and leads structural transformation of an economy. Thus it must be in line with a broader development agenda of the country. Nevertheless, fine-tuning skills development policies and aligning education and training to the identified skills needs is not an easy task. This requires sound analysis of sector growth and subsequent changes in skills demand, as well as constructive social dialogue for policymaking.

It is in this context that these guidelines provide practical steps with checklists and country cases for enhancing aspects on skills development in the National Employment Policy (NEP) as well as broader pro-employment policy formulation including sectoral approaches. It guides policymakers, social partners and experts involved in the process of policy formulation by suggesting important data and information sources for evidence-based policy debate on skills and by drawing their attention to key skills issues that they may wish to address through NEP.

We emphasize the learning process of policies. Policy learning takes place by evaluating the results of pilot policy projects (trial and errors) and reviewing lessons learned in other countries. Even though these guidelines have already built on lessons learned from the NEP process in Cambodia and benefited from piloting in Fiji and Sudan, they remain an evolving resource to be enhanced in the future, incorporating further feedback from outcomes of integrating skills policies in broader employment policy agenda.

It is our hope that these guidelines will serve as reference material for ILO constituents, experts and practitioners who help shape skills development through employment policies to address human capital development challenges.

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List of acronyms

ADB	Asian Development Bank
ALL	Adult Literacy and Lifeskills Survey
AWPA	Australian Workforce and Productivity Agency
Cedefop	European Centre for the Development of Vocational Training
ETF	European Training Foundation
ETPs	Enterprise TVET Partnerships
GDP	Gross Domestic Product
HRD	Human Resource Development
IALS	International Adult Literacy Survey
ICILS	International Computer and Information Literacy Study
ILO	International Labour Organization
ISC	Industry Skills Councils
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification
LFS	Labour Force Survey
LMIS	Labour Market Information System
NEP	National Employment Policy
NGP	New Growth Path
NHREP	National Human Resources and Employment Policy for Sri Lanka
NIS	National Institute of Statistics
NSDC	National Skill Development Corporation
NSTF	National Skills Task Force
OECD	Organization of Economic Cooperation and Development
PES	Public Employment Service
PIAAC	Programme for International Assessment of Adult Competencies
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment



SMEs	Small and medium-sized enterprises
STED	Skills for Trade and Economic Diversification
TIMSS	Trends International Mathematics and Science Study
TVET	Technical Vocational Education and Training
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
VET	Vocational Education and Training



Introduction


The purpose of this tool is to provide guidelines for **inclusion of skills aspects into employment-related analyses and policy planning at a national level**. It can be used in the context of National Employment Policies (NEPs), decent work country policy analyses and other activities such as the UN Development Assistance Framework.

Availability of workforce with good-quality and relevant skills is a crucial factor of economic and social development. Accomplishing the full employment potential of economic growth and structural transformation is only possible if skills development strategies form an integral part of national employment policies, trade and export strategies, sustainable development, investment and industrial policies.

Key ILO documents, agreed by tripartite representatives, advocate integrating skills strategies and related analytical activities in the process of formulation of broader policies. Recommendation 195 concerning Human Resources Development: Education, Training and Lifelong Learning (ILO, 2004) suggests that “Members should, based on social dialogue, formulate, apply and review national human resources development, education, training and lifelong learning policies which are consistent with economic, fiscal and social policies”. The International Labour Conference recognized early identification of current and future skill needs as an important element which should feed into national and sectoral development strategies (ILO, 2008: *Conclusions on skills for improved productivity, employment growth and development*).

The G20 Training Strategy suggests that “Maintaining a close connection between training policies and employment policies creates an effective bridge between the worlds of learning and of work. Policies to improve skills combined with policies to sustain growth and investment, facilitate job search, and support entry and re-entry into the labour market can lead to more and better jobs” (ILO, 2010).

It is therefore important that skills development is not treated as an independent issue. Many ILO projects and activities implemented by different departments and units have an important skills component. According to the G20 Training Strategy “Robust training and skills strategies and policies are constructed from a number of building blocks. These include anticipating future skills needs; participation of social partners; sector approaches; labour market information and employment services; training quality and relevance; gender equality; broad access to training; financing training; and assessing policy performance” (ILO, 2010). All of these building blocks need to be more or less closely linked with more general employment and development strategies. The EmPol Gateway (2013) found that out of the sample of 24 national employment policies adopted in 2005-2012, 15 covered the human resource development and vocational and technical skills.



This guiding tool should help the ILO experts include the skills aspects into their analyses and policy formulation at the national level.

The tripartite recurrent discussion on employment concluded that each member State should promote a comprehensive employment policy framework based on tripartite consultations, that among other elements also include “education policies that underpin lifelong learning and skills development policies that respond to the evolving needs of the labour market and to new technologies, and broaden options for employment, including systems for skills recognition” (ILO, 2014).

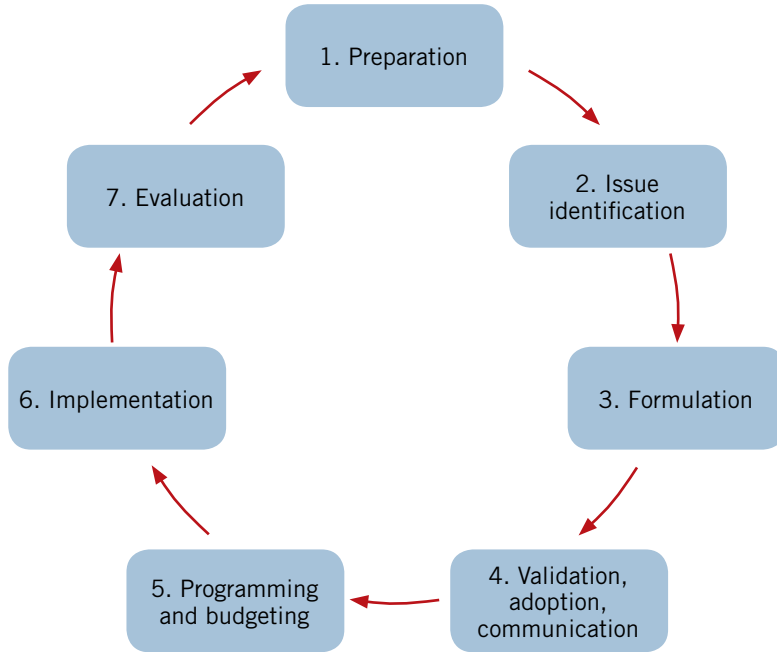
To maximize the comprehensiveness of approaches these guidelines have been prepared in consistency with already existing tools – in particular the Guide for the formulation of national employment policies (ILO, 2012a). **The seven phases of the policy process identified and described in the guide for NEPs were used as a core structure for the guidelines** (Figure 1.1).

The guidelines have been designed as an internal ILO document, assuming that the users are people who are experienced in employment and labour policy issues in general but may have different level of experience in the skills related issues. The guidelines therefore do not deal with each step of the policy process in general but focus on how skill aspects can be integrated into the analysis in the broader context. Most emphasis is put on the analytical phase of the process where the skills related aspects require more specific approaches.

Each phase of the process is described in a separate chapter which usually consists of **two parts**: (1) **checklist** providing a basic list of skills related aspects which should be covered in each phase; and (2) **guide notes** explaining these skill aspects in more detail, describing why they are important and providing methodological guidelines. The volume of the guide notes varies across chapters depending on how specific the skills topic in each phase is. In some phases where skills aspects are not very different from the general process only a simple checklist without notes is provided.




Figure 1.1:
The seven steps of the employment policy process



Source: ILO, 2012a.

The guidelines mostly focus on the policy formulation process, where complex background analysis of all relevant issues is vital. The main focus of these guidelines does not go into details of implementation. Similarly, we assume that in the context of these guidelines, skills policies will only be treated as an integral part of a broader policy framework which normally should be subjected to monitoring and evaluation. Therefore the guidelines deal with these issues only to a very limited extent.

The aim of the guidelines is to inform more general national policies and employment policies in particular, on aspects relevant to skills rather than provide a complete guide document for development of a specific skills or education strategy. They are therefore designed to respect more the employment policy cycle rather than a skills policy cycle. Details on linkage between these cycles are provided in Chapter 3.



The overall design of the guidelines is focused on analyses and policy planning at the national level. In many countries the employment-related policy is also an important aspect of sectoral analysis and policies. The analyses and policies at the sectoral level may, to a large extent, build on general guidelines in this guide. **Specific issues related to sectoral approaches in particular are discussed in Chapter 8.**

The guidelines build on ongoing ILO projects relevant to employment-related analyses and policy formulation at a national and sectoral level and are likely to be informed from more projects in the future and upgraded accordingly.



Key terms

Continuing vocational training: Further vocational training, undertaken by those who have already completed basic or initial training, in order to supplement acquired knowledge or skills (ILO, 2013a, Thesaurus).

Expansion demand and **replacement demand:** **Expansion demand** measures the increase in the number of people employed in an occupation due to industry growth, or because of an increase in the importance of that occupation within its industry. **Replacement demand** measures the net outflow of workers from an occupation due to retirement, migration or other movements out of an occupation. The **total demand** for workers is the sum of expansion demand and replacement demand (US Department of Labour).

Initial training: Pre-employment training in the fundamentals of an occupation. It may qualify a learner for a job or provide the basis for specialization (ILO, 2006: Glossary of key terms on learning and training for work, unpublished).


Inclusive employment: all activities, which enable an individual, male or female, living in rural or urban areas, educated or not, disabled or not, to gain access to decent remunerated work. (*Handicap International, Inclusive Employment, Policy Paper 05, 2011, accessible from http://www.hiproweb.org/uploads/tx_hidrtdocs/InclusiveEmploymentPP05.pdf*).

Non-formal learning: Organized and systematic learning activity conducted outside the formal education system (Inter-Agency group on TVET, 2011).

Recruitment difficulties: An umbrella term incorporating all forms of employer recruitment problems, not specifying the reason. Such problems can be caused by skill shortage but also by poor recruitment practices, poor perceived image of the industry, low remuneration, or poor terms and conditions of employment, and can occur even where there are sufficient skilled individuals available and accessible for work. Terminologically it is important to distinguish between ‘**difficult-to-fill vacancies**’ and ‘**difficult-to-fill occupations**’, where the latter manifest a higher concentration of recruitment difficulties in certain occupations either nationwide or geographically-bound and may be seen as symptoms of skill shortages (Strietska-Illina, 2008).

Recognition: Acknowledgement of the knowledge and skills that an individual has acquired in previous training and work or through experience (Inter-Agency group on TVET, 2011).

Social dialogue: All types of negotiation, consultation and exchange of information between, or among, representatives of governments, employers and workers on issues of common interest. How social dialogue actually works varies from country to country and from region to region. It can exist as a tripartite process, with the government as an official party to the dialogue or it may consist of bipartite



relations between labour and management, with or without indirect government involvement. It can be informal or institutionalized, and often is a combination of the two. It can take place at the national, regional or enterprise level. It can be inter-professional, sectoral or a combination of these. (International Labour Organization, <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/social-dialogue/lang--en/index.htm>).

Sector skill councils: A platform for at least two types of stakeholders in a specific sector of the economy - employers and government representatives in particular, sometimes also representatives of educational institutions and trade unions. The sector skills councils provide analysis on labour market trends in the sector, focus on anticipating employment and skills needs within the sector, and use this insight to inform the development of sectoral policies (Wilson et al., 2015, forthcoming).

Skills gaps: The qualitative mismatch between the supply or availability of human resources and the requirements of the labour market. ‘Skills gaps’ exist where employers feel that their existing workforce have inadequate skill types/levels to meet their business objectives; or where new entrants to the labour market are apparently trained and qualified for occupations but still lack a variety of the skills required (NSTF, 1998; Strietska-Ilina, 2008).

Skills mismatch: An imbalance of skills in the labour market in relation to jobs. It can be both quantitative (skills shortage or surplus) or qualitative (skill gaps or skill underutilization).

Skill (labour) shortage: ‘Skill shortage’ is a genuine lack of adequately skilled individuals available in the accessible labour market with the type of skill being sought and which leads to a difficulty in recruitment (NSTF, 1998). A skill shortage characterizes the situation in which employers are unable to recruit staff with the skills they are looking for at the going rate of pay (European Employment Observatory, 2001). This could result from basic lack of people (when unemployment levels are very low), significant geographical imbalances in supply (sufficient skilled people in the labour market but not easily accessible to available jobs), or a genuine shortfall in the number of appropriately skilled individuals – either at new entrant level, or for higher level skilled occupations (NSTF, 1998; Strietska-Ilina, 2008).

Technical and vocational education and training (TVET): Initial and continuing education and training provided by schools, training providers or enterprises, that imparts the skills, knowledge and attitudes required for employment in a particular occupation, or group of related occupations, in any field of economic activity (*adapted from ILO Thesaurus*). Education and training beyond compulsory education, but excluding degree-level programmes, which provides individuals with occupational or work-related knowledge and skills (Inter-Agency group on TVET, 2011).



Chapter 1. Preparation phase

The objectives of the preparation phase are to define goals and identify the framework for the policy process. It considers current employment policy in the country, and key stakeholders who raise employment issues in public discussion. It is also a critical time to consider skills aspects and integrate relevant stakeholders to ensure that employment policy adequately addresses and responds to skills issues in the labour market.



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Checklist 1



Have current employment policy and relevant materials been identified?

- ☐ Legislation relevant to all levels and forms of education (e.g. education act, continuing training, higher education, TVET, employment act, labour code)
- ☐ Legislation relevant to recognition and validation of informal learning
- ☐ HRD and skills strategies
- ☐ Labour market analyses
- ☐ Industrial policies / sectoral studies
- ☐ Active labour market policy
- ☐ Strategic documents for education and training, including continuing vocational training and adult learning
- ☐ Analytical and strategic documents which contribute to the development of occupational/education standards, national qualifications frameworks, curricula
- ☐ Public concerns as discussed in the media

Are all relevant stakeholders involved?

- ☐ ILO constituents
 - ▶ Government
 - ministry in charge of employment and labour issues, Public Employment Services (PES)
 - ministry(ies) in charge of all forms and levels of education and training (see Box 1.1)
 - line ministries (Industry, Trade, Agriculture, Health, Transportation...)
 - ▶ Employers
 - ▶ Trade unions
- ☐ Existing tripartite bodies
 - ▶ HRD Council, National Skill Council, inter-ministerial committees, human resource development authorities, national qualification bodies, etc.
 - ▶ Sectors skills councils
- ☐ Other representatives of the private sector (chambers of commerce, professional associations)
- ☐ Informal sector representatives (employer organizations, trade unions...)
- ☐ Representatives of education and training
- ☐ Involvement of regional level partners if appropriate in the context of the country's governance system

Are all relevant stakeholders consulted?

- ☐ Have the role of stakeholders been identified? Are there role changes of these stakeholders in the policy development or implementation?
- ☐ What mechanism is used to engage stakeholders actively? Is this mechanism considered effective?



1.1. Base line of employment policy

The current policy should be used as a basis for the improvement of future employment policy. The policy may be anchored in the current laws, and may be translated into several ministerial regulations. The policy may also not be effectively implemented. Therefore, collecting all the materials will help to identify the gaps and aspiration of the people.

1.2. Involvement of stakeholders

In addition to their other roles in the broader policy process partners have specific roles in skills identification or development. It is important to ensure that all the actors and entities responsible for relevant skills issues are included when developing the network of stakeholders to foster a more cohesive process. The stakeholders in both governing and implementing roles should be involved in the process to ensure policy and practical feasibility.

ILO Constituents

Government:

- **Ministry in charge of employment and labour issues** and/or **Public Employment Services** often provide (re)training to improve the employability of their clients and are responsible for relevant policies (active labour market policy). In addition they are providers of important skills related to labour market data and information – vacancies, job seekers, unemployment, sometimes conducting surveys among employers (e.g. skills barometers).
- **Ministries responsible for education and training** have a key responsibility for skills supply policy and governance. Sometimes different parts of the education system are governed by different ministries so it is especially important to ensure that all relevant partners have been involved. See Box 1.1 to check if all parts of the education and training system have been covered.
- **Line ministries** (Industry, Trade, Agriculture, Health, Transportation etc.) may be involved to help ensure consistency of general skills development strategies with industrial policies. They can help with identification of skills demand resulting from sectoral trends and strategies and can sometimes provide vocational training in their field or are responsible for accreditation of training. Sometimes these line ministries also hold budgets or funds to develop human resources in their sectors, which can be integrated into national skills policies.

Employers are the final users of the training and skills development. They provide training themselves or buy it from different training institutions. They can provide the most direct information on the demand for skills as well as on current recruitment difficulties. Employers may be organized in an employers' association or chamber of commerce.

Trade unions contribute to ensure that the skills development will have longer-term effect on employability of workers (e.g. transferable skills) and have high stakes in issues related to the recognition of skills in the available stock of human capital. Trade unions can also be instrumental for the potential inclusion of skills development in collective bargaining. If there are several trade unions, ensure that trade unions of sectors with large contribution to employment or income are consulted.

Box 1.1: Pillars of education and training systems



Throughout the whole process (during involvement of stakeholders, issue identification as well as planning) it is important to keep in mind that skills development could be provided through different forms of education which is implemented and governed by different bodies. All three basic pillars of education and training should be covered:

- ▶ **Formal education** – usually governed by the Ministry of Education, some parts (in particular TVET or higher education) may be governed by the Ministry of Labour or other line ministries. It includes initial education but may also provide some specific forms of education for adults which lead to nationally recognized qualification level.
- ▶ **Active Labour Market Policy** measures – usually provided and/or funded by PES for job seekers but some measures can also include support of enterprise training with the aim to retain employment of current workers in case of restructuring. Such measures are often delivered by various training providers – both private and public - and may lead to a recognized certificate.
- ▶ **Private training** – purchased by companies or individuals. Includes a variety of training activities and can be provided by different types of institutions – private education providers, associations, but also schools. Usually does not lead to a recognized full qualification, but can sometimes end with a recognized certificate. It can however also include non-formal training aimed at development of specific skills. It is difficult to have non-formal training fully represented in the consultation process, and statistics also do not cover this type of training properly. The partners can be different associations of training institutions or sometimes employers' associations.

Source: Authors.

Tripartite bodies

The **National HRD Council** or a similar institution (national skills council, workforce development agency etc.) can work under a ministry of education or labour, as an inter-ministerial platform or can be supra-ministerial. There can also be an apex organization coordinating education and training policies and programmes. Such bodies usually bring together government, industry, trade unions and education and training providers. They are often responsible for coordination of skill needs identification and forecasting at national level. They sometimes implement or fund multisectoral or macroeconomy-level research such as macroeconomic model-based skills needs projections or national establishment surveys. They provide



a platform for cooperation among sectoral councils and are often in charge of formulating national priorities and visions with regard to skills and human resource development. In some countries they are responsible for administration of skills development (training) funds generated from employers' levies (e.g. AWPA – Box 1.3). In some countries like Egypt, the Industrial Training Council affiliated to the Ministry of Industry and Foreign Trade also administrate and fund active labor market programmes for training for employment.

Sector skill councils provide a platform for at least two types of stakeholders in a specific sector of economy – employers and government representatives in particular, but in many and indeed best cases they also involve representatives of trade unions and those of education and training. The sector skills councils provide analysis of labour market trends in the sector, focus on anticipating skills and workforce needs within the sector, use these insights to inform the development of sectoral policies, as well as use this information to support education and training providers to develop relevant occupational standards and curricula. The most advanced of these organizations act as a voice for employers in specific sectors within the education system. (Boxes 1.2, 1.3 and 1.4).



Box 1.2:

National and sectoral skill bodies in India:

The National Skill Development Corporation India (NSDC) was set up as part of the National Skill Development Mission to 'catalyse' skills training and development through fostering private sector and industry participation. NSDC is a not-for-profit institution set up by the Ministry of Finance. It operates as a public private partnership, of which 49 per cent is owned by the Government of India and 51 per cent by industry. Its board represents government and the private sector, with the latter having majority. The NSDC commissioned a detailed analysis of skill needs in 20 high growth sectors and the unorganized sector until 2022. The Skill Gap Analysis Reports are also available for nine regions. The reports are based on a common methodology across the different industries. They use macro projections to identify future trends in combination with available statistics and primary information. The reports analyse industry size and growth, identify demand drivers, current and future employment and skill needs, skill gaps, emerging occupations, and focus areas for skill building.

The NSDC established Sector Skill Councils in key sectors to fulfill the following functions:

- ▶ Setting up a labour market information system (LMIS) to assist planning and delivery of training
- ▶ Identifying skills development needs and preparing a catalogue of skill types
- ▶ Developing a sector skills development plan and maintain skills inventory
- ▶ Developing skill competency standards and qualifications
- ▶ Standardizing affiliation and accreditation process
- ▶ Participating in affiliation, accreditation, standardization
- ▶ Planning and executing training of trainers
- ▶ Promoting academies of excellence.

Source: Wilson et al, 2015, forthcoming.

Box 1.3: Australian Industry Skills Councils



In Australia Industry Skills Councils (ISCs) bring together industry, training providers and governments to create a common industry-led agenda for skills and workforce development at the national level. Their key role is to represent industry in the management and planning of TVET, the development of training products, and providing advice to Australian state and territory governments about industry skill needs.

The formal roles of ISCs include:

- ▶ collecting information on industry training needs from employers, unions and professional industry associations;
- ▶ providing industry intelligence and advice on current and future workforce development and skills needs to the Australian Workforce and Productivity Agency (AWPA), government and enterprises;
- ▶ supporting the development, implementation and continuous improvement of training and workforce development products and services;
- ▶ assuming primary responsibility for the development and maintenance of training packages (equivalent to competency standards);
- ▶ providing independent skills and training advice to enterprises, including matching identified training needs with appropriate training solutions;
- ▶ coordinating the National Workforce Development Fund (the function shared with the AWPA).

The work of the ISCs feeds into broader national skills policies and the National Workforce Development Plan through the AWPA. The AWPA was established in 2012 to support the formulation of workforce development policy and advice, and direct skills funding to industry needs. The AWPA engages directly with industry on workforce development issues and develops strategies to address sectoral and regional industry needs. A key function of the AWPA is the administration of the newly created National Workforce Development Fund and prioritising industry sectors, regions, and groups for funding. Furthermore it is responsible for skills and workforce research, providing independent advice on sectoral and regional skills needs to support workforce planning and driving engagement between industry, training providers and government on workforce development, apprenticeships and TVET reform.

Source: Wilson et al, 2015, forthcoming.



Box 1.4: Egyptian Enterprise TVET Partnerships (ETPs)

Egypt has recently started to encourage formal partnerships between TVET providers and employers at the individual, sectoral and regional levels. The TVET Reform Programme is a co-funded project between the European Union and the Government of Egypt between 2005 and 2013. One of its outcomes was the establishment of 12 sectoral ETPs. ETPs are employer-led organizations modeled after the UK Sector Skills Councils – which bring employers' voice to TVET policy dialogue and provide an institutionalized approach to employer engagement in TVET reform in particular and skills in general.

The ETPs model can be considered a unique Egyptian Sector-based model for linking business and TVET, where the private sector employers take the lead constituting two thirds of the board of directors elected through the relevant sectoral chamber while the remaining third are appointed by government to represent public and private sector TVET providers. The 12 sectors currently represented include; engineering industries, food processing, chemicals industries, leather and tanning, printing and media, building materials, furniture manufacturing, ready-made garments, hospitality, tourism, construction and civil engineering.

ETPs services include:

- ▶ Conducting sectoral labour market information surveys and analysis.
- ▶ Build training capacity in the sector through the development and training of master trainers and trainers.
- ▶ Improve the quality of TVET delivery in the sector through creating and developing training and educational packages in cooperation with employers and TVET providers.
- ▶ Improve all training related affairs including reform of the technical secondary schools.
- ▶ Support the development of training providers and training stations serving the sector.
- ▶ Deliver training in the sectors where there are no training providers.
- ▶ Providing technical assistance to the sectors in all TVET and HRD matters
- ▶ Assist in the establishment of Centres of Competence dedicated to the sector
- ▶ Build up and permanently update National Occupational Standards
- ▶ Assess the training needs of industry
- ▶ Auditing training providers
- ▶ Organizing conferences and awareness workshops
- ▶ Managing national or regional training for employment programmes on behalf of NGOs, donors or government.

It must be noted that these organizations are still in the development stage and maturing and their performance varies from sector to sector and are lacking robust institutional and financial support.

Source: El-Ashmawi, 2012.

Involvement of other stakeholders

Other representatives of private sector (industry associations, chambers of commerce...) and representatives of **informal economy** have similar roles on the employer part. Involvement of other representatives from private and informal sectors can provide a broader perspective on the skills issues including the situation in SMEs, informal employment, employment in agriculture etc., where the skills mismatches can be significant barriers to growth and the capacity for skills development is low.

Representatives of education and training are responsible for skills development at the operational level – design and realization of courses, hiring tutors, providing training materials and equipment etc. They may involve direct education providers, but also institutions and people responsible for development and application of NQFs, occupational standards, curricula, quality assurance, accreditation etc. Involvement of representatives of different types of education and training is again essential (see Box 1.1). The institutional arrangements provide the venue for interaction among various stakeholders. While formal education institutions can be relatively easily involved through ministries of education, involvement of other TVET providers (especially private) can be more challenging.

National statistical institution has a key role in delivery of data to support the “issue identification” phase and beyond.

Research institutions – universities, research centres and other public and private institutions who conduct relevant economic, labour market, education and skills research.

NGOs and associations which work with specific target groups (e.g. people with disabilities, women, disadvantaged youth, older workers etc.) often provide targeted programmes including counselling and skills delivery for enhancement of employability.

Other international and donor agencies working in the country in the field of skills development may also play an important role. The success of employment policies’ formulation and especially implementation is subject to support of various donors. Skills development is often implemented as part of national development plans or education and training strategies, which can also include a skills component. Coordinating with these strategies is important for planning as well as for potential resource mobilization.



Involvement of regional stakeholders: The main level at which stakeholders should be involved is national. However sometimes cooperation with regional stakeholders may be essential for work on the national strategy. This decision has to be made in the context of a country's size and governance. The education systems are decentralized in some countries with regional ministries of education in charge of their governance. Some activities on skills identification and skills mismatch prevention can be also regional (skills councils, HRD councils etc.). Also, when these do not exist at the national level, involvement of regional stakeholders may be very useful.



Box 1.5: Example of regional governance of education system

In Bosnia and Herzegovina the education system is governed by ten cantonal ministries of education, federal ministry of education and ministry of education of Republika Srpska. Although ILO Employment Diagnostics was implemented at national level, the governance aspect had to be taken into account and regional stakeholders had to be consulted. Stakeholders at both state and entity level were consulted.

Source: Khare et al, 2011.

Figure 1.2:
Matching skills supply and demand



Source: Authors.

The role of the institutions in skills matching and development will be further explored in the issue identification phase. This may reveal the importance of involvement of new stakeholders at a later stage of the policy process.



Chapter 2. Issue identification phase

The objective of the issue identification phase in general is to understand what has been good and would like to be maintained in current employment policy, and produce a statement of issues which identifies the opportunities, challenges and constraints. Skills issues should not be overlooked during the issue identification phase. Current indicators used in the employment policy may help to understand the issue (see Section 2.2. for details).



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Checklist 2



- ☐ Has an analysis of the drivers of changes in skills demand and supply and relevant policies been conducted?
 - ▶ Environment
 - ▶ Trade and globalization
 - ▶ Demography
 - ▶ Migration
 - ▶ Technology
 - ▶ Other relevant drivers depending on the country and policy context
- ☐ Have key skills indicators been taken into consideration?
 - ▶ Skills supply
 - ▶ Skills demand
 - ▶ Skills mismatch
 - ▶ Skills issues for target groups
- ☐ Are the data for skills analysis and evaluation of skills related objectives available on a regular basis?
 - ▶ If not has this been recognized as one of the issues which the strategy should deal with?
- ☐ Does the analysis of institutional and legislative framework for skills identification and development cover all important aspects?
 - ▶ qualitative information on general practices;
 - ▶ problems which the institutions face in their work;
 - ▶ identification of gaps in the legislation and institutional framework;
 - ▶ identification of overlap of responsibilities of different institutions and regulations;
 - ▶ the likely future development according to information from strategies and plans.

The organization of this phase often includes a set of background studies which may be prepared by different contractors experienced in the particular field. One possibility is to have a special background study aimed at skills or a specific aspect of skills (see Box 2.1). If this is not the case, it should be ensured that the skills aspects appear as a transversal topic in several background studies.

In the issue identification both secondary and primary information can be used, gained through data collection and consultation with experts and stakeholders. Various types of indicators can help to obtain inputs on the employment and skills issue before or during the interview, and analysis can be assessed during the interview.



Box 2.1: Background studies for National Employment Policy in Cambodia

During the development of the National Employment Policy (NEP) with focus on young women and men in Cambodia several background studies have been prepared. Skills needs and education and training were one of the main topics in a number of studies but a specific study was commissioned by ILO and implemented in collaboration with National Employment Agency – an establishment survey on skills shortages and skills gaps (see Box 2.11).

Other background studies that also touched upon the issue of skills were:

- ▶ School-to-work transition survey implemented by the National Institute of Statistics (NIS) and ILO
- ▶ Women's labour force participation and employment analysis prepared by Cambodia Institute of Development Study
- ▶ Employment diagnostics analysis, jointly conducted by ILO and the Asian Development Bank (ADB).
- ▶ Micro, small and medium-sized enterprises study prepared by Emerging Markets Consulting on behalf of ADB.

Other studies prepared for the NEP in Cambodia focused on pro-employment macroeconomic frameworks, migration, rural employment, and the labour force and child labour survey (2012) by the NIS and tourism. Such a complex analytical approach enabled the collection of the necessary background information for a better understanding of main barriers to more and better quality employment in Cambodia. It contributed to intense discussions at national level preceding the policy formulation process and the subsequent policy adoption in 2015.

Source: Authors.

2.1. Drivers of change in skill demand and supply

The skills demand and supply are influenced by a number of broader factors in the world economy and society in general. Among the most important factors are the following: demographic changes, migration, international trade, technology, and environmental changes, but, depending on the country context, other drivers of change could be equally important (in some countries conflicts, peace agreements, division of borders, political unrest, returning combatants etc. can influence labour market balance more than any other factors). These drivers of changes will have to be taken into account and examined in the broader context of analyses and policy formulation. The impacts on skills should not be overlooked as illustrated in the following three cases (Boxes 2.2, 2.3 and 2.4).

Box 2.2: Skills for Trade and Economic Diversification (STED)

“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.

A key area in which well-designed and proactive 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. 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. Availability of skilled labour is also a prerequisite for countries to absorb new technologies through trade openness and FDI. (...) 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. 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.”

Source: Gregg et al, 2012; ILO, 2012b.

Box 2.3: Skills needs for the low carbon economy


Achieving a successful transition to the low carbon economy is one of the greatest policy challenges of the present day facing governments and their peoples worldwide, and is of deep concern to businesses, workers and the organizations that represent them. Moving towards a greener economy is creating opportunities for new technologies, investment, and jobs. At the same time, environmental change and in particular climate change has detrimental effects on certain economic sectors and can cause job losses.

Identifying and providing right skills for new and existing jobs can smooth transitions to greener economies and ensure that new opportunities benefit a broader share of society. Strategies to reduce carbon emissions, and indeed other environmental objectives, require people with the right skills to implement them.

Shortages of skills are regularly identified as one of the major obstacles to the implementation of these strategies. Shortages of high quality skills may damage implementation, slowing it, making it less efficient, driving up costs, and reducing or eliminating the environmental benefits. Shortages of people with the right skills can bring implementation of low carbon initiatives to a halt.

Source: ILO, 2011a.



Box 2.4: Economic diversification as a result of political changes in Sudan

In Sudan, the July 2011 secession of South Sudan brought about tremendous change to the country dynamics and, although it ended decades of civil war and conflicts, it has also led to the loss of massive oil revenues (around 75 per cent) and made the changes for sustained economic development more challenging for North Sudan. These events have put greater emphasis on social equity, youth empowerment through employment, and economic diversification.

Outside the oil sector, Sudan's economic growth is narrowly based and limited in reach; non-oil products now account for only about 5 per cent of exports. Diversification will be imperative for sustained growth and employment creation. At the same time, the urban informal sector accounts for more than 60 per cent of GDP, while agriculture still remains the main driver of employment, especially outside of the major urban areas. The service sector has been the fastest-growing sector in recent years, surpassing even the growth in oil. Trade, hotels and restaurants have also flourished, but almost exclusively in Khartoum, and generated about one-fifth of GDP during 1996-2006. One of the key factors contributing to the insignificant share of non-oil exports is weak institutional capacities of human, physical and environmental resources.

With the above-mentioned socio-economic changes facing Sudan there will also be changes, challenges and opportunities for new sectors and new players in the economy. The question that should be constantly at the back of the mind of all policy and decision makers is how prepared and flexible is the education sector in general and TVET in particular in adapting to the needs of these new and emerging drivers of change for skills demand.

Source: El-Ashmawi, 2015a.

2.2. Indicators to identify skills issues in the labour market

A number of indicators can be used to identify skills supply, demand and mismatch. In theory, skills mismatch occurs when the labour supply does not meet the demand of the labour market. In reality direct and precisely measured comparison of supply and demand in the labour market is not really possible because of a number of conceptual, methodological and data issues. Thus a few proxy indicators are suggested with guidance provided on how they can be used to identify skills mismatch. The indicators describe supply, demand and mismatch of skills.



Box 2.5: Difficulties of direct comparison of skill supply and demand

In the Philippines there is the evidence that “relatively better-off households - better skilled and educated, with savings and assets - are able to transact in overseas job markets. In turn, overseas remittances generate further advantage and mobility” (p. 23). The share of workers who migrate abroad in total national labour force is significant. A direct comparison between labour supply and demand is therefore difficult not only in terms of total numbers but also in terms of structure of skills.

Source: King Dejardin, 2010.

The skills issues can only be identified by comparing skills supply and demand. Looking on only one of the sides will not provide sufficient information about the mismatch. Since the information on supply and demand usually comes from many different sources direct comparison of number of workers is not possible. Comparison of trends in demand and supply is more appropriate than comparison of **stocks**. It is also important to keep in mind that not only the growth of employment in particular sectors or occupation creates labour demand, but also the fact that people leave their jobs and have to be replaced (replacement demand). We should be aware that even if we compare the trends, there are **limitations of the comparison**. For example an extensive emigration can mean that the supply, which is measured by numbers and structure of graduates in different fields, is not the actual supply which comes to the local labour market.

The indicators which directly provide information on mismatch have more a signaling function about an existing mismatch but, with the exception of direct qualitative questioning of employers (or graduates or workforce) do not provide much information on the character and causes of the mismatch.

The following figure suggests various indicators which can be used to describe skills supply, demand and mismatch. A number of the suggested indicators are skills specific (like the list of skill gaps). Others (like unemployment rates or structures of employment) are more general and should be taken into account in the analyses which would be done in the broader context, e.g. using breakdowns by education and by occupation.

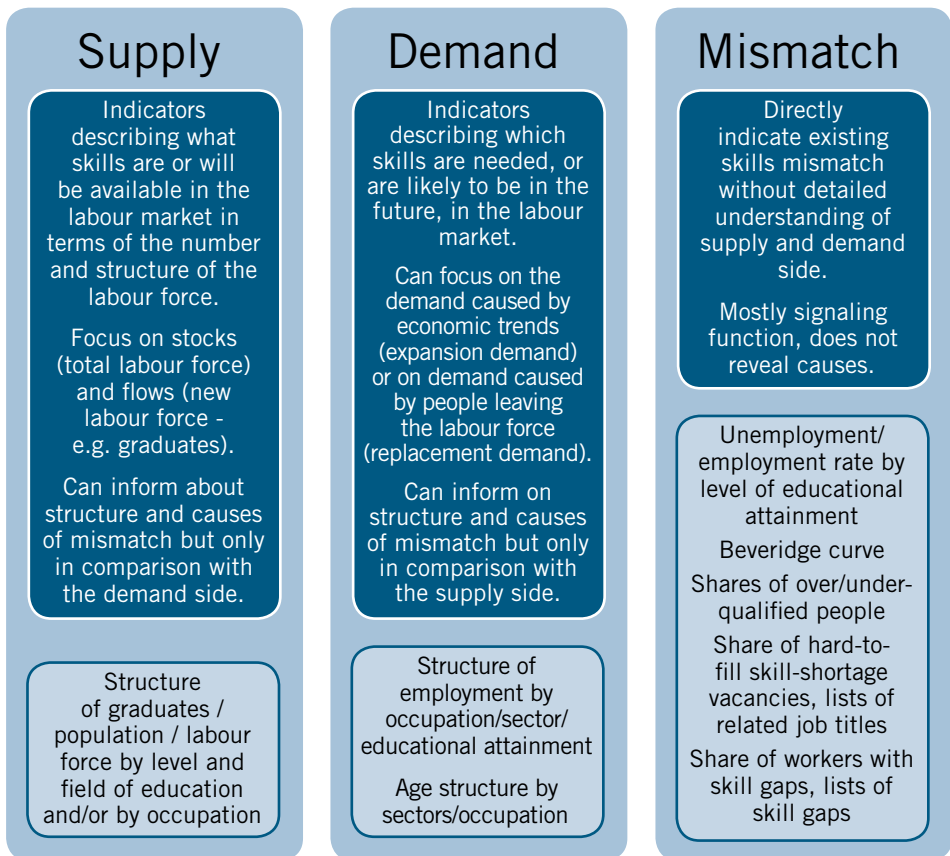
The researchers may then decide which indicators are relevant and feasible in a particular country. This depends not only on the needs of the particular analysis but also on the data availability in the country as discussed in more detail in Section 2.2.1. There are also initiatives to develop a set of internationally comparable skill indicators by the G20 groups (see Example 1: G20 indicators of skills for employment and productivity in developing countries), which can be used. The G20 indicators were taken into account in this guiding tool. However a selection and amendment was made reflecting especially two specific conditions under which this guiding tool will be used:

- These guidelines reflect the fact that the skills analyses are prepared as part of broader national analyses or strategies and not as comprehensive stand-alone skills assessments. The number of indicators was therefore limited. The G20 skills indicators also contain a number of contextual and outcome indicators which have not been taken into account in these guidelines with the assumption that they will inherently be part of the broader analyses.
- In the context of these guidelines, the main purpose is identification of skills-related issues within a particular country itself and therefore there is no need for international comparability (although some comparisons can always be used as benchmarks for analysis).



The indicators presented hereinafter are not exhaustive and there are always alternative ways of measuring the same indicator. It is also important to realize that every measurement will only inform the policy formulation in a limited way. Only complex analyses that combine various methods and approaches are likely to reveal the real situation. More information on the use of labour market information for anticipating and matching skill needs could be found in the forthcoming ETF-Cedefop-ILO Guide on the use of labour market information for anticipation and matching of skills (Rihova, 2015, forthcoming).

Figure 2.1:
Indicators of skills supply, demand, and mismatch



Source: Authors.

Structure of graduates by field and level of education

Structure of graduates informs about the inflows to the labour supply. The level of education is no doubt an important indicator of the skills supply but not sufficient. The field of education is sometimes more important in terms of skills matching than the education level itself. Although there is not a one-to-one relationship between jobs and fields of education, the level and field of education significantly influences the chances to gain narrow or broader range of jobs.

It is important to notice that the numbers and structures of graduates do not provide precise numbers of the labour supply. To measure it we would have to know what share of graduates will continue on to the next educational level and how many will drop out from the local labour market for other reasons (e.g. starting family, migration etc.). Making these estimates is possible but it requires developed data sources allowing for combining data from different educational levels, avoiding double counting (e.g. master degrees reached after bachelors or people graduating in more than one field) and ideally tracing the graduates. If this is not possible the structures of graduates should be compared with demand data in a more qualitative ways looking at the general structure and trends.

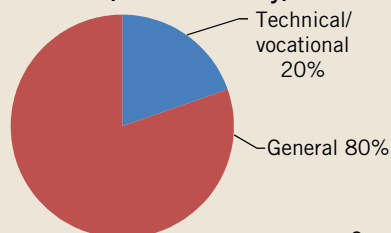
NB: Where data on graduates are not available, it is possible to use data on enrolments, minus the estimated or actual shares of drop outs per type of education. In countries where this type of data (as well as the lack of consistency in conducting tracer studies) is not well kept or not accessible to researchers, these types of comparisons and links will be difficult.

Possible sources of information:

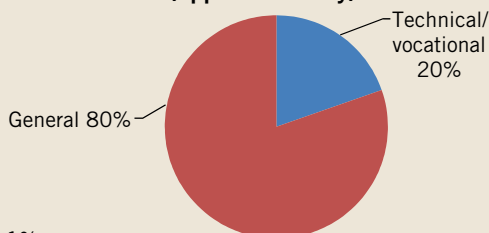
Administrative data (education statistics)

Example: Structure of graduates by field of education (Mexico, 2010)

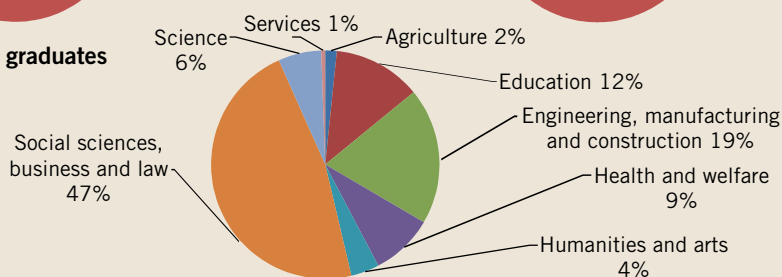
ISCED 2 (lower secondary) - enrolment



ISCED 3 (upper secondary) - enrolment



Tertiary - graduates



Source: UNESCO Institute of Statistics, 2013.

Further indicators:

- Structure of labour force by level and field of education
- Structure of population by level and field of education

Structure of labour force / population (household surveys data) can be used to describe the skills supply in their complexity with more focus on stocks than flows. However the data on fields of education are not always available from the household surveys and the field of education can be less relevant for people who gained their education a long time ago.



Employment structure by sector

The indicator provides basic information on which sectors are the most important sources of employment in the country. It measures the so-called expansion demand. It also helps to identify in which sectors there will be rising or declining demand for labour, where to invest in training etc.

As mentioned before direct comparisons of numbers in demand and supply is difficult and there is a risk of false impression of preciseness. Analyses of trends and comparisons of trends in a particular sector with development in total employment are therefore more appropriate. The indicator is therefore particularly useful if time series are available or even the projection of future employment in sectors. Different methods of anticipation of the future demand in sectors can be applied from simple extrapolation to sophisticated economic models.

Possible sources of information:

Labour force survey, establishment surveys

Example: Employment by sector (Indonesia, 2011)

Sector	Number of employed (000s)		% of total employment		Average annual change of employment	
	2005	2012	2005	2012	2005-2012	2010-2012
Agriculture, forestry, hunting and fishery	41814	41205	44.0	36.5	-0.2	-1.9
Mining and quarrying	809	1620	0.9	1.4	10.6	16.8
Manufacturing industry	11652	14212	12.3	12.6	2.9	4.3
Electricity, gas, and water	187	298	0.2	0.3	7.7	19.6
Construction	4417	6103	4.7	5.4	4.9	12.3
Wholesale trade, retail trade, restaurants and hotels	18897	24021	19.9	21.3	3.5	4.0
Transportation, storage, and communications	5553	5192	5.8	4.6	-0.9	-5.5
Financing, insurance, real estate and business services	1043	2779	1.1	2.5	15.5	30.3
Community, social, and personal services	10577	17373	11.1	15.4	7.5	5.5
Total	94949	112803	100.0	100.0	2.5	2.1

Source: Statistics Indonesia, 2013. ILO calculation.

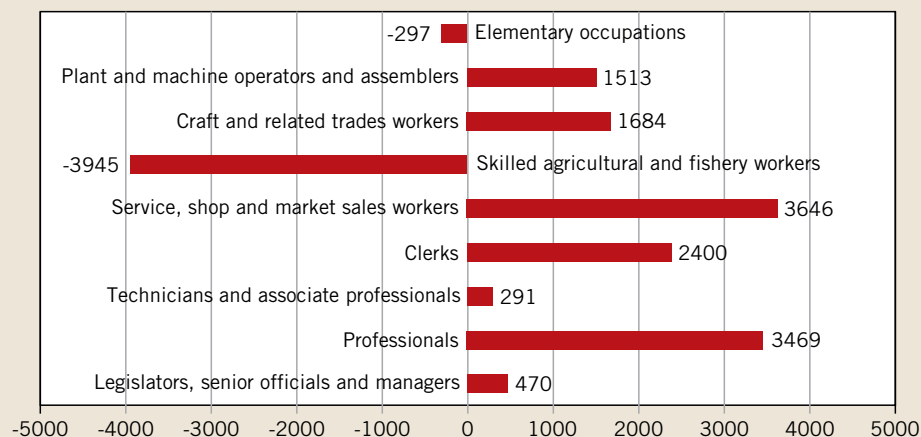
Further indicators:

- Employment structure by occupation

Trends in employment structure by occupation provide alternative information on demand. In quantitative analyses occupations are often used as a proxy for skills. However its usefulness is very limited if only 1-digit ISCO categories are available. More detailed data are necessary if we want to understand the structure of expansion demand. A combination of sectoral and occupational information would provide the best picture.

Example: Employment change by ISCO 1 digit (Russian Federation)

Change of employment for major occupational groups (2005-2013, in thousands)



Source: Authors calculations from ILO, Employment by occupation (thousands) - Russian Federation. ISCO-88.



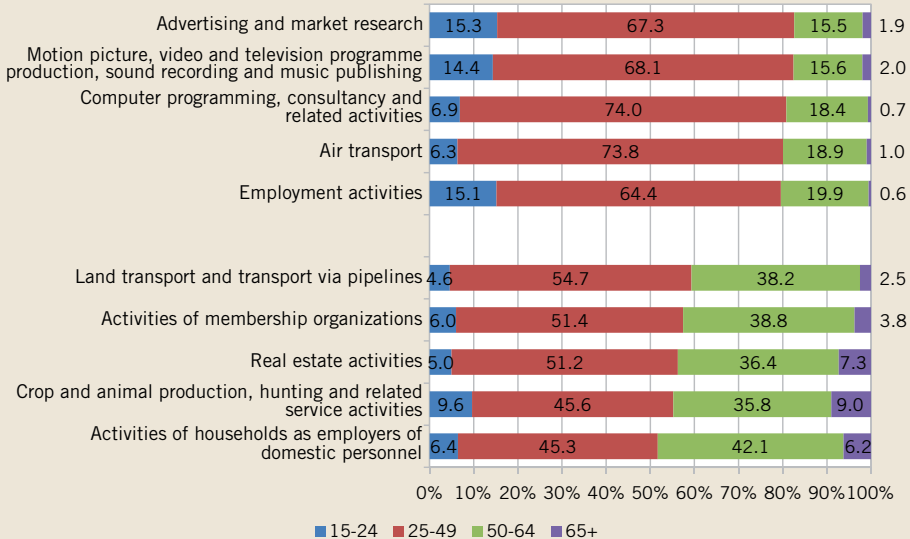
Age structure of employment by sector

In addition to demand for labour as a reason of growing number of jobs (expansion demand), other vacancies are generated by the fact that a certain number of the current workers leave the labour force due to retirement or other reasons. As a result even the sectors and occupations with a steady or declining trend of employment can create significant demand for labour which is called replacement demand. The age structure of the labour force by sector or occupation can help to estimate how high the replacement demand is.

It is still important to keep in mind that the replacement patterns are not straightforward and an experienced older worker cannot be simply replaced by a recent graduate. Also the real age when people leave employment is different from the statutory retirement age and changes over time. The share of older workers or the ratio between older and younger workers has to be considered as an indicator, not as a tool to measure precise number of vacant jobs for the future.

Possible sources of information: Labour force survey, census

Example: Structure of employment in selected sectors by age (Germany, 2011)



Source: Eurostat, 2013, sector classification NACE rev 2, 2 digit, selected 5 sectors with highest and 5 sectors with lowest shares of people aged 50+.

Further indicators and measurement:

- Age structure of employment by occupation
- Models of replacement demand

Similarly as in the previous indicator, the age structure in different occupations can be used which is especially useful for understanding which occupations are “aging” the most and where replacement is likely to be required.

The replacement demand can be more appropriately measured if we track the actual behaviour of people in the labour market (outflows in different age groups in retirement or parental leaves, outflows of people to other sectors or occupation). This requires usually developed sophisticated models based on longer time series and working with individual data or detailed matrices.

Unemployment rates by level of educational attainment

Unemployment rates could reveal mismatch issues, pointing to problems with surplus of people with education for which there is insufficient demand in the economy or problems with the skills composition or quality.

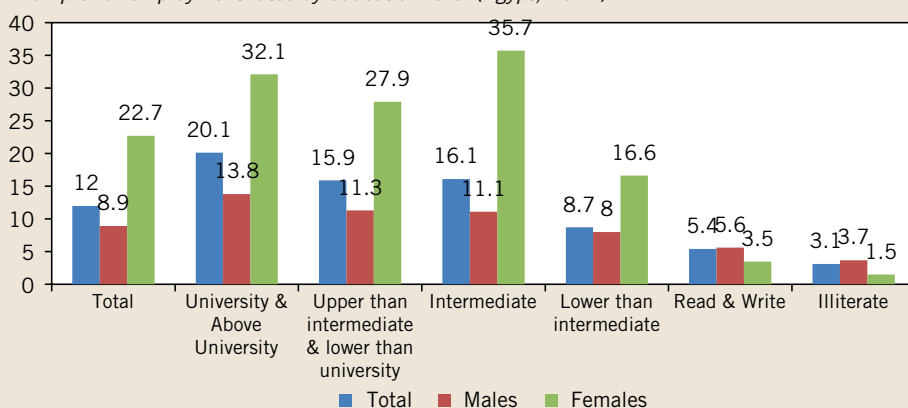
Unemployment rates are computed as a share of unemployed people in total labour force (= employed + unemployed). According to ILO standards the unemployed people are those who do not work, are available for work and are seeking work. Some countries however use their own definitions, sometimes the administrative unemployment rates are counted using the number of people registered with public employment services. The ILO definition is however more recommendable because it reflects more on the actual situation in the labour market and it is not so dependent on legislation related to unemployment benefits.

In the analysis, it is important to pay attention to the difference in the situation where higher rates of unemployment are experienced by lower skilled job seekers, and the situation where labour force with higher levels of educational attainment suffer from relatively higher unemployment rates. The latter points not only to a mismatch situation but also to lower returns on investments into the extended years of education and manifests “unhealthy” mismatch. Such mismatch may result from lack of job creation for better qualified people which does not keep up with the growing supply of educated workforce, or to the structure of supply by the field of education not meeting the demand (e.g. too many social scientists and economists and not enough engineers), or to poor access to the labour market among women.

Possible sources of information:

Labour force survey, Public Employment Services (PES) statistics

Example: Unemployment rates by education level (Egypt, 2011)



Source: Central Agency for Public Mobilization and Statistics, 2013.

Further indicators:

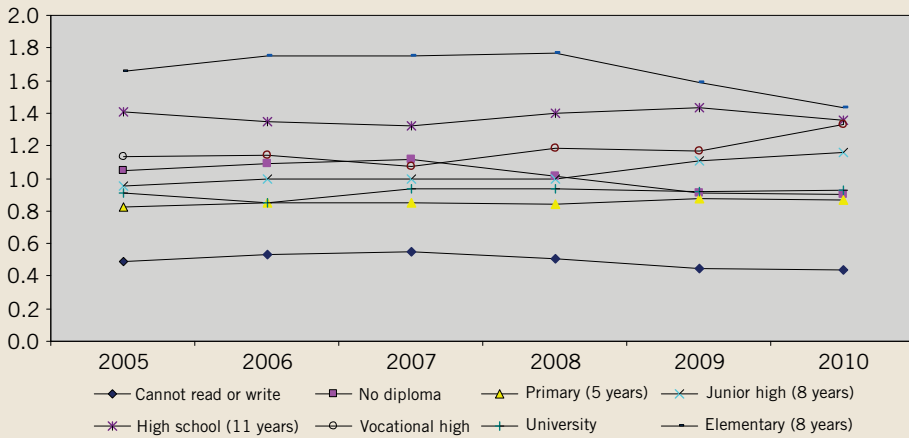
- Employment rates by level of educational attainment
- Comparison of proportions of employed and unemployed by education level

In developing countries, especially in populations with low levels of educational attainment, the unemployment rates have to be taken very cautiously because the interpretation of inactivity, unemployment and sometimes work in the household, in agriculture or unregulated informal sector can in some cases be misleading. Using employment rates or the ratios of economically active people on the whole population can be used instead of unemployment

Another alternative is not to construct the rates but to compare the education attainment levels of employed and unemployed population. The following chart shows an example of this approach – a ratio of between the proportions of employed and unemployed at each educational level.



Example: Trends in the proportions of unemployed relative to the proportions of employed (Turkey, 2005-2010, LFS data)



Source: Johansen, Gatelli, 2012.

Beveridge curve

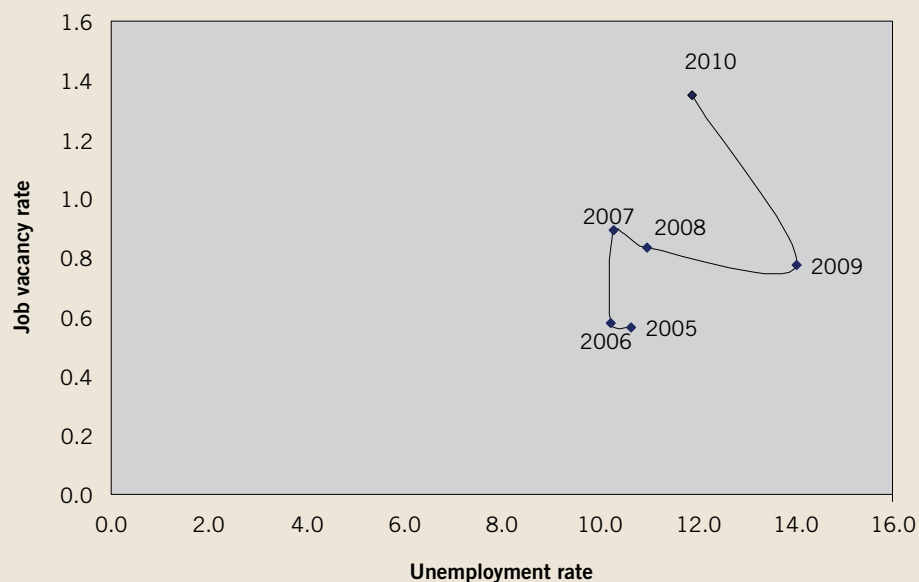
The Beveridge curve describes the relation between unemployment and vacancies. The further from the origin the curve is, the worse the matching process, reflecting that more vacancies are in the economy at the same time as unemployed. Shifts in the Beveridge curve further from the origin can be a signal of a growing skills mismatch because this would mean that vacancies and unemployment are growing at the same time. This can be caused by structural mismatch between labour supply and demand, but also by effectiveness of matching supporting services and geographical aspects.

On the other hand movements along the curve are seen as the changes caused by the economic cycle. The Beveridge curve can be a useful tool indicating the mismatch, but it should be interpreted cautiously and in the context of other labour market indicators. Unemployment rates and numbers of vacancies can be influenced by other than just labour market matching processes such as high fluctuation or legislation. The quality is also strongly dependent on the data available where the coverage of vacancies not reported to the PES statistics are a big issue. If the data allow for that then the Beveridge curve can be constructed for individual occupations.

Possible sources of information:

PES statistics on vacancies, LFS data on unemployment

Example: Beveridge curve (Turkey, 2005–10)



Source: Johansen, Gatelli, 2012.



Shares of over/under-qualified workers or over/under-educated

The indicator compares qualification /the level of educational attainment of the worker with the skills level corresponding to tasks of the occupation of his/her actual job.

The matching skill levels to occupations are defined in the ILO conceptual framework of ISCO-08 (ILO, 2012c) :

Mapping of ISCO-08 major groups to skill levels and ISCED

ISCO-08 major groups	ISCO-88 Skill Level	ISCED-97 groups
1 - Managers, senior officials and legislators,	3 + 4	6 - Second stage of tertiary education (leading to an advanced research qualification) 5a - First stage of tertiary education, 1 st degree (medium duration) 5b - First stage of tertiary education (short or medium duration)
2 - Professionals	4	6 - Second stage of tertiary education (leading to an advanced research qualification) 5a - First stage of tertiary education, 1 st degree (medium duration)
3 - Technicians and associate professionals	3	5b - First stage of tertiary education (short or medium duration)
4 - Clerks 5 - Service and sales workers 6 - Skilled agricultural and fishery workers 7 - Craft and related trades workers 8 - Plant and machine operators, and assemblers	2	4 - Post-secondary, non-tertiary education 3 - Upper secondary level of education 2 - Lower secondary level of education
9 - Elementary occupations	1	1 - Primary level of education

Source: ILO, 2012c.

For the correspondence of ISCO 88 see <http://kilim.ilo.org/2011/download/kilm05EN.pdf>

This correspondence is however very rough and sometimes has to be adopted to the country's context because the statistics often do not allow for distinguishing between primary and lower secondary education and/or between upper secondary and certain forms of post-secondary education.

The indicator provides indicative information and it does not reveal the actual structural mismatches which are more often in terms of fields rather than levels of education. However it can provide some information, e.g. in cases where there is a high share of both under and over-qualification pointing to inefficient distribution of labour force in jobs and to possible structural mismatch on the labour market. Although the indicator is widely used because of relatively easy access of data and reasonably simple understanding it is also legitimately criticized by labour market statisticians because the level of this indicator does not only depend on the actual level of mismatch but also on the general level of the labour force education attainment as such.

Possible sources of information:

Labour force survey, PES statistics

Example: Shares of over- and under-qualified workers (Moldova, 2010)

Source: UNECE, 2013 (<http://w3.unece.org/PXWeb/en>), compiled from national and international (Eurostat and ILO) official sources. For the technicians both upper and post-secondary levels were assumed as appropriate because the data do not allow to distinguish between them. For ISCO 4-8 upper secondary education was considered as appropriate because the statistics do not allow to distinguish between primary and lower secondary education.

Further indicators:

The indicator as presented here provides a variant which can be constructed with the use of generally available statistics. There is however a variety of other ways on how to measure over- or under-qualification such as self-assessment, assessment by employer of more sophisticated construction work with the real modus qualifications of the workers used for definition of job qualification requirements. (For more information see Allen et al., 2013).

Education field of study mismatch in the first job (%), Kyrgyzstan

Education level of labour market entrant	Field of study required by employer				Total
	Exclusively my own field	My own or a related field	A (completely) different field	No specific field of education	
Initial vocational	33	28	15	24	100
Secondary vocational	38	20	11	31	100
Higher	51	21	12	16	100

NB: The table refers only to those who have found a job after leaving education for the first time, excluding entrepreneurs (N=1263); missing data below 1 per cent.

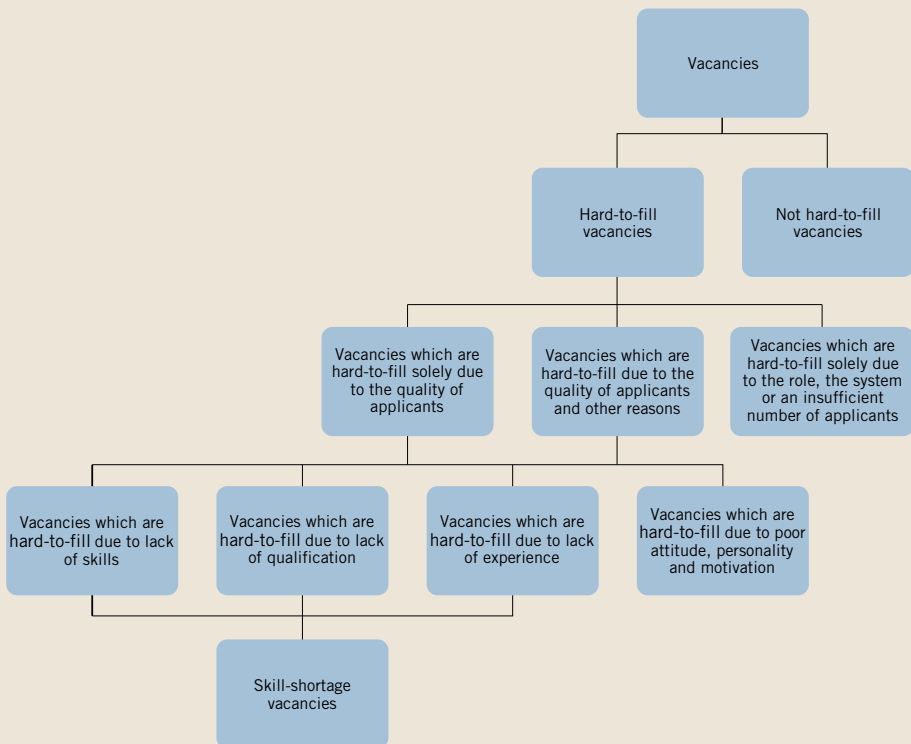
Source: Baumann et al., 2013 as quoted in Rihova, 2015, forthcoming.



Share of hard-to-fill and skill-shortage vacancies

Vacancies are sometimes used as a proxy variable for demand of skills and the difficulties in hiring can provide information about the skills mismatch. The total number of vacancies is however influenced also by fluctuation of employees and other factors (seasonal effects etc.). Therefore the indicator of hard-to-fill vacancies as reported by employers was developed to provide information about hiring difficulties. This still does not however provide information about the skills mismatch. The presence of hard-to-fill vacancies can reflect other problems (poor recruitment and human resource management policies, low wages, and poor work conditions). A better version of the indicator therefore shows specific skill-shortage vacancies. The following scheme describes the concept of skill-shortage and other hard-to-fill vacancies in the UK employer skills survey. Because the data usually come from employers' surveys, the poor working conditions are not an appropriate question in the questionnaire and the survey questionnaires may instead include a question to address candidates' unwillingness to work in specified conditions or their expectations of the pay which is higher than that offered.

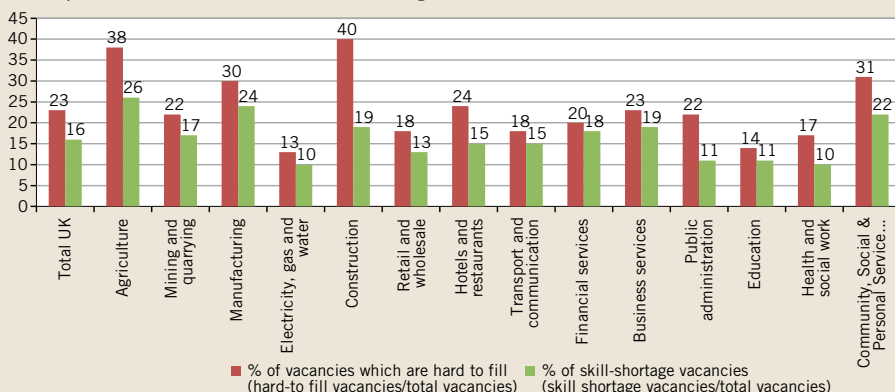
Since such data can only be generated by directly asking employers (i.e. HR or general managers in enterprises, firm owners), it is important to bear in mind the subjectivity of the obtained information. Combining this information with other sources, and with discussions among stakeholders, is therefore much advised.



Source: UKCES, 2012.

Possible sources of information:

National employer/establishment surveys. Manpower Talent Survey. World Bank enterprise surveys.

Example 1: Hard-to-fill and skill-shortage vacancies


Source: UKCES, 2012.

Further indicators:

Additional qualitative information can be provided by the list of vacancies which are most difficult to fill.

Example 2: Top 10 Jobs employers are having difficulty filling (2012)

	Global	India	Ireland
1	Skilled trade workers	IT Staff	IT staff
2	Engineers	Marketing/public relations/communication staff	Nurses
3	Sales representatives	Engineers	Sales managers
4	Technicians	Sales representatives	Insurance staff (qualified brokers, clerks etc.)
5	IT staff	Teachers	Engineers
6	Accounting and finance staff	Accounting and finance staff	Sales representatives
7	Drivers	Call center operators	Chefs/cooks
8	Managements/executives	Insurance staff (qualified brokers, clerks etc.)	Drivers
9	Labourers	Secretaries, PAs, administrative assistants and office support staff	Restaurants & hotel staff
10	Secretaries, PAs, administrative assistants and office support staff	Researchers (RaD)	Mechanics

Source: ManpowerGroup, 2012.

The list of jobs includes all jobs in which employers report difficulties filling. The top reasons they report are lack of: hard skills, available applicants, experience and of soft skills. It is however important to note that there are other reasons for hiring difficulties beside skills - such as applicant looking for higher pay than offered, geographical reasons or working conditions. In some countries it is also the perceptions, image and social status associated with the job that may provide reasons for hiring difficulties.



Skill gaps

While the skill shortages describe primarily the unavailability of skilled workers in quantitative terms, the skill gaps look at the quality. The opinion surveys are practically the only way of measuring the skill gaps. Two aspects can be described – the incidence of skill gaps in terms of the share of the workforce not having sufficient skills to perform their work (or alternatively share of employers facing these gaps) or the list of skills which are missing. It is important to bear in mind that these lists do not provide information on the actual level of the skills of the workforce but about the gaps in the context of their jobs' demands. They are therefore country specific (e.g. the demands on foreign languages in an English-speaking country may be lower than in a country with a not so widely used official language)

Possible sources of information:	National establishment surveys. Manpower Talent Shortage Survey. World Bank sponsored employer surveys.
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Example 1: Density and distribution of skills gaps by occupation (England, 2011)

	% of staff reported as having skill gaps	Share of employment (column %)	Share of all skill gaps (column %)
Overall	5	100	100
Managers	3	20	11
Professionals	4	11	9
Associate professionals	5	7	6
Administrative/clerical staff	5	13	11
Skilled trades occupations	5	7	7
Caring, leisure and other services	5	8	8
Sales and customer services	8	13	19
Machine operatives	6	7	8
Elementary staff	8	15	20

Source: UKCES, 2012.

Further indicators:	Additional qualitative information can be provided by the list of skills which the employees lack (expressed as a share of employers facing this problem or share of staff who lack these skills).
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Example 2: Share of employers seeing following skills as a reason for the talent shortage (percentage) (ManpowerGroup, 2012):

Technical skills deficiencies (hard skills)	
Industry-specific qualifications/certifications - professional	16
Industry-specific qualifications/certifications - skilled trades	11
Operating mechanical/industrial equipment	3
Computer/IT skills	3
Speaking/verbal skills	3
Foreign language	3
Employability skills deficiencies (soft skills)	
Interpersonal skills	6
Enthusiasm/motivation	6
Collaboration/team work	4
Professionalism (e.g. personal appearance, punctuality)	4
Flexibility/adaptability/agility	4
Ability to deal with ambiguity/complexity	3
Attention to detail	3
Problem solving & decision making	3

Source: ManpowerGroup, 2012.

Other options include assessing the skill gaps from the point of view of the workers through self-assessment – either the workforce in general or graduates. The data come from employee or household surveys (e.g. Programme for International Assessment of Adult Competencies, PIAAC) or tracer surveys of graduates.

In an ideal world a joint employer-employee survey would provide both perspectives. However this is costly and quite rare.



Box 2.6: Bosnia and Herzegovina –need to interpret indicators in linkages and context

Unemployment rates are much lower amongst tertiary educated workers in Bosnia and Herzegovina, than amongst those with primary or secondary education. One change that is evident between 2007 and 2012, however, is the strong reduction in this advantage; on average in 2007, in Bosnia and Herzegovina those without a tertiary education were three times as likely to be unemployed as those with one, however, by 2012 those with only primary or secondary education were only around twice as likely to be unemployed as tertiary graduates. The reduction of the advantage happened at the time when the educational attainment of population in Bosnia and Herzegovina was rapidly growing. Although such descriptive statistics do not allow us to identify causal links between rising educational attainment and falling returns to tertiary education (i.e. higher unemployment rates associated with it), it is noteworthy that rising tertiary attainment in Bosnia and Herzegovina has been accompanied by a sharp increase in the unemployment rates of tertiary graduates. This is certainly clear evidence that raising educational levels will not of itself create employment. Opportunities for the more educated also have to exist or be created for this to happen.

The Bosnian example clearly shows the need to interpret each indicator in relation to others in the particular country and ideally follow the trends rather than a single figure captured at a point of time.

Table 6 Unemployment rates by educational attainment in Bosnia and Herzegovina, 2007 and 2012

	Total	Primary & less (ISCED 0-2)	Secondary (ISCED 3-4)	Tertiary (ISCED 5-6)
2007				
Bosnia and Herzegovina	29.0	31.2	31.3	10.7
Federation of Bosnia and Herzegovina	31.1	38.2	32.3	10.7
Republika Srpska	25.2	21.4	29.3	10.8
2012				
Bosnia and Herzegovina	28.0	26.9	30.6	17.9
Federation of Bosnia and Herzegovina	29.4	30.5	32.3	15.7
Republika Srpska	25.6	21.8	27.7	22.0

Note: The unemployment rate is defined as: $100 \times \text{unemployed} / \text{labour force}$ (defined for each level of educational attainment).

Source: Bosnia and Herzegovina Labour force survey 2007 and 2012

Source: O'Higgins, 2014.

Examples of sets of indicators used

In reality the situation has to be evaluated by a number of indicators interpreted in a mutual context. The indicators on skills can be a set of indicators themselves as shown in the example of G20 indicators, or rather can be only a part of a set of indicators used to evaluate situation in the labour market as in the example of Fiji.

Example 1: G20 indicators of skills for employment and productivity in developing countries

The G20 development working group focuses on the creation of internationally comparable and practical indicators of skills for employment and productivity in developing countries. The choice of indicators is driven by the criteria of relevance, feasibility, international comparability and timeliness.

The indicators consist of five groups to describe the skill demand (skill requirements) and supply (skill acquisition) and the matching process between them and in addition to inform on contextual factors and outcomes. The three core groups include the following indicators:

Skill acquisition

- Educational attainment of the adult population
- Literacy of youth (15-24) and the adult population (15+)
- Cognitive skills (literacy/numeracy) of students and adults
- Gross and net primary school enrolment rate
- Primary completion rate
- Gross and net secondary school enrolment rate
- Lower secondary completion rate
- TVET share of upper secondary
- Tertiary level enrolment rate
- Education enrolment (young adults)
- Share of tertiary graduates and enrolments in science and technology
- Participation in apprenticeships
- Participation in education and training by adults (25-64 year olds) and working adults

Skill requirements

- Educational attainment of employed persons
- Employment shares by occupation
- Incidence of self-employment
- Job-task measures of skill use at work
- Job requirements by qualification

Matching supply and demand

- Proportion of workers who are over- or under-qualified
- Proportion of qualified workers working in the informal sector
- Hard-to-fill vacancies (by occupation)
- Skill gaps (by occupation)
- Changes in earnings by education and gender
- Changes in earnings by occupation and gender
- Changes in unemployment rate by education

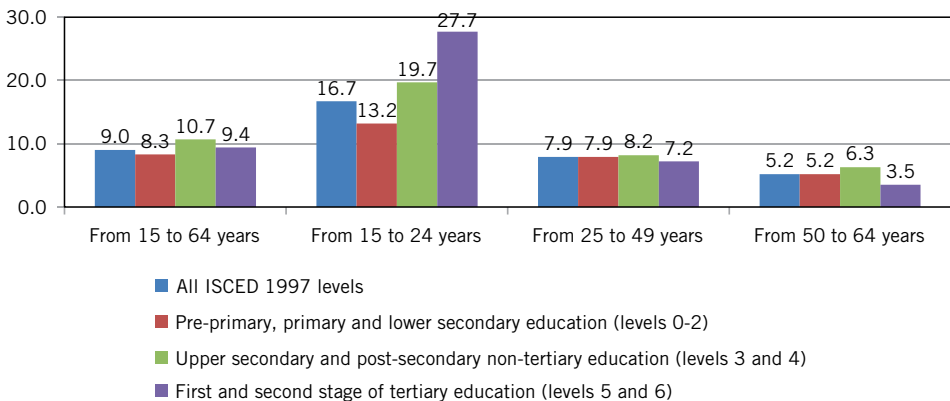
Source: G20, 2011; Broecke, 2013.



Specific target groups

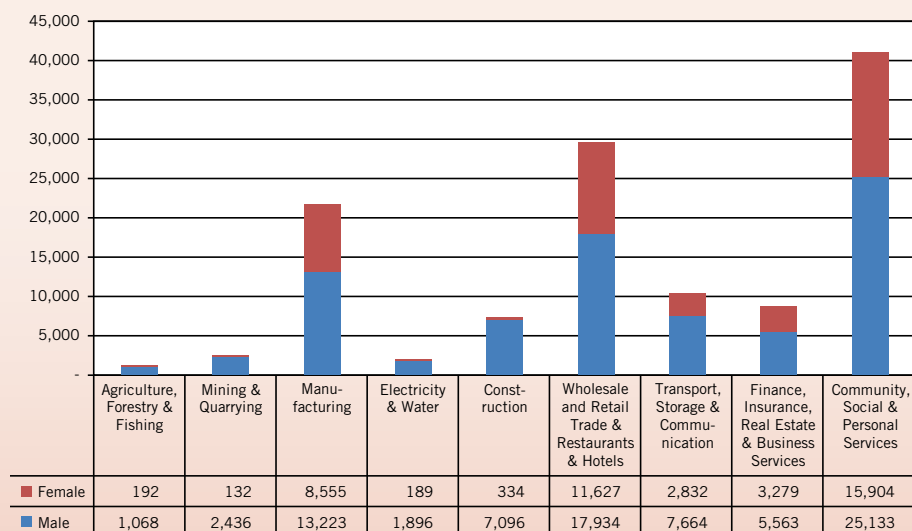
Focus on specific target groups is usually part of the employment policy. The skills aspect should therefore also be part of the analyses and objectives for these target groups. The above mentioned indicators should, as far as possible, be computed separately in subgroups by gender and age. The breakdown will help to reveal specific problems, better formulate the objectives and design implementation tools. Gender breakdown can point out several causes of skills mismatches, e.g. inequality in access to higher education or obstacles for entry in occupations perceived as traditionally male or female. Breakdown by age can point out problems in structure of graduates by field, problems in the quality of graduates' qualification or problems of older workers' needing to update their skills for new technologies.

Example 2: Unemployment rates by age and education – Turkey, 2011



Source: Eurostat, 2013.

Box 2.7: Fiji paid employees (person) by sex, 2009



Female paid employment is mainly in the hotel and tourism industry, and public services (see figure above). In general, female participation in the labour force is less than men. Issues with less participation of women in the labour force (interview result with Fiji Commerce and Employers Federation):

- Over supply of labour. Several coups caused jobs losses. Employers tend to provide job opportunities for men because men are the bread winner of the family and young women have family commitments.
- Image that women have less work ethics than men. Traditional women in Fiji have five children, while employers have to pay for maternity leave for three months. Employers consider that recruiting women provides uncertainty of working time commitment and cost. Therefore, employers prefer to provide job opportunities for men.

Source: Gunawan, 2014 (unpublished).



Box 2.8: Core work skills of the young disadvantaged population

One of the specific target groups of the employment policy may be disadvantaged youth. The ILO's *Guide to core work skills. Enhancing the employability of disadvantaged youth: What? Why? and How?* focuses on the core skills that this group needs to enhance their employability. According to this guide "core employability skills build upon and strengthen those developed through basic education, such as reading and writing, technical skills needed to perform specific duties, and professional/personal attributes such as honesty, reliability, punctuality, attendance and loyalty." (p. 2) The skills are categorized under four broad headings: learning to learn, communication, teamwork and problem-solving.

"Core work skills are often not certified nor formally recognized" (p. 2) and therefore they are also difficult to capture with quantitative indicators. Some, but not all of them, are measured by international OECD surveys for the school population (PISA, TIMSS, PIRLS, ICILS) and adult population (IALS, ALL, PIAAC). The quantitative indicators have to be accompanied by the qualitative knowledge gained from employers, education specialists and other experts.

The *Guide to core work skills* provides guidance for different parts of the education system on increasing the core employability skills and suggestions for PES on their recognition.

Source: Brewer, 2013.

Other specific target groups (ethnic minorities, people with disabilities, migrant workers) can also be considered although statistics for these groups are often not available and would require implementation of a specific survey or other methods to solve data issues (see Section 2.2.2).



Box 2.9: Skills issues for disadvantaged target groups in Sudan

The term "Youth" incorporates within it a wide range of categories that could also be recognized as vulnerable groups, like young women, young workers with disabilities, and internally displaced persons (IDPs) as well as ex-combatants, the majority of which are young men and even male children. While we will attempt to address the specificity of each of these target groups in terms of skills issues, it is important also to note that most research and available data look at youth in general. Furthermore, in specific terms the challenges these groups face are similar and have the same root causes of low quality and relevance of education and training, detachment from labour market needs, limited resources and limited active labour market initiatives that address the needs of these groups in particular and youth in general. However, the only main difference is that while youth skills and employability may receive increasing public attention, the needs and challenges of specific vulnerable groups may not receive the appropriate attention or awareness.

Source: El-Ashmawi, 2015b.

2.2.1. Sources of data for the indicators

The suggested indicators build on various data sources. Availability of the data sources depends on the level of development of the statistical infrastructure in general. Development of the infrastructure in order to be able to identify the problems and monitor and evaluate the impacts of the adopted policy should be an integral part of the policy. This also includes the information on skills which often need data in more detail than is available from basic economic and labour market statistics.

The following data sources are often used for skills identification and anticipation. When exploring data availability for skills identification in a particular country a variety of questions across different domains should be asked:

The census

- Does the census include education and labour market information? (occupations, sectors, level and field of education?)
- How relevant is the most recent census data in terms of qualitatively observed changes in the economy since their collection?

The labour force (household) survey

- Is the entire labour force sufficiently covered in the survey? Labour force (household) surveys have potential to capture the informal employment, but they sometimes fail to cover rural populations, remote areas and people who do not live in ordinary households (in institutions, migrants...)
- Are breakdowns of the labour force available by age, gender, education attainment – level/field?
- Are breakdowns of employment by occupation and industry available? What classification are used and what level of detail is available?

PES statistics

- What share/which segment of the job seekers and vacancies do the PES statistics cover and which not?
- What information on vacancies and job seekers is available in the statistics?
- Do the statistics use standard classification of occupations?
- Are the records from individual employment offices merged in one database? Do they use an integrated information system?

Establishment (employer) surveys

- What part of economy does the survey cover (private/public, size of establishments, selected sectors etc.)? Enterprise surveys usually do not cover informal employment and sometimes only cover establishments above a specified minimum number of employees
- Is there a breakdown by sector/region possible?
- What information does the survey provide?
- Share of employers facing skill shortages?
- Hard to fill vacancies/reasons?
- Occupations which are hard to find (skill shortages)?
- Types of skills which the employers cannot find?
- Training needs?

Labour market projections

- Is there a projection of employment by sector/occupation available?
- What breakdowns are available?
- What is the time horizon?
- What data and methods are used (national accounts only or labour force structures as well)? Is it regularly updated?
- Does the projection cover demand side or supply as well?



The data sources are important in this phase as sources of information to identify the important issues. They will however be also essential in the final phases for evaluation of policy impacts. It is therefore worth to ask a **few questions regarding the data availability and quality in general**:

- Is the data source regular? Is its future sustainability assured?
- How long are the time series? Are there significant breaks between series?
- Is the frequency sufficient?
- Are the data national/regional/local? Do they allow such breakdowns?
- Are they economy-wide or sector-specific?
- Are the data available in an appropriate structure to all relevant stakeholders? (e.g. are they published in the necessary breakdowns? Are the microdata sets shared? etc.)
- Are consistent classification of sectors, occupations and education used in the data source? Do they enable comparison across time and across different data sources? Can they be linked to standard international classifications (ISIC, ISCO, ISCED) to enable the international comparison?

If some essential data are missing or insufficient it is worth considering data availability as one of the supportive issues to be solved in the strategy.

2.2.2. Methods of solving data issues

If the data sources do not allow identification of the skills mismatch issues by using the above described indicators, other solutions can be applied.

- Apply qualitative methods based on identification of issues through interviews, discussion and other contacts with stakeholders, experts and target groups. The same can help to interpret, complement and better understand the issues identified through the indicators. The methods may utilize a variety of formats including the following:

In-depth interviews

- In individual interviews there is likely more openness than in a discussion with more partners - assurance of confidentiality is important
- Useful for work with the key players - e.g. large employers
- Useful to identify problematic issues, new trends and have potential to bring information on strategies, emerging occupation, changes in skills requirements

Workshops

- Useful for bringing people together and for knowledge sharing
- Can serve as the basis for development of a longer term platform on cooperation
- Useful to identify new trends, emerging problems and issues and exchange of opinions of different people and institutions
- Can be used for work with various groups, however usually for work with experts or decision makers - it is important to think about the aim of the workshop and define the level at which the workshop operates (managers - high-level, practitioners, academia etc.)

Focus groups

- Obtaining information from a group through facilitated and observed discussion
- Unlike workshops these are not official events aimed primarily on sharing information but more a method used by the researchers to gain the information from the participants, or to clarify / complement the information obtained through other sources, for further analytical work
- Can be useful to get information from practitioners and direct target groups (workers, education institutions, graduates, SMEs etc.)

Delphi (-like) methods

- Expert surveys in two or more rounds in which, in the second and latter rounds of the survey, the results of the previous rounds are given as feedback
- Way to get consensus remotely, prevents negative effects of group communication
- Useful for work e.g. with academics, experts

Scenarios development

- Preparation for potential future challenges, not predictions of what will happen
- Process of thinking about possible future conditions which can use various methods including interviews, delphi etc.
- The scenarios can rarely be constructed only for skills purposes, using this method should be consistent with broader issues used in the identification phase. However if any scenarios are constructed the impact on skills should be part of them

It is hard to overestimate the value of qualitative information for understanding major issues of skills bottlenecks. Statistics and indicators are always likely to leave many questions unanswered. Nearly every type of information can potentially be recruited from the stakeholders involved, but to receive relevant information it may be necessary to interview people working at a more operational level than the general level involved in implementation of the strategy. These may include companies' HR managers, SME managers, PES employees, people responsible for training curricula design. At the same time, key policy and strategy questions have to be addressed to higher level decision makers or related think tanks.

- Conduct a **special employer/establishment survey** to examine skill mismatch issues. Although the employer survey could be an extremely valuable source of information it is a very time consuming and financially demanding solution.



The value added in the context of data availability and results of interviews should be evaluated very cautiously. A few basic recommendations for the realization of an employer skills survey are:

- Consider carefully if information for the whole economy is needed or if a focus only on a few selected sectors is sufficient. The whole economy surveys usually have to stay at a general level of questions and if they should provide sectoral, regional and other breakdowns they require large sample size. The comprehensive coverage of the whole economy is usually very challenging (informal sector, rural areas, SMEs, public vs. private sector etc.). A sector-specific survey can focus on more specific issues in priority sectors. The sector selection goes beyond the skill component and should respect the national priorities and the broader context of the NEPs. From the skills perspective sectors with dynamic trends in employment or those which are influenced by technology changes may be most interesting.
- Keep the questionnaire simple and at 20 minutes maximum. Remember that the survey is a significant burden for the companies; having a short questionnaire can be worthwhile because of higher response rate. Especially when using telephone and not personal interviews keep each question as simple as possible.
- Think of who would be the best person to ask in the company (e.g. executive director, HR manager) and keep the questions at the level which could be answered by this person. Contacting more than one person in a company may not be feasible.
- Avoid questions on detailed structure of employment, especially if they are available from other sources such as labour force surveys. They are very time-consuming and the respondent is usually not able to answer correctly unless s/he looks into the company's HR database.
- Avoid direct questions on future skills demand, especially in terms of expected numbers of vacancies by occupations. The employers rarely have long-term hiring strategies; they are generally not able to answer these questions and even if they provide some responses their reliability had been proven low. Use questions related to business strategies and planned changes in technology and processes instead.
- Use the language of the employers and business; do not use professional jargon which would require definitions.
- It might be useful to cooperate with national agencies in conducting the survey, in some countries you may require an official government letter for employers to take part in the survey.
- Train the interviewers well in advance.

Further information can be found in Corbella and Mane, 2015, forthcoming.

Box 2.10: Examples of basic questions for an employer skills survey


- ▶ Did you have vacancies in the last 3 months?
- ▶ Did you have difficulties filling jobs?
- ▶ Which 5 (10) jobs were the most difficult to fill?
- ▶ What were the reasons for hiring difficulties?
 - lack of available applicants
 - lack of technical competences
 - lack of experience
 - candidates looking for more pay than is offered
 - lack of soft skills
- ▶ Which technical skills did you lack?
- ▶ Which soft skills did you lack?
- ▶ Do you plan to introduce new technology or processes in the next year?

Prepared using: ManpowerGroup, 2012; UKCES, 2012.

Box 2.11: Employer skills needs survey in Cambodia


In 2012 a first employer skills needs survey was realized in Cambodia as part of the preparation for a national employment policy.

It covered six sectors and focused on skill shortages and gaps. It provided input into designing a necessary skills policy as well as a national employment strategy, provided labour market information for employment counseling and guidance and set some baselines for further studies and development of future skills anticipation. The process also revealed a number of difficulties which can serve as lessons learnt for implementation of a new employer skills survey in other countries:

- ▶ Coverage: large share of informal sector, many companies are not registered and thus their records are unavailable.
- ▶ Sampling frame: lack of updated list of establishments.
- ▶ Response rate: lack of cooperation from employers, low rate of response.
- ▶ Questionnaire design: lack of previous information or guide to help in designing appropriate questionnaire. Difficult to adapt questionnaires from developed countries to the Cambodian context due to different structure of economy, technology, education, policy goals/purposes, etc. These pose problems during data collection and analysis.
- ▶ Terminology: confusion around definitions of key terms, e.g. skill, skill shortage, skill gap, etc. resulting in difficulties in designing questionnaire and measurement.
- ▶ Classifications: occupation (ISCO), industry (ISIC) and education standard classification (ISCED) are not widely used and understood.
- ▶ Capacity: limited capacity to manage the survey and analyse the data (especially questionnaire design, sampling procedure with limited information, quality control, data storage, and analysis).
- ▶ Resources: lack of financial and human resources to conduct the survey on a regular basis so as to keep relevant information up to date with the fast changing structure of economy.

Source: Choeun, 2013.



2.2.3. The informal sector

In an ideal world we would like to have the data and indicators which describe the skills related issues in the whole labour market in a valid and reliable way. In most developing countries a significant barrier to that is a large share of employment in the informal sector as well as a large share of informal employment in the formal sector. To describe the skills supply and demand the analysis cannot rely solely on official statistics, but needs to look for ways to identify the problems in the informal sector which is not fully described in the official statistics.

There is no easy solution to this problem and development of the methodology often requires creativity and adjustments of methods to the country specific situation. The following methods can usually be used to gather some information on skill supply and demand in the informal sector although it can never be said that full systematic information is available:

- Various macroeconomic methodologies to estimate the extent of the informal sector and employment have been developed. They are built on relations between the output, international trade, employment and labour productivity. They may also use other variables such as energy consumption etc.
- Labour force surveys which are conducted according to international methodologies are household surveys and they use a set of questions leading to an ILO standard definition of the economic activity. This is not based on a formal employment contract but on actual performance of work. If the survey is implemented in a way which ensures confidentiality to the respondent it is likely that it covers most of the informal employment of people living in the households.
- In establishment surveys the informal sector can be covered if the sampling does not rely on official registers only. Researchers in different countries applied many innovative methods on how to locate the businesses, ranging from the use of yellow pages and random walk sampling methods, to attempts to identify employers through the data provided by employees in household surveys, and identification of addresses with higher electricity consumption. It has to be recognized however that companies are always to some extent reluctant to provide information on informal employment because of the threat of legal consequences.
- Qualitative methods are sometimes the only way to get information on skills supply and demand in the informal sector and employment. They may not have the capacity to provide precise estimates of their size but they can be very informative with regards to the problems experienced in this sector. The qualitative approaches may use the whole spectrum methods described above such as consultation with expert and interviews and focus groups with companies and workers.

More details on measurement of informal economy and employment are provided in the ILO publication *Measuring informality: A statistical manual on the informal sector and informal employment* (ILO, 2013b) and the ETF-Cedefop-ILO Guide on establishment skills surveys (Corbella and Mane, 2015, forthcoming).

2.3. Institutional and legislative framework

A description of the institutional framework can help to determine if all the relevant stakeholders are participating in the strategy formulation process. The analyses of the institutional framework should however also reveal the mechanisms of cooperation between different institutions and the potential capacity of different institutions to implement the strategy.

The responsibility of skills governance is divided in particular between the ministry in charge of employment and ministry(ies) in charge of different types of education and training, with possible involvement of other governmental and non-governmental bodies. Mechanisms of cooperation between these ministries, inter-ministerial or supra-ministerial bodies and councils are therefore of particular interest. The legislative and strategic documents collected during the stock-taking phase should be analysed to reveal the legislative framework of the processes and mandates of the institutions.

The following questions should be asked during the analysis of institutional framework:

- Who is responsible for different types of education and training? (see Box 1.1 to check coverage of all pillars of education and training).
- How is the responsibility for education and training shared between the public and private sector?
- What is the legislative framework of different types of education? Which laws cover them, how are they interlinked?
- How are the curricula developed and maintained? Do the occupational standards and/or national qualifications framework exist? If so, who is responsible for their development, updating and implementation?
- Are there any legislative tools enabling validation and recognition of non-formal learning?
- Do public employment services exist? Are they under the Ministry of Labour or independent?
- Does the active labour market policy include measures for better skills matching? How are they used in reality?

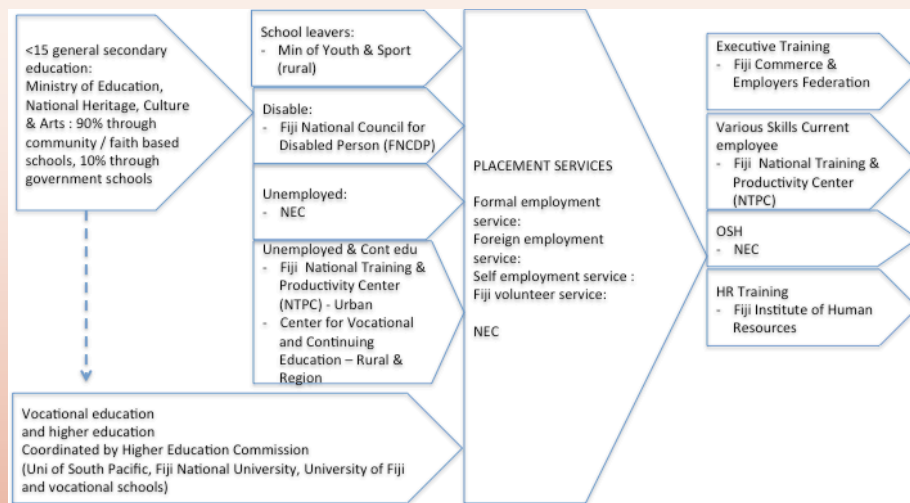


- Are there any multi-stakeholder institutions, bodies or platforms which address the issue of relevance of education and training (particularly TVET) to labour market needs through social dialogue? What is their institutional arrangement, how are they financed and what mechanisms do they have to influence relevance of skills delivery?
- What is the capacity of different institutions for providing and analysing data on skills?
- What types of skills identification and development issues can be governed at the national level and which would require regional measures, depending on the governance of the educational and training system and structures of employment services?
- Does a system of early identification of skill needs exist? Who is responsible and what outcomes are available?
- How is the education and training system financed? Do employers contribute through levies or other mechanisms?
- How is the system for education, training and employment monitored and evaluated?



Box 2.12: Skills related institutional mapping along employment supply chain in Fiji

The institutional analysis in Fiji was presented through a visualization of employment supply chain. This was supported by a description of each implementing institution, the services they provide (institutional or individual level), focus and their target group.



Source: Gunawan, 2014 (unpublished).

Institution	Institutional services	Sector of operation / focus	Age, sex and other profiles of individual clients and related services
Government			
- National Employment Centre - with 8 centres covering central & eastern (2), western (4) and northern (2) regions	All sizes, formal companies, upon request	All sectors. Risk Engineering Unit is dedicated to occupational health and safety implementation in engineering and capital projects	-All age (15+), M/F, unemployed & underemployed (including school leavers) registration, assessment, skills training & placement for formal & foreign employment services - All age (15+), M/F, if it is not accepted in formal employment, they will be offered self-employment service - Retired (55+), M/F, skilled, placement for Fiji volunteer service

Source: Gunawan, 2014 (unpublished).

The process of analysing the legislative and institutional framework should be realized through analyses of relevant documents as well as through direct consultation of relevant institutions and their workers at the governance as well as operational level. It should not focus only on the state of the art as officially defined, but should also provide:

- qualitative information on general practices;
- problems which the institutions face in their work;
- identification of gaps in the legislation and institutional framework;
- identification of overlap (or potential overlap) of responsibilities of different institutions and regulations;
- the likely future development of all the above mentioned areas according to the information from strategies and plans.



Chapter 3. Formulation phase

In the next phase the identified issues are prioritized and transformed into a set of objectives. From the skills perspective, the following points have to be taken into account during the formulation phase:



Checklist 3

- ☐ Are all pillars of education and training covered?
- ☐ Are the skills related objectives and measures relevant for the identified issues?
- ☐ Has the linkage of the goals to legislation and other strategies been considered, including education, skills and human resource development strategies?
- ☐ Do the constituents have the capabilities they need to formulate the strategy (including issues relevant to skills)?



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Are all pillars of education and training covered?

Skills can be developed through formal education, training delivered by (or through) public employment services but also through private training in enterprises or for individuals. Skills development is relevant for children and young people as well as for the adult population. In accordance with the previously identified issues and priorities, objectives of all relevant aspects of education and training should be formulated. Check Box 1.1 for different types of education.

In the context of employment policy the primary focus of skills development objectives is education and training for employability on the labour market. It is therefore likely to be the case that many objectives related to skills will touch upon TVET, higher education, workplace learning, active labour market policy measures, etc. However, various aspects of education and training systems have high degree of interdependence: for instance, it would be naïve to expect to resolve a skill shortage problem for technicians with at least upper secondary educational attainment level, if not enough people complete compulsory level of education. Furthermore, if you want TVET or university graduates to master language or other employability skills, this needs to be embedded as early on in their education as possible. Permeability of the system and root causes of skill shortages have to be addressed, and therefore the formulation phase is likely to address all aspects of the education and training system.

Are the skills related objectives relevant for the identified issues?

Even if using the above mentioned skills related indicators there can be some issues which seem to be related to skills but have different root causes. In most cases there are multiple causes of one identified problem and therefore various types of measures should be used to solve them. Skills development is the first-hand option which comes to the table when talking about solving the mismatch between labour supply and demand. It may however not be enough, it is important to integrate more measures to solve one problem. The following scheme can be used to identify causes of imbalances between labour supply and demand and relevant skills policies and measures.

Capabilities of constituents

- Capacity building and training may be needed already during the formulation phase which is particularly important for cross-cutting issues such as skills (indicators of mismatch, identification and anticipation of skills, lifelong learning systems etc.). A common background knowledge on skills issues may help to facilitate the process of implementation.



- A useful way to work during the formulation phase is to prepare a “kick-off” version of the strategy in a small team based on the results of the issue identification phase. It can be used as a starting point for the discussion within a broader group of constituents at subsequent meetings and workshops.
- To insure buy-in from the start, it is vital to include representatives from all relevant and key stakeholders from the start in the formulation phase, even if they were consulted in the preparation phase.

What is the linkage of the goals to legislation and other strategies?

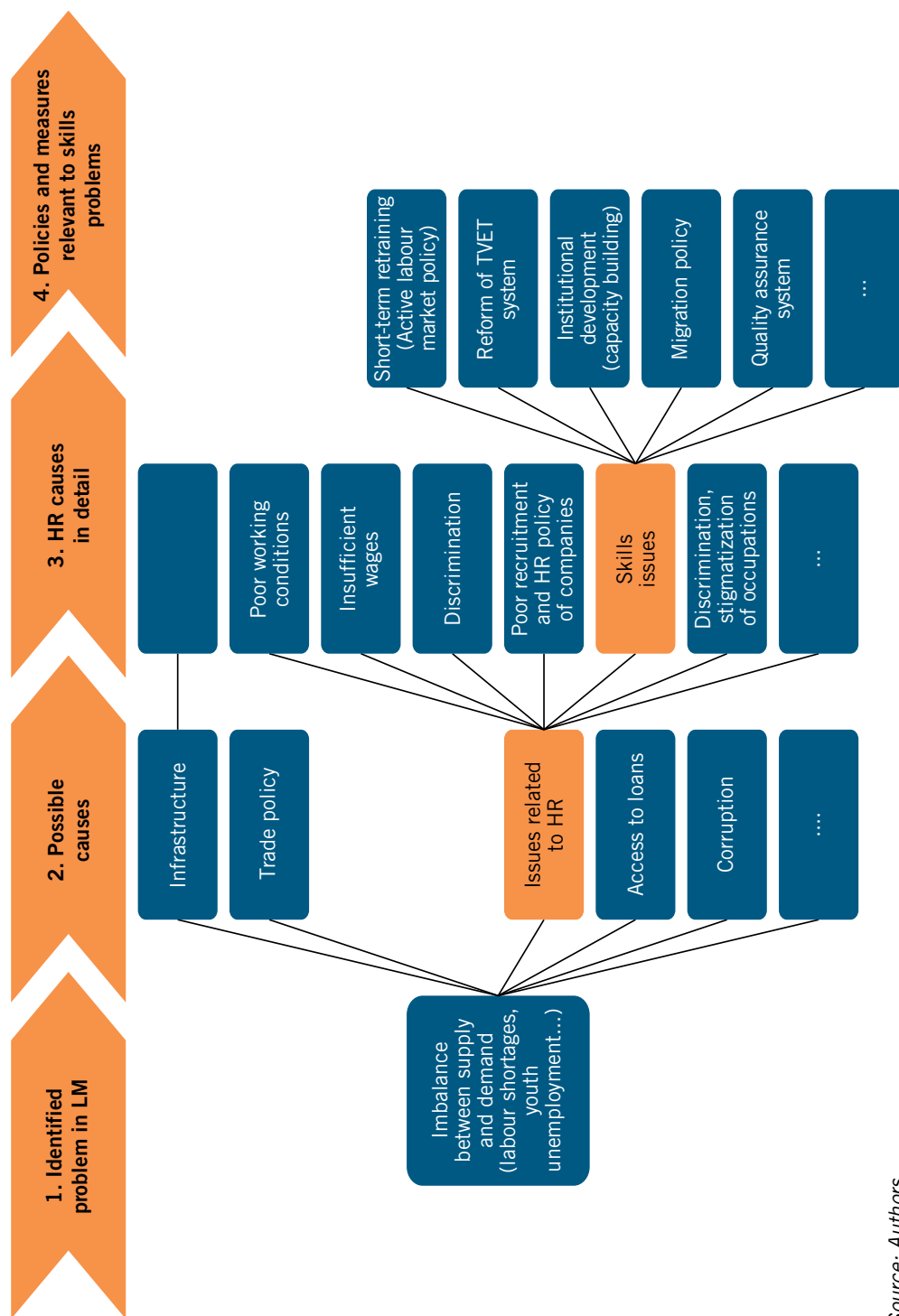
As there are multiple causes of problems it is recommendable that not only different measures in the strategy or policy are adopted, but also different policy documents deal with the same problem. This is inevitable and also recommendable. During the formulation phase it is therefore essential to examine if and how the topics which the strategy covers are treated in other strategies and in the legislation. The key questions are:

- Are the objectives in line with other strategies adopted in country (development strategies, fiscal strategy, education strategy, industrial policies etc.)?
- Are there any barriers or gaps in current legislation to implement the strategy or what substantial changes would it require?
- Is there clarity among stakeholders regarding who is responsible for aligning these policies and strategies? And are they willing to support this process?

The formulated employment policy can be linked to other policies and strategies e.g. through:

- Being formulated at the same time and consistently (e.g. employment strategy and vocational education and training (VET) strategy);
- Building on more general documents such as development plans and dealing with selected topics in more detail;
- Looking for complementary solutions to the same problems (e.g. with relation to industrial policies);
- Contributing to formulation of other strategies (e.g. relations between education policy and employment policy);
- Merging different strategies developed previously by different bodies or ministries to be more comprehensive and guarantee buy-in by all parties.

Figure 3.1: Labour market imbalance – skill-related and other causes and relevant measures



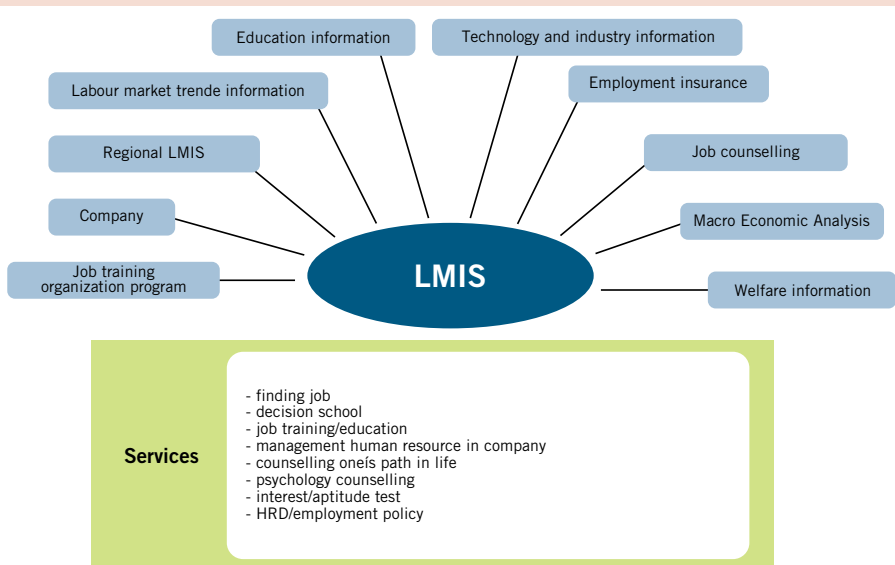
Source: Authors.



Box 3.1: Reducing skills mismatch through information provision – Korea

Skills mismatch can be reduced, not only by changes in the education policy but also by information provision. This approach is in the background of all skills anticipation activities. Skills mismatch can be perceived as a labour market imperfection, the result of a lack of information about skills demand and supply. If these are delivered in a timely and appropriate way to the actors in the labour market (workers, companies, students etc.), they will react on them and the matching will improve.

“The Labour Market Information System (LMIS) is among the most important infrastructure tools to create jobs and increase employment through effective job matching. Korea introduced the PES back in the 1980s, but it was of limited value to the public because the quality of labour market information was so poor. However, since the Asian financial shock, the Korean government has been investing huge budgets in the PES, and it has played a huge role in the fight against unemployment by providing efficient matching between jobseekers and companies. The LMIS and the PES together have contributed to the high employment performance. In the PES, all job centres are networked via the central information centre, in which all information about jobs and jobseekers is gathered, classified, and analysed. The properly classified information is, in return, provided both to local branches and to the public off and on-line, free of charge. Private job-related agencies also may use this information. Thousands of private job placement agencies are running in Korea, usually focusing on a specific target group (e.g. youth, women or temporary workers) or specific occupations (e.g. construction, household services). There are also many private companies providing job information. These are businesses providing job information through newspapers, magazines and other publications or wired/wireless broadcasting and computer communications. The development of information and communication technology had led to an increase in the number of companies providing job information through the Internet. A distinction is drawn between companies which provide employment placement services, job placement businesses, and those which only offer a job information service online, or job information providers. On-line job information providers are of several types, ranging from specialized job information website construction to additional services through internet portals or the media. In this way, the PES and private employment service complement each other.”



Source: Kang and Uh, 2013.

Source: Kang, 2014.

Box 3.2: Coordination across ministries for human resources training in Argentina



In late 2011, the Ministry of Labour launched the Strategic Plan for Vocational Education and Training: Innovation and Employment - Argentina 2020, which is geared to the training of human resources in order to increase the country's competitiveness, incorporating the use of technology and universal access thereto. This plan attempts to improve, strengthen and promote the Ministry of Labour's training measures in order to increase their supply, develop the industry, and increase the competitiveness of different sectors of the economy. To meet these goals, it was necessary to coordinate this strategic plan with the measures of other ministries related to labour issues already underway. Along these lines, in 2012, an introductory meeting on the Strategic Plan for Vocational Education and Training was held, in which representatives of the Ministry of Industry took part. A second meeting also included representatives of the Ministry of Science, Technology and Productive Innovation. Both meetings included representatives of business and labour, with technical support from the ILO. The aim of the meetings was to introduce and share the main items of the vocational education and training agenda in the framework of the plan's overriding goals. While for the time being these have been ad hoc encounters to share the strategies of different areas of government, they have demonstrated that the relevant actors feel the need for, and have an interest in, improving the coordination of the measures planned and carried out by the government.

Source: Bertranou, 2014.

Box 3.3: National Employment Strategy Meeting in Korea



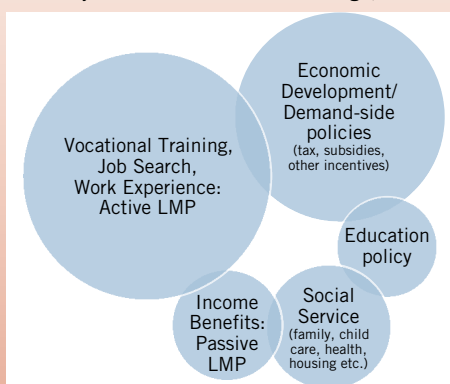
The Korean Government also established high level meetings to strengthen employment policy coordination. In 2010, the National Employment Strategy Meeting was established under the chairmanship of the President in order to deploy a coherent government-wide national employment strategy. The President presided directly over the National Employment Strategy Meeting, and members of the meeting consisted of heads of each government ministry, political parties, and related government institutions, such as the Bank of Korea and the National Economic Advisory Team, as well as senior presidential secretaries, such as the Chief Presidential Secretary for Policy Coordination, Chief Secretary for National Policy Planning, etc. For each agenda, there were broad participants from related fields, including the heads of research institutes, academics and professional experts.

The goal of this meeting was to:

- (i) reorganize existing policies and systems to make them employment-friendly, meaning that they enable the maximum increase in the total number of jobs within a sustainable range;
- (ii) resolve the quantitative and qualitative mismatch in labour demand and supply through the development of skilled workers that meet the needs of industries; and
- (iii) pursue restructuring for the promotion of labour market efficiency and job stability.

The meeting was originally planned to operate for a limited period of one year, but was continued until the end of the previous government, although not on a regular basis.

Source: Kang, 2014.



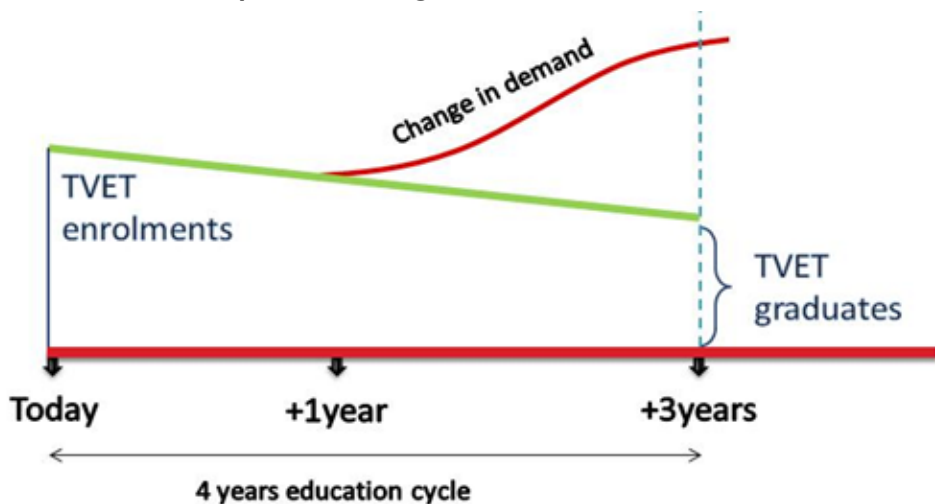


Policy cycles of employment and education strategies

A direct linkage of objectives between a more general strategy (e.g. employment policy) and a specific skills development strategy may be useful and may help during the implementation phase. A skills strategy has the potential to become a bridge between employment and education policies. Why such a bridge or linkage is necessary is obvious when we look at the policy cycle of employment and education policies in the context of following example.

The following chart shows that it takes at least four years before any change in the formal education system has its impact in the labour market. This process is even longer if we need to implement changes at earlier stages of education (at the primary and lower secondary level where the employment policy may have targets of higher inclusion, lower dropouts or development of basics for further learning opportunities, such as increasing literacy, more emphasis on STEM subjects or foreign languages etc.).

Figure 3.2:
Time needed to implement changes in formal education



Source: ILO, 2015.

Some employment strategies only include the VET or development of adult skills and do not cover other parts of the education system which in the context of the policy cycle. This may be a reasonable solution that enables some action and changes. It is however necessary to keep in mind that the employment policy is not a one-off exercise. The future workforce with which the employment policy will deal at some point in the future is the one whose skills are being developed now. Although these strategies have other time horizons and cover different segments they should be coherent in the longer term outcomes and the employment policy needs to have some influence on the education policy. This is why the skills development strategy are sometimes developed as a bridge between

education policy which influences the skills of the labour force in the long-term and the employment policy which is more focused on development of the skills of the current workforce to support their decent employment. The length of the education policy cycle is also one of the reasons for the development of a system of early identification of skills needs (ILO, 2015).

Box 3.4: Linking NEPs with skills strategies in Cambodia



In Cambodia, national skills development strategy formulation and NEP formulation processes go hand in hand. One of the four main priorities of the **Cambodian National Employment Policy** is as follows: “The Cambodian workforce is equipped with skills for improved productivity, sustainable and inclusive growth”. It includes, among others, the following proposed topics which are further elaborated into specific objectives:

- ▶ Enhancing educational attainment of the population and foundational skills for future learning
- ▶ Improve the quality of TVET
- ▶ Improve relevance of education and training to labour market needs
- ▶ Implement and strengthen the LMIS and TVET-MIS (Management Information System)

These topics and objectives are likely to become the basis for the structure of a separate national skills development strategy with the view of their further elaboration and operationalization.

The **Skills for Employment Policy Brief “Formulating a national policy on skills development”** provides other examples of how the national skills policies may be linked with employment policies and other strategies. It also provides information on the principles of skills development policies, skills challenges and the process of development skills strategies. It can be found at http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_167172.pdf.

In Sri Lanka the employment and skills strategy is directly linked in the **National Human Resources and Employment Policy for Sri Lanka (NHREP)** which was adopted in 2012 with a 10-year horizon. It builds on the overall policy framework articulated in the Mahinda Chintana Vision for the Future. The NHREP recognizes that employment needs to be treated both through decent jobs creation as well as through the development of “highly competent, globally competitive, multiskilled and productive workers”. The NHREP addresses both education and employment challenges and takes sector-focused approaches to employment creation. All topics of the NHREP cover:

- ▶ Education and training
- ▶ Enhancing employability of youth
- ▶ Science, technology and innovation
- ▶ Sectoral policies (see Box 8.1)
- ▶ Informal employment
- ▶ Small and medium-sized Enterprises
- ▶ Foreign employment
- ▶ Public service employment
- ▶ Mainstreaming gender
- ▶ Labour market information and employment services
- ▶ Wages
- ▶ Social protection

The skills topic of the strategy covers objectives for all levels and forms of education and training (school education, higher and professional education, vocational skills and employability) as well as career guidance and counselling.

Sources: ILO, 2011b; Secretariat of Senior Ministries, 2012.



Chapter 4.

Validation, adoption and communication phase



Checklist 4

- ☐ Have the objectives been consulted with all partners defined in Phase 1?
 - ▶ Have the education and skills providers, both public and private, been involved?
- ☐ Have the findings (identified issues and related objectives) been explained properly? Is the process transparent and understandable for all partners?
- ☐ Has the policy been given an executive force? Do the relevant actors take responsibility for the strategy, is the ownership clear?
 - ▶ From the skills perspective recognition by ministries in charge of different education and training, including line ministries, is critical (see Box 1.1) and existing tripartite bodies (National HRD Council, sector skills councils).

In this phase the inclusion of skills does not bring many specific issues to the general process of policy formulation. It can be just emphasized that broad and deep consultation of the policy with the social partners in this phase is a key factor of successful implementation of the policy. From the skills perspective this includes various governmental bodies, employers and unions, also representatives of education and training providers both from the public and private sector. As they are the main institutions who will take action in development of skills of the population (regardless of who finances it) their direct involvement in the validation and adoption phase is crucial.

The consultations can be realized through various forms such as written distance commenting, round tables, thematic focus groups, expert workshops, stakeholder meetings and regional meetings. Transparency and documentation of the process and clear communication of the results of the discussion is substantial.



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Chapter 5. Programming and budgeting phase



Checklist 5

- ☐ Do formulated objectives clearly define the following?
 - ▶ the target group
 - ▶ measures
 - ▶ institutional responsibility (leading partner and stakeholders involved)
 - stakeholders responsible for skills identification and development share responsibility for objectives which influence them
 - ▶ budget
 - ▶ timeframe
- ☐ Are indicators for monitoring and evaluation of performance and impact defined?
 - ▶ Are the skills related indicators included?

Similarly to the previous phase the skills relevant issues in the programming and budgeting phase have to be treated as an integral part of the policies and the general implementation. It is worth noting that even when the ministry in charge of employment may have the main responsibility for the whole policy, there may be reasons for giving the responsibility for skills related objectives and measures to other partners such as the ministry in charge of education or even non-governmental bodies. The responsibilities and related budgets have to be clearly defined.



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Box 5.1: Irish skills strategy and action plan

In Ireland two related policy documents for increasing employment have been introduced recently: *Pathways to work* (2012) and a yearly *Action Plan for Jobs*, first prepared in 2012 and then in 2013. The responsibility for the documents is at the governmental level, both have been signed by the Irish Prime Minister (Taoiseach). *Pathways to work* has a longer-term strategic orientation and the main responsibility lies with the Ministry for Social Protection and the Ministry for Education and Skills. The *Action Plan for Jobs* introduces shorter-term actions. The main responsibility for the whole plan lies with the Ministry for Jobs, Enterprise and Innovation. Both documents reflect on each other, the *Action Plan* for 2013 includes among other items the actions rolled out by the *Pathways to Work* initiative. The *Action Plan* includes an annex with detailed tables of actions defining deadlines and institutional responsibilities. Some components, and the skills related actions in particular, are more the responsibility of Ministry of Education or other institutions rather than the Ministry for Jobs, Enterprise and Innovation.

Example of selected objective and actions: Aligning our education and training system with labour market needs is critical to the creation of job opportunities in Ireland

128 Progress a review of the Apprenticeship Training Model through consultation with key stakeholders on options for change

Steps necessary for delivery	Timeline	Responsible body
Progress review of the Apprenticeship Training Model	Ongoing	Department of Education and Skills (DES)
Confirm arrangements for consultative phase of review	Q1	DES
Prepare interim report arising from consultation	Q4	DES

129 Provide 6,500 education and training places for the long-term unemployed under the Momentum Programme; monitor implementation of programme to ensure achievement of objectives

Steps necessary for delivery	Timeline	Responsible body
Provide up to 6,500 education and training places for the long-term unemployed through the Momentum Programme	Q1	Irish National Training and Employment Authority (FAS)
Monitor implementation of programme to ensure achievement of objectives	Ongoing	FAS, DES

130 Continue to implement the pilot ManagementWorks project providing a range of training and development programmes to help SMEs to improve their performance through seeking to build their managerial capability; evaluate pilot to ascertain strengths and weaknesses

Steps necessary for delivery	Timeline	Responsible body
Complete pilot of ManagementWorks project	Q2	Skillnets (enterprise-led training networks)
Commission independent evaluation of programme to assess impact and determine future direction	Q3	Skillnets

Source: Government of Ireland, 2012 and 2013. Note: Q – quarter of the year.



5.1. Indicators for monitoring and evaluation

Several indicators were introduced in Phase 2 for identification of opportunities and constraints related to skills. These can in general be used to assess the impact of the objectives. However due to the lag with which the measures may influence these impact indicators, another set of indicators have to be included for monitoring and evaluation during the implementation phase and for early evaluation after the end of the time frame.



Box 5.2:

Existing guiding tools on monitoring and evaluation of skills policies and programmes

“Evalsed is an online resource providing guidance on the evaluation of socio-economic development. While Evalsed has a specific focus on evaluation in EU cohesion policy, it is also relevant to the evaluation of other socio-economic development tools. Evalsed consists of two parts: THE GUIDE and a SOURCEBOOK. The GUIDE is designed primarily for decision-makers - specifically those who design and manage evaluations to enhance decision making on socio-economic development policies. It defines the role of evaluation in socio-economic development, discusses various ways to develop evaluation capacity and elaborates on evaluation approaches as well as providing guidance on how to design and implement evaluations and how to ensure their quality. The SOURCEBOOK on evaluation methods and techniques is of particular interest to practitioners and those wishing to impart or acquire evaluation skills.” (Source: European Commission, 2013 (p. 1). The Guide is not skill specific and does not provide information on specific skills indicators, but provides thorough and practical guidance for the entire evaluation process and introduces methods and techniques which can be used to gain the information for evaluation.

Skills Development Impact Evaluation. A practical guide. *ILO/Cinterfor, 2011*. A tool that offers a set of key concepts, practical issues and lessons learnt that can be used to incorporate impact evaluation into the training activities undertaken by institutions and organizations. It does not cover evaluation of all skills policies aspects but focuses on skills development. However it also provides good and practical information on general aspects of skill policies evaluation – its purpose, concepts, actors, tools and processes. The Guide is oriented to all actors involved in decision-making, designing, implementing and evaluations of skills development policies by governments, training institutions and enterprises of all sizes in the member countries of ILO/Cinterfor. (Source: ILO/Cinterfor, 2011).

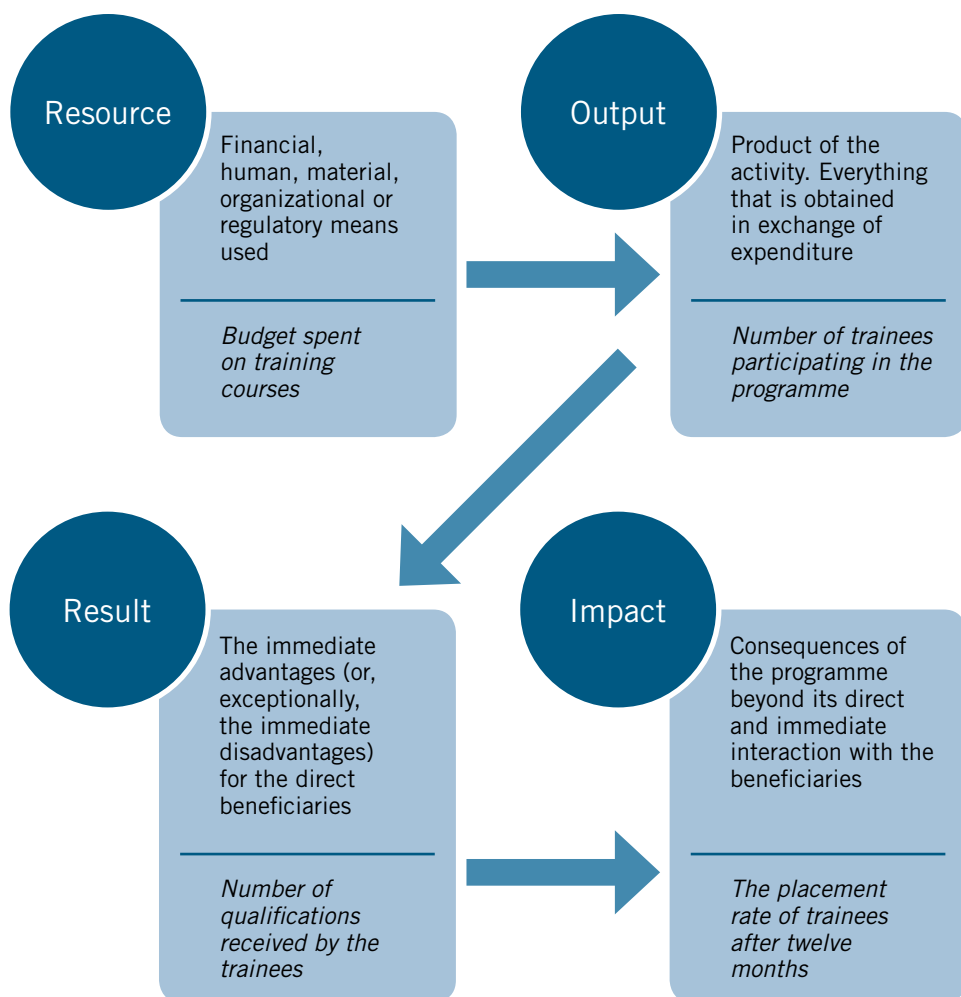
The indicators should be chosen and constructed in a way that they inform their users in the best possible and easiest form about the process, results and impact of the policy. The EVALSED guide suggests the following preferable characteristics of the indicators used in evaluation:

- The indicator definition is closely linked to a policy objective.
- The indicator is measured regularly.
- Steps are taken to ensure data gathered is reliable.
- A good indicator should provide simple information that both the supplier and the user can easily communicate and understand.

It also points out that “(...) all indicators are not useful at all levels. On the contrary, it is generally accepted that each actor requires an operating report with a small number of indicators, selected as the most relevant in relation to the nature of the decisions that have to be made. It has been shown that in a situation of decision-making, a person cannot take into account more than about ten indicators at once. When there are too many indicators decision-makers are swamped with an excess of information” (European Commission, 2013).

The following scheme defines four types of indicators in relation to evaluation criteria and provides examples of indicators related to skills delivery.

Figure 5.1:
Indicators for evaluation



Source: Authors' scheme based on information from EVALSED Guide (European Commission, 2013).



Chapter 6. Implementation phase



Checklist 6

- ☐ Do the responsible actors realize the agreed steps to implement the policy?
 - ▶ Does this include measures related to HR and skills?
 - ▶ Are the agreed measures implemented consistently across objectives and responsible actors?
- ☐ Have the responsible actors the capabilities for a successful implementation of the policy?



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During the implementation phase the objectives of the policy have to be internalized by the actors, the cooperation mechanisms and platforms and the monitoring process has to be established.

Depending on the established objectives the necessity of capacity building in certain areas in the responsible institutions and stakeholders may be involved. From the skills perspective these may include:

- Capacities to conduct field (sample) surveys and analyse data for informing education and training on labour market needs;
- Capacities for providing other forms of education and training than standard formal initial education in schools – such as workplace learning and in particular apprenticeship training, adult education, training for people with disabilities;
- Communication, negotiation and facilitation skills to ensure communication of the policy to different target groups;
- Project management skills;
- Language skills to eliminate barriers to using experience from other countries.

The ILO usually plays a role during the preparation and formulation phases; it so far has been involved in the implementation phase only if there was a follow-up technical assistance project. When it comes to skills development such technical assistance projects are mostly targeting TVET reform strategy or specific sector- or occupation-related skills development projects, linked or not to the national employment policy (see example in Box 6.1).

Box 6.1: The TVET Reform Project in Bangladesh

The TVET Reform Project in Bangladesh is an initiative of the Government of Bangladesh, assisted by the ILO and funded by the European Union. The goal is to ensure Bangladesh's competitiveness in the global market and reduce poverty by improving the quality of vocational educational and training.

The ILO assisted in all phases of the project, including formulation of the national skills development policy and in its implementation in the area of TVET quality, relevance to labour market, development of linkages between TVET institutions and industry and enhancing labour market participation, social inclusion and empowerment of disadvantaged groups in TVET.

Source: http://www.ilo.org/dhaka/Whatwedo/Projects/WCMS_106485/lang--en/index.htm





Chapter 7. Monitoring and evaluation phase



Checklist 7

- ☐ Are the monitoring and evaluation mechanisms being realized?
 - ▶ Do they include evaluation of objectives and measures related to skills?
 - ▶ Is the implementation of the policy being evaluated in the context of other policies and strategies including the skills and educational policy?
- ☐ Are the interim results of monitoring and evaluation reflected in the process of implementation?
- ☐ Is there a follow-up process after the policy is formulated and discussed among the stakeholders?

The monitoring and evaluation process should be an integral part of the whole process. After the implementation the ex-post evaluation should follow. Indicators as well as other qualitative methods suggested in Chapters 2 and 5 can be used for evaluation of impact on skills. The evaluation of impact as well as the experience from the process should be used for the next, or follow-up, strategy.



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Chapter 8.

Issues specific to inclusion of skills in analyses and policies at the sectoral level



Checklist 8

- ☐ Does the sector selection concern the change in demand on skills?
- ☐ Does the sectoral policy include topics related to skills demand and supply?
- ☐ Are the national data relevant to skills utilized at the sectoral level to a sufficient extent?
- ☐ Are the sector-specific data and information being utilized?

In addition to analyses and policies at the national level the skills are an important aspect of the analytical and policy formulation process at the level of individual sectors.¹ Although many aspects described in the previous chapters may be useful for both these levels the sectoral analysis and policies set some specific conditions for inclusion of skills. The objective of this chapter is to provide guidance at least in the most important of them.



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¹ Similarly, the regional or local levels of analysis have their specifics in terms of data availability as well as methods, stakeholder involvement and measures applicability. Although activities on these levels are undoubtedly important, this publication however focuses on the national level.

8.1. Skills integration into sectoral policies and analysis

The sectoral and industrial policies are hardly ever self-standing strategies. They need to be developed in the framework of a broader national development, macroeconomic and trade policy. They also often deal with the topics of supply of labour for the sector and therefore they are inevitably linked to employment, education, human resources, and skills policies, as well as local and regional development policy. The strength of linkages to these strategies at the national level differs, but there are also examples of approaches where the sectoral policies are an integral part of employment policy (see Box 8.1).

Box 8.1:

Sectoral policies in the framework of the National Human Resources and Employment Policy for Sri Lanka



The sectoral policies are an integrated part of the National Human Resources and Employment Policy for Sri Lanka (NHREP). It recognizes that incentive policies are currently in place to promote value added industries but a system of “employment impact assessment” should also be developed and employment should be one of the criteria for granting incentives such as tax concessions. The NHREP develops specific policies for nine selected sectors and it links the employment policies in these sectors both to the general HR and employment policies and to more general sectoral policies and strategies which are already under implementation. The selected sectors include:

- ▶ Agriculture
- ▶ Manufacturing
- ▶ Tourism
- ▶ ICT and business process outsourcing
- ▶ Health services
- ▶ Ports and shipping
- ▶ Environment friendly (green) jobs
- ▶ Infrastructure
- ▶ Performing arts, music and creative industries

Source: Secretariat for Senior Ministries, 2012.

Value chain analysis and development is one of the approaches which is very characteristic and useful for the sectoral analysis. It is also widely used in ILO activities (see Box 8.2).

The value chain is a representation of processes leading to development of goods and services from the raw materials to the final products. The skills should be included in the value chain analysis and development. Skills development and education are one of the supporting factors of the value chain and the value chain analysis can also bring important findings about current and future skills needs. Therefore the inclusion of skills into the value chain analysis and development should:

- Assess if the skills of the workforce are an obstacle for maintaining the current position in the value chain and/or for moving up to a more value added part;



- Assess the potential of the workforce to contribute to a desirable shift in the value chain;
- Define which skills are needed according to the position of the industry in the global value chain and its development and where are the current and potential skill gaps;
- Evaluate similarities in skills across sectors which could provide or absorb the skilled workforce in case of development of the value chain;
- Analyse the geographic locations of skills needed according to the locations of the value chain.



Box 8.2: ILO's approach to value chain development

The guide on Value Chain Development for Decent Work (ILO, 2009) argues that “Value chain research and analysis ... needs to go beyond ... understanding of core transactions within the chain: it needs to identify the underlying systemic causes of bottlenecks in the chain; it needs to understand the nature of relationships between businesses in the chain and other relevant market players; it needs to understand the role of specific market functions and (formal and informal) rules that govern the value chain; and it needs to identify incentives and capacities of market players.”

The approach described in the guide includes all phases of a project of value chain development from sector selection, project setup through value chain mapping, research and analysis up to development of a vision for sustainable decent work outcomes and monitoring and evaluation of the value chain development.

Source: ILO, 2009.

8.2. Sector selection


In general these guidelines presume that the skills are included in a broader sectoral analysis and that the sector selection is led by its more general context and objectives. These may include technical, geographic, stakeholder engagement and other criteria. However, where sectors of interest are not yet defined skills-related arguments should be taken into account during the sector selection. The sectors particularly interested from the skills perspective are:

Sectors with growing trends in employment

Sectors with growing employment will need more workers with appropriate skills. They will demand them from the education system, but there is also the possibility of retraining people coming from other sectors.

Sectors adopting new technologies or innovative processes

Changes in technology and processes require people with different or completely new skills. They will change both the occupational structure of the sector as well



as the required competencies per se. As the technology is driven by the global research it is important that the sectoral analysis focuses not only at the national level but follows global trends in sectors as well.

Sectors that may contribute to economic diversification

Economic diversification is imperative for economic growth and employment creation. A balanced distribution of national goods and services among economic activities provides a necessary resilience to external events, market downturns and falls in commodity prices. It is thus important for sustainable economic and employment growth over the long term. Skills availability is vital for tapping on new investment opportunities and economic diversification.

Sectors oriented on export

As the ILO's Skills for Trade and Economic Diversification (STED) argues the exporters tend to be larger, more productive and employing more highly-skilled people compared to other companies (Gregg et al., 2012). Sectors with higher share of export will therefore have more impact on changes in skills demand.

Sectors with imbalanced age structure of employment

These can include sectors with a high share of young people as well as sectors with a high share of older workers but for different reasons. Sector with a high share of older workers indicate that there will be a significant replacement demand in coming years. People with skills relevant to this sector will be demanded even if the employment in the sector is, in general, decreasing. On the other hand sectors with a high share of young people prove the attractiveness and potential, which may need further examination and potential response of the education and training system.

Sectors with high proportion of migrant workers / sectors suffering from outflow of workers

High migration to or from the sector may indicate an imbalance in the national labour market which can also be due to skills. An inflow of foreign employment could be the signal of a lack of local workforce (may be influenced by working conditions but also lack of skilled workers in the local labour market). The outflow provides other signals of skills mismatches. It may be also an indication of non-competitive wages or poor working conditions offered by sector's employers. It can be also caused by mismatches in other countries which tempt people to move.



Skill-intensive sectors with a higher share of TVET level skills

In sectors with a higher share of TVET there is a high potential of ILO's contribution due to the agency's experience in support of TVET. The sectors where the quality and relevance of skills at this level is important to the sector's competitiveness in international trade are of particular interest.

The sector is often selected according to a combination of various criteria. In any case it is highly recommendable to **define the sector for analyses in a way consistent with classification of economic sectors**, either the international (ISIC) or a national statistical classification. This will ensure full possibility to use all the statistics available for the purpose of sectoral analysis.



Box 8.3: The South African New Growth Path is focused on sectors

The New Growth Path (NGP), driven by the Economic Development Department "(...) sets the target of creating five million jobs over the next 10 years, by identifying strategies that will enable South Africa to grow in a more equitable and inclusive manner while achieving its developmental agenda. The NGP identifies where employment creation is possible, both within economic sectors as conventionally defined and in cross-cutting activities (...)

In the longer run, as full employment is achieved, the State must increasingly support knowledge- and capital-intensive sectors in order to remain competitive. The NGP observes that this inherent phasing means that, in the medium term, the State must focus on facilitating growth in sectors able to create employment on a large scale. However, the NGP cautions that there is a need to ensure that more advanced industries are not neglected, as these are considered crucial for sustained long-term growth (...)"

To achieve this, it states that government must encourage stronger investment by the private and public sectors to increase employment-creating activities whilst maintaining and incrementally improving South Africa's core strengths in key sectors such as capital equipment for construction and mining, metallurgy, heavy chemicals, pharmaceuticals, software, green technologies and biotechnology. The NGP explains that these industries have been identified as they build on South Africa's existing strong resource base and advanced skills and capacity in these economic sectors. The NGP observes, however, that, to succeed, there is a need to find opportunities (markets) and to pursue more actively exports to, and investment from, these emerging centres of economic power.

A final point to note is that the sectors identified within the NGP as being key drivers of growth and employment creation include:

- ▶ Infrastructure and spatial development
- ▶ The agricultural value chain
- ▶ The mining value chain
- ▶ The manufacturing sectors
- ▶ Tourism and certain high level services
- ▶ The green economy and the knowledge economy
- ▶ Social capital and public services

Source: Marock, Grawitzky, 2014.

8.3. Specific issues of indicators and data availability at sectoral level

The analysis at the sectoral level should definitely try to use as much information and indicators which are available for the whole economy and enable the sectoral breakdown. This includes almost all data and indicators on skills listed in Section 2.2. In the case of sample surveys the sectoral analysis however suffers from sample size issues which do not allow for the conducting of detailed skills analyses in the sectoral breakdown. The quantitative data available at the national level can often be only used for more general trends in the sector.

On the other hand the sectoral level can take advantage of other data specific for the sector, which are excluded from the national level because they are not available or comparable across the economy. Many of these sectoral level data sources may be useful also for the skills analysis. They include for example:

- production and trade statistics which are often tracked in more detail in other sectors than in others (e.g. energy, engineering etc.);
- workforce statistics/registries/statistics of economic subjects in sectors with more regulated entry into some occupations (e.g. health sector);
- statistics of graduates gathered from individual schools which may not be feasible to process at the national level but can be limited to a reasonable amount of work in specific sectors.

At sectoral level it is also possible to relatively easy contact the relevant partners and key players to get further information. This may include databases for a survey (e.g. using employer associations) but also identification and contact with key players in the sectors which can be involved in gathering the qualitative information. How this can be used in the context of skills is described in detail in the joint ETF-Cedefop-ILO Guide, The Approaches to Skills Anticipation and Matching at Sector Level (Wilson et al., 2015, forthcoming).

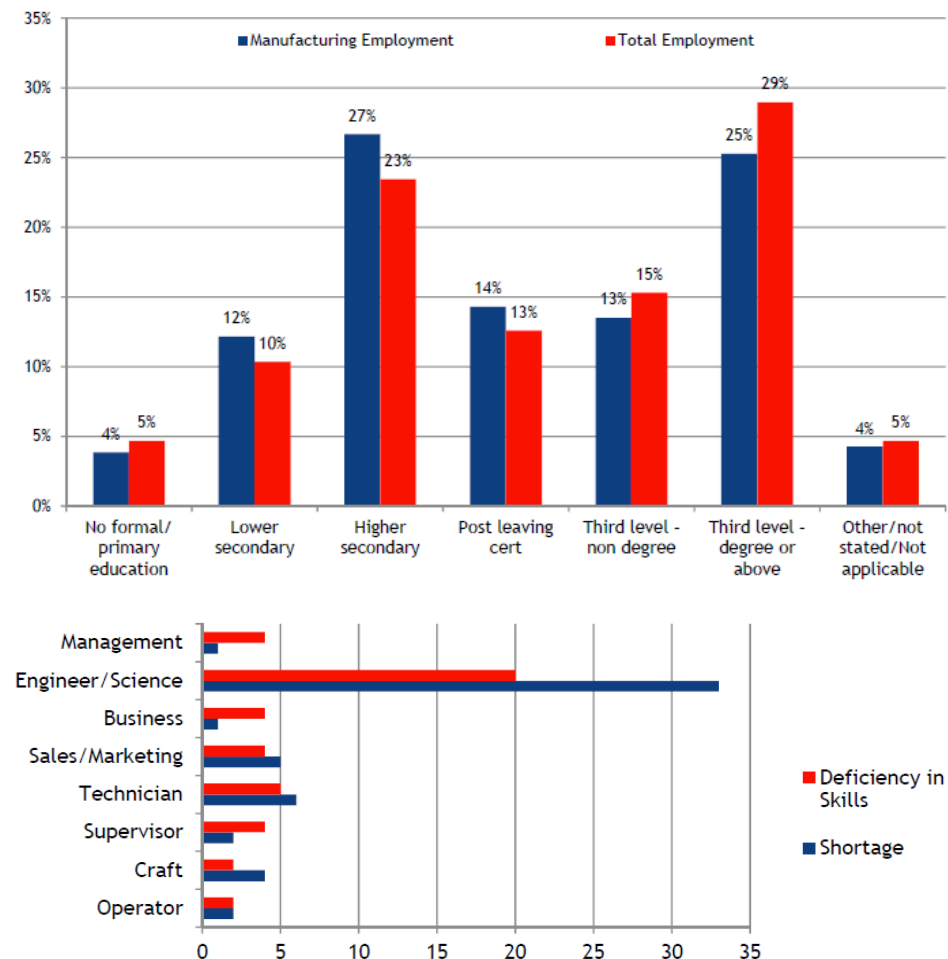
Most of the indicators described in Chapter 2 can also be used at the sectoral level if a breakdown by sector is available. This includes for example:

- trends in occupational and educational structure of the sector;
- age structure of the sector;
- trends in numbers of graduates in the fields relevant for key occupations in the sector;
- Beveridge Curve for key occupations in the sector;
- shares of skill-shortage vacancies reported by employers in the sectors and lists of related job-titles;
- lists of skill gaps in the sectors.



In addition to that the sectoral level is a good perspective for development of qualitative and future oriented information. This may include for example analysis of research and innovation potential of the sector including assessment of opportunities, constraints and demands of skills in the sector or lists of new and emerging skills as reported by employers. A few examples of use of the skills indicators at the sectoral level follows.

Example 3: Skills structure and gaps – quantitative assessment in manufacturing sector Ireland



Source: Forfás, 2013.

Example 4: Qualitative assessment of skill gaps and emerging skills in renewable energy sector Ireland

Skill Gaps by Work Area

Occupation	Work Area
Power Engineers (Level 8)	HV Power System Design; Grid connection; Wind Power Generation.
Electro Mechanical Technicians (Level 7)	Operation and maintenance of renewable installations.
Marine Engineers (Level 8)	Cable laying, lifting and installing, use of equipment like sub-ploughs and knowledge of marine legislation.
Hydraulic Engineers (Level 8)	Concerned with the flow and conveyance of fluids
IT Systems Developer (Level 8)	Smart Metering, Smart Networking
Project Managers (Level 8)	Wind Energy.
Mechanical Engineers (Level 8)	Biomass/ Thermal Energy.
Mechanical Engineering Technicians (Level 7)	Operation and maintenance of biomass installations
Physicists (Level 8)	Analysis of wind movement.
Systems Engineers (Level 8)	Integrating systems comprising a range of technologies (mechanical, electrical, hydraulic, marine, instrumentation).
Nano Systems Engineers (Level 8/9)	Design, develop, the production of materials, devices, and systems of unique molecular composition.

New and Emerging Skills

Occupation	Work Area
Wind Turbine Service Technicians (Level 7)	Operation and maintenance of installed wind capacity
Electro Mechanical Engineering Technicians (Level 7)	Operation and maintenance of renewable technologies systems including biomass
Smart Grid Technicians (Level 7) electrical technicians with enhanced ICT skills	Providing consumers with access to more accurate data and knowledge about electricity pricing.
Technicians and Skilled Workers (Levels 6/7)	Installation and maintenance of charging points for electric cars

Source: Forfás, 2010.

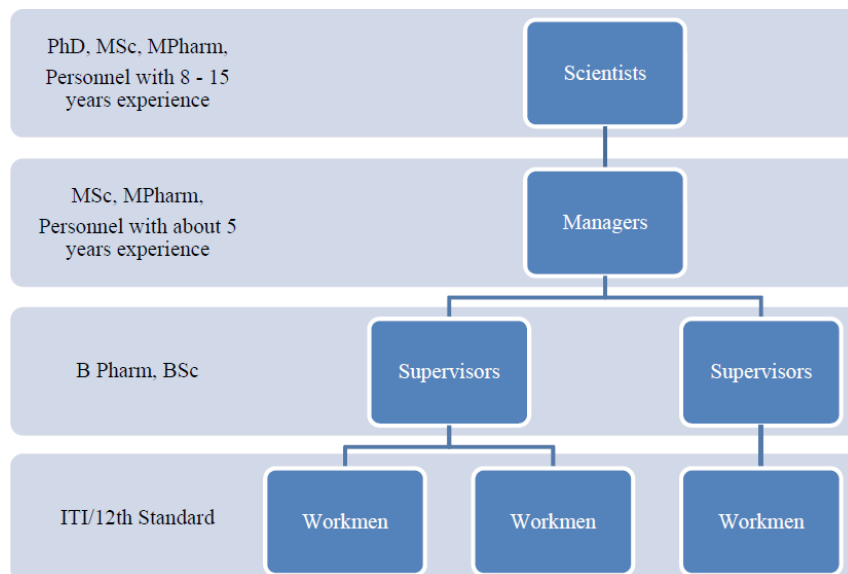


Example 5: Education profiles of employment in chemicals and pharmaceuticals sectors in India

Educational qualifications of personnel employed in chemicals and pharmaceuticals

Function	Distribution
Ph. D / MTech / MSc etc.	5%-8%
Graduate Engineers	15%-25%
Diploma Engineers	10%
ITI and other vocational courses	15-20%
Graduates (BA/BSc/BCom/others)	15-25%
12 th standard or below	20-25%

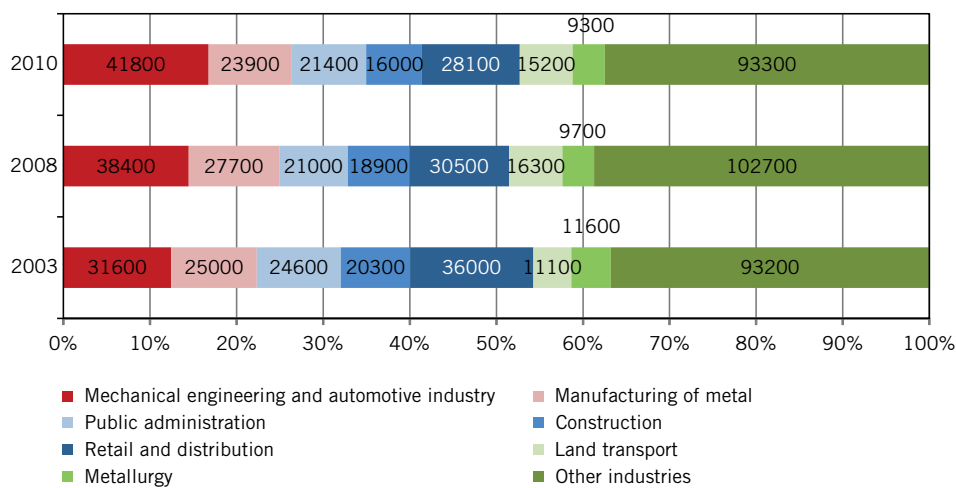
Profile of people employed in pharmaceuticals



Source: NSDC, 2009.

Example 6: Assessment of skill supply potential for the mechanical engineering and automotive industry in the Czech Republic

Major industries of employment of workers with upper secondary education in fields relevant for mechanical engineering and the automotive industry (LFS data)



Source: National Training Fund, 2012.



Chapter 9. Summary of skills inclusion checklists



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Checklist 1 – Preparation phase



Have current employment policy and relevant materials been identified?

- ☐ Legislation relevant to all levels and forms of education (e.g. education act, continuing training, higher education, TVET, employment act, labour code)
- ☐ Legislation relevant to recognition and validation of informal learning
- ☐ HRD and skills strategies
- ☐ Labour market analyses
- ☐ Industrial policies / sectoral studies
- ☐ Active labour market policy
- ☐ Strategic documents for education and training, including continuing vocational training and adult learning
- ☐ Analytical and strategic documents which contribute to the development of occupational/education standards, national qualifications frameworks, curricula
- ☐ Public concerns as discussed in the media

Are all relevant stakeholders involved?

- ☐ ILO constituents
 - ▶ Government
 - ministry in charge of employment and labour issues, Public Employment Services (PES)
 - ministry(ies) in charge of all forms and levels of education and training (see Box 1.1)
 - line ministries (Industry, Trade, Agriculture, Health, Transportation...)
 - ▶ Employers
 - ▶ Trade unions
- ☐ Existing tripartite bodies
 - ▶ HRD Council, National Skill Council, inter-ministerial committees, human resource development authorities, national qualification bodies, etc.
 - ▶ Sectors skills councils
- ☐ Other representatives of the private sector (chambers of commerce, professional associations)
- ☐ Informal sector representatives (employer organizations, trade unions...)
- ☐ Representatives of education and training
- ☐ Involvement of regional level partners if appropriate in the context of the country's governance system

Are all relevant stakeholders consulted?

- ☐ Have the role of stakeholders been identified? Are there role changes of these stakeholders in the policy development or implementation?
- ☐ What mechanism is used to engage stakeholders actively? Is this mechanism considered effective?



Checklist 2 – Issue identification phase

- ☐ Has an analysis of the drivers of changes in skills demand and supply and relevant policies been conducted?
 - ▶ Environment
 - ▶ Trade and globalization
 - ▶ Demography
 - ▶ Migration
 - ▶ Technology
 - ▶ Other relevant drivers depending on the country and policy context
- ☐ Have key skills indicators been taken into consideration?
 - ▶ Skills supply
 - ▶ Skills demand
 - ▶ Skills mismatch
 - ▶ Skills issues for target groups
- ☐ Are the data for skills analysis and evaluation of skills related objectives available on a regular basis?
 - ▶ If not has this been recognized as one of the issues which the strategy should deal with?
- ☐ Does the analysis of institutional and legislative framework for skills identification and development cover all important aspects?
 - ▶ qualitative information on general practices;
 - ▶ problems which the institutions face in their work;
 - ▶ identification of gaps in the legislation and institutional framework;
 - ▶ identification of overlap of responsibilities of different institutions and regulations;
 - ▶ the likely future development according to information from strategies and plans.



Checklist 3 – Formulation phase

- ☐ Are all pillars of education and training covered?
- ☐ Are the skills related objectives and measures relevant for the identified issues?
- ☐ Has the linkage of the goals to legislation and other strategies been considered, including education, skills and human resource development strategies?
- ☐ Do the constituents have the capabilities they need to formulate the strategy (including issues relevant to skills)?

Checklist 4 – Validation, adoption and communication phase



- ☐ Have the objectives been consulted with all partners defined in Phase 1?
 - ▶ Have the education and skills providers, both public and private, been involved?
- ☐ Have the findings (identified issues and related objectives) been explained properly? Is the process transparent and understandable for all partners?
- ☐ Has the policy been given an executive force? Do the relevant actors take responsibility for the strategy, is the ownership clear?
 - ▶ From the skills perspective recognition by ministries in charge of different education and training, including line ministries, is critical (see Box 1.1) and existing tripartite bodies (National HRD Council, sector skills councils).

Checklist 5 – Programming and budgeting phase



- ☐ Do formulated objectives clearly define the following?
 - ▶ the target group
 - ▶ measures
 - ▶ institutional responsibility (leading partner and stakeholders involved)
 - stakeholders responsible for skills identification and development share responsibility for objectives which influence them
 - ▶ budget
 - ▶ timeframe
- ☐ Are indicators for monitoring and evaluation of performance and impact defined?
 - ▶ Are the skills related indicators included?

Checklist 6 – Implementation phase



- ☐ Do the responsible actors realize the agreed steps to implement the policy?
 - ▶ Does this include measures related to HR and skills?
 - ▶ Are the agreed measures implemented consistently across objectives and responsible actors?
- ☐ Have the responsible actors the capabilities for a successful implementation of the policy?



Checklist 7 – Monitoring and evaluation phase

- ☐ Are the monitoring and evaluation mechanisms being realized?
 - ▶ Do they include evaluation of objectives and measures related to skills?
 - ▶ Is the implementation of the policy being evaluated in the context of other policies and strategies including the skills and educational policy?
- ☐ Are the interim results of monitoring and evaluation reflected in the process of implementation?
- ☐ Is there a follow-up process after the policy is formulated and discussed among the stakeholders?



Checklist 8 – Inclusion of skills in analyses and policies at the sectoral level

- ☐ Does the sector selection concern the change in demand on skills?
- ☐ Does the sectoral policy include topics related to skills demand and supply?
- ☐ Are the national data relevant to skills utilized at the sectoral level to a sufficient extent?
- ☐ Are the sector-specific data and information being utilized?



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