DIRECTORATE-GENERAL FOR DEVELOPMENT AND COOPERATION - EUROPEAID

Short term high quality studies to support activities under the Eastern Partnership Project

HiQSTEP

Skills Needs Identification and Anticipation Policies and Practices in the Eastern Partnership Region - Cross-country Report

Lizzi Feiler

Lizzi.feiler@gmail.com

Final version 22.9.2014

This report has been prepared by the KANTOR Management Consultants - ed Consortium. The findings, conclusions and interpretations expressed in this document are those of the Consortium alone and should in no way be taken to reflect the policies or opinions of the European Commission.

Preface

This cross-country study on identification and anticipation of skills demand and supply in the Eastern Partnership (EaP) Region is part of the project '**Short term high quality studies to support activities under the Eastern Partnership – HiQSTEP, EuropeAid/132574/C/SER/Multi**', carried out by an international consortium under the leadership of Kantor Management Consultants. The present study has been carried out to support the activities of Platform II - 'Economic Integration and Convergence with EU policies' – of the Eastern Partnership.

The EaP Platform II Work Programme has identified skills anticipation and matching as a priority area on which the EaP countries will work with the EU in years to come. The European Training Foundation (ETF) is leading the thematic work in cooperation with DG Employment, Social Affairs and Inclusion.

The present study has been implemented by the study team under the leadership of Lizzi Feiler, study team leader, and composed of the following national experts: Arayik Navoyan (Armenia), Amin Charkazov (Azerbaijan), Iouri Zagoumennov (Belarus), Lela Maisuradze (Georgia), Viorica Antonov (Republic of Moldova) and Larysa Lisogor (Ukraine).

Methodical supervision has been carried out by the HiQSTEP Key Expert and Study Director Gabriele Bonafede, and overall supervision by Przemysław Musiałkowski, Team Leader of the HiQSTEP Project.

Sincere thanks go to the national stakeholders in all six countries who provided information in interviews and responses to questionnaires, and to Ana Andric, Cristina Mereuta and Timo Kuusela of ETF for their highly valuable feedback and information.

September 2014

CONTENT

Executive summary

Studies on 'Skills Needs Identification and Anticipation Policies and Practices' have been conducted in the framework of the HiQSTEP Project[1] in support of the Eastern Partnership (EaP)[2] activities under Platform II, 'Economic integration and convergence with EU sectoral policies'. The present cross-country report draws on national reports from Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine, on interviews with key national stakeholders and on the results of the first network meeting organised by the European Training Foundation (ETF) in June 2014.

The interest of policy makers in anticipating future skill needs has grown in all countries. A better informed look into the future is viewed as an imperative of successful policies for more dynamic labour markets and prosperous economies.

Objectives

The overall objective of the skills anticipation project in the EaP region is to help the partner countries build effective systems for skills needs identification and anticipation. Taking stock of the state of play in all six EaP countries was a first step, covering current practices and policies of skills identification and anticipation and a brief assessment of data availability and institutional settings. Stocktaking results and the identification of gaps should inform the development of ways forward to further develop skills anticipation systems and make them more effective.

High relevance of skills anticipation for the Eastern Partnership region

Transition countries of the EaP region have experienced severe labour market shocks. Starting to recover from a low bottom after independence, growth resumed between late 1990s and early 2000s. After the negative impact of the global economic crisis of 2008-2009, the countries have re-entered a more steady growth path. But net job creation has not been sufficient to provide employment for the redundant workforce and for young labour market entrants.

Economic transition from state-planned to market economies, with the ensuing privatization and industrial restructuring, has generated large-scale labour redundancies and has rendered obsolete the skills of the older workforce. The emerging service sector, driven by new technologies, is demanding completely different skills than those required by the old industries.

On this backdrop, EaP countries have been reforming their education and training systems. Policy makers are striving at improving methods to anticipate future skill needs. A better informed look into the future is viewed as necessary to ensure successful policy making with the aim to improve skills generation, make labour-markets more dynamic and enhance the competitiveness of industries and national economies.

Perception of skills mismatch

Skills mismatches are viewed as an obstacle to growth and competitiveness. Mismatch is closely linked with structural unemployment, specifically youth unemployment. Mismatch shows in different types of skill gaps and imbalances such as over-education, under-education, over-qualification, under-qualification, skill shortages, skill obsolescence and so forth.

The mismatches perceived in the EaP countries are severe. Frequently reported forms of mismatch are: i) Between higher education (HE) and vocational education (VET). An oversupply of HE

[1] Short term high quality studies to support activities under the Eastern Partnership.

[2] Launched in 2009, the Eastern Partnership is a joint initiative between the EU, EU countries and the eastern European partner countries Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine.

graduates (specifically in certain fields like economy, law), and a persistent general shortage of VET graduates is a shared phenomenon. ii) Mismatch between theoretical knowledge and practical skills. Employers frequently complain about the lack of practical skills among graduates of higher education, but also among VET graduates. iii) There is a lack of jobs. The number of jobseekers generally exceeds vacancies. Unemployment per se is usually not regarded as mismatch, but more disaggregated data by education levels, gender and regions are needed to explore the causes and characteristics of structural unemployment.

Availability of labour market data

Availability of robust and reliable data about employment and unemployment, about enterprises and about education and training is a basic prerequisite for tackling the mismatch problem. Skill needs anticipation starts with identification of skills. Developing occupation standards, National Qualification Frameworks (NQF), and establishing functional skill councils for key sectors are on-going processes in all countries and corner stones of skills identification and measurements.

Labour market information in transition economies initially faced considerable data constraints. To date, all state statistical offices regularly publish macro data and analysis based on household budget surveys, but dissemination practices and transparency vary from country to country. It is not enough that data are available, it must be brought to the actors and used for policy action.

Current practices of skills identification and anticipation

Skills policies may, as one extreme, rely on market forces, which means not intervening and expecting that the majority of individual actors take the right actions. As the other extreme, the government decides on the basis of top-down planning about the provision of skills through the planned education inputs and outputs. The national reports provide examples of both policy approaches.

All EaP countries (with the exception of Georgia) maintain the so-called 'state order system', a traditional system of government-planned, top-down allocation of resources and study places (quotas) for VET and HE institutions. The state order system aims at regulating the future supply of skills, based on macro-economic forecasts (econometric models) and reports from state-owned enterprises. This approach fails in covering the more dynamic private sector of the economy. Experiences with other forms of detailed top down planning of education and training systems (e.g. manpower planning approaches used in the 1960s) suggests that a mechanical application of forecasting does not bring the expected results of reducing skills mismatch.[3]

Macro-level practices in the EaP countries mostly envisage a mid-term time horizon. A few countries have recently piloted new approaches of formal, quantitative forecasts with a longer time horizon (Azerbaijan, Ukraine). Public employment services regularly elaborate short-term labour market forecasts**,** based on administrative data and mainly used for programming active labour market measures (public works, training courses). Most public employment services also conduct employer surveys, with varying response quotas and results. Stocktaking of practices at the micro-level show that tracer studies, school-to-work transition surveys, and local employer surveys are conducted rather occasionally, carried out by international or bilateral donors, but rarely become a regular practice with sustainable affects.

[3] ETF POSITION PAPER. Anticipating and matching demand and supply of skills in ETF partner countries. Feiler, et. al. 2012.

Institutional settings and policies

National key strategies set the frame for overall social and economic development. They do not explicitly cover the skills dimension but constitute a basis for skills anticipation. They provide not only an outlook on 'what is likely to happen', but also on what is strategically desired to happen.

There are two forms of institutional challenges. First, there is an institutional gap between education and employment systems which needs to be bridged if policies of matching and anticipation are to work effectively. Second, there is a gap between institutional actors and the private sector. A stronger involvement of social partners may enhance cooperation between the education system and businesses. The most frequent form of employers' involvement is their participation in regular surveys. So far, employers do not play a regular and active role in offering work-practices or internships as part of the education curricula; these approaches would require a legal basis. Methods for reaching out to small enterprises and to the informal economy also remain a challenge.

Main results and conclusions

This first stock-taking has confirmed that policy makers and civil society stakeholders in the EaP countries are highly aware of the need to anticipate the future demand and supply of skills. They share the view that a skilled and competent workforce is a key condition for creating more and better jobs and for increasing the competitiveness of enterprises and national economies.

The mismatch problem cannot be solved with the sole idea that the education system has to change its direction in order to better meet the needs of the economy. More needs to be done as well on the demand side, with a pro-active role of employers and their representatives, with policies that support the enhancement of human resource management practices and incentives to boost company-based training.

Skills needs identification is the basis for anticipation. Robust data are needed as well as standards and structures for measuring indicators. EaP countries dispose of a relatively good general statistical basis, but there are gaps in specific labour market data. A more coherent and transparent labour market information system is needed.

Stocktaking has confirmed that a wide range of initiatives to identify and anticipate skills supply and demand is in place in all EaP countries. But these initiatives are often carried out on an ad hoc basis and their effectiveness is not validated. What is needed is a more deliberate, coherent and coordinated approach.

A shared conclusion drawn by stakeholders of all six countries is that regular and effective skills anticipation requires a coordinating body, assigned at national level. Stakeholders also stressed the importance of exchanging experiences and mutual learning among the EaP countries as well as participating in EU networks. Each country needs to decide where to set priorities, but a few general recommendations can be highlighted:

- **Improving the data bases for skills anticipation.** Developing a coherent labour market information system (LMIS), based on robust data from different sources should be the goal.
- **Developing a mix of approaches.** Different methods are needed to meet diverse needs of different actors. A mix of top-down and bottom-up approaches, combining strategic policy measures with actions driven by market mechanisms may best help to tackle mismatches.
- **Regular coordination of actors.** As many actors are involved in skills anticipation, their roles must be clearly defined and coordination is needed. The coordinating body needs a clear mandate and be accountable to the top policy level.

The network of policy makers and experts from all EaP countries, established in June 2014 and coordinated by the ETF, will support the building of national mechanisms for skills needs identification and anticipation. It will be an important platform for exchange of experiences and mutual learning. There is no universal road toward a perfect skills anticipation system that can predict the future and eliminate uncertainties. But more effective national mechanisms are needed to better understand how skills systems function, what is likely to happen, and which solutions work best.

Abbreviations and acronyms

Cedefop	European Centre for the Development of Vocational Training
CRRC	Caucasus Research Resource Centers
EaP	Eastern Partnership
ENP	European Neighbourhood Policy
ETF	European Training Foundation
EU	European Union
GDP	Gross Domestic Product
HBS	Household Budget Survey
HDI	Human Development Index (UNDP)
HE	Higher Education
HiQSTEP	Short term high quality studies to support activities under the Eastern Partnership
ICT	Information and Communications Technology
ILO	International Labour Organisation
ISCED	International Standard Classification of Education.
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification of All Economic Activities
IZA	Institute for the Study of Labor, Germany
KIIS	Kiev International Institute of Sociology
KILM	Key Indicators of the Labour Market (ILO Database)
LFS	Labour Force Survey
LMIS	Labour Market Information System
OECD	Organisation for Economic Co-operation and Development
PES	Public Employment Service
R&D	Research and development
STEM	Science, technology, engineering and mathematics
UNDP	United Nations Development Programme
UNEP	United Nations Environment Program
UN/DESA	United Nations Department of Economic and Social Affairs
VET	Vocational education and training

Country codes

AM	Armenia	BG	Bulgaria
AZ	Azerbaijan	PL	Poland
BY	Belarus	RO	Romania
GE	Georgia	RU	Russian Federation
MD	Republic of Moldova	TR	Turkey
UA	Ukraine		

1. Introduction

The study on 'Skills Needs Identification and Anticipation Policies and Practices' has been conducted in the framework of HiQSTEP Project in support of the EaP[4] activities under Platform II, 'Economic integration and convergence with EU sectoral policies'.

This cross-country report draws on national reports from Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine. These countries differ in many aspects, including size, natural resources and their transition path from a centrally planned to a market economy, but they also share similarities which offer many advantages for mutual learning and exchange of experiences. This synthesis looks at the EaP countries' experience in identifying and anticipating the demand for and supply of skills, taking stock of current practices and policies.

The following chapters present the main findings of six country reports, starting with the objectives and basic concepts of skills anticipation and its specific relevance for transition economies. Section 2 continues with a brief situation analysis, in terms of macro-economic framework conditions and the relevant backdrop for skills anticipation. Section 3 explores the fundaments of effective skills anticipation practices, the availability of robust data about the labour market and the education systems. The following section 4 presents procedures and practices currently used in the EaP countries for skills identification and anticipation and a preliminary gap analysis. Section 5 focuses the policy level, the institutional settings and main policies for skills anticipation. The final section 6 presents preliminary conclusions and key messages. The annexes contain an overview of available data, a compiled list of currently used practices and procedures for skills anticipation in the EaP region, as well as compiled results of questionnaires with stakeholders.

1.1 Objectives and approach of this study

The overall objective of the ETF Skills Anticipation Project in the EaP region – to which the HiQSTEP Project contributes with the present study – is to help the partner countries build their national mechanisms for skills needs identification and anticipation. The specific objectives of the foregoing elaboration of national reports and the present synthesis report are i) to make an assessment of data availability in the partner countries, ii) to take stock of current practices of skills identification and anticipation, iii) to look into institutional settings and policies. The overview of the current state of play of practices and policies is completed with proposals of the possible ways forward to further develop the skills anticipation systems.

This cross country report is based on three main sources of information:

(1) Six national reports produced by national experts d as working documents. They were elaborated on the basis of drafting guidelines (annex 8) and ongoing guidance by the Study Team Leader (author of this cross-country report); the quality control was assured by the Study Director.

[4] Launched in 2009, the Eastern Partnership is a joint initiative between the EU, EU countries and the eastern European partner countries Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine.

(2) Standard questionnaires[5] were used to gather first-hand information from key policy actors in the EaP countries. The national experts identified and shortlisted the key policy actors in the field of skills anticipation and interviewed them. Representatives of the ministries of labour and the ministries of education, key government agencies and/or departments of the ministries (public employment services, VET agencies, national educational institutes,), and employers' and workers' federations were invited to participate in the survey. All countries provided 4 or 5 completed questionnaires[6].

In total 28 completed questionnaires were received from the following stakeholders:

- Ministries of labour and related agencies 7
- Ministries of education and related agencies 7
- Other ministries and agencies 3
- Employer unions, federations 7
- Workers' federations (trade unions) 4

(3) A conference, organised by the ETF in June 2014, brought together key decision makers and experts from all six EaP countries[7]. Preliminary findings of the stock-taking of national practices (draft national reports) were discussed and validated. Main results of the meeting are integrated in this report.

The report also draws upon a range of foregoing work in this area, at the national and regional level undertaken by the ETF. Most important to mention is the ETF's innovation and learning project '*Anticipating and matching demand and supply of skills in ETF partner countries*' which started in 2011 and included the elaboration of the ETF position paper on skills anticipation (Feiler,et.al, 2012)[8]. Credits go to Lassnigg (2012) for his theoretical work underlying a cross country analysis of various transition economies which covered also the Republic of Moldova and Ukraine.

1.2 Focus on skills identification and anticipation - basic concepts and terms

The interest of policy makers in anticipating future skill needs has grown since many years across all countries. A better informed look into the future is viewed necessary to ensure successful policy making with the aim to improve skills generation, create virtuous labour-market dynamics and enhance the competitiveness of industries and national economies. Skills identification and anticipation is understood as a set of complex and continuous ongoing practices, undertaken by various groups of actors from the economy, government and civil society. These practices can be implicit or more explicit in form of more deliberate policies but they always require cooperation among actors.

---

[5] The questionnaire 'Assessing, anticipating and responding to changing skill needs' was prepared by the OECD together with Cedefop, ETF and ILO. Through this questionnaire, the OECD hopes to gather information on the extent to which skills assessment and forecasting exercises influence labour market, education and/or migration policy. The use of the questionnaire by the HiQSTEP project was a first test. It was necessary to translation the questionnaires into national languages because of language barriers and the technical terms used in the questionnaires. The standard questionnaire template is provided in annex 6.

[6] The full list of interview partners is provided in annex 5.

[7] 'MAKE IT MATCH! Skills Matching in the Eastern Partnership Region', The event was organised by the European Training Foundation (ETF)', from 25 to 27 June 2014 in Turin.

[8] The project has pooled together a group of renowned international experts with national experts from a representative range of ETF partner countries. For more details see http://www.etf.europa.eu/web.nsf/pages/Innovation_and_learning_projects

The theoretical concept underlying the work on skills anticipation differentiates between various levels of action and time horizons. The terms macro, meso, and micro denote the scope or outreach of methods, ranging from direct contact with individual actors (micro-level), to industrial sectors or regions (meso-level), and to the larger macro-level of national policies and systems (national education and training systems, national employment policy, etc.). The time dimension differentiates between short-, mid-, and long-term horizons. A long-term perspective is specifically important for policies and reforms of initial education, whereas continuous training policies may operate according to short- and mid-term information. (Feiler,et.al, 2012)

A brief definition of key terms used is given below to facilitate shared understanding:

Skills, skill needs

The term *skill* is widely used in various forms of discourse with a variety of meanings; connotations of the term may change when translated into other languages. In this context, skills are defined as 'the ability to apply knowledge and experience to complete tasks and solve work-related problems'. (Cedefop, 2008) The term therefore refers to cognitive, practical and social dimensions and may also refer to innate talents. In this paper the term 'skills' is used in the most open way possible.

Skill needs is a term used to describe the needs of employers, branches or economic sectors for specific skills in order for the economy to perform adequately. Skill needs can arise as a result of manpower needs or skill gaps. But in addition to these situations, skill needs can arise where new sectors or industries emerge, where new technologies are introduced, or where new jobs are created as a result of convergence between existing sectors or industries (Anderson, 2010).

Anticipation

Anticipation is a wider approach than 'forecasting'. Forecasts produce information on quantitative aspects of future developments through statistical projections. Anticipation reaches wider, as it involves awareness and a will to react in a pro-active way. Anticipatory approaches for the labour market integrate dynamics and set targets in order to tackle skills mismatches; the aim is shaping the future. 'Anticipation may best be described as a mind-set: a move away from a stock-and-flow model of labour with stable characteristics and towards a continuous state of alert and preparedness for future change'. (Lassnigg, 2012)

Mismatch

Skills *mismatches* are viewed as an obstacle to growth and competitiveness of enterprises and to the advancements of the workforce on the labour market. Mismatch is closely linked with structural unemployment, and specifically youth unemployment. The term mismatch denotes different types of skill gaps and imbalances such as over-education, under-education, over-qualification, under-qualification, over-skilling, skill shortages and surpluses, skills obsolescence and so forth. 'Hence, skill mismatch can be both qualitative and quantitative, thus referring to both situations where a person does not meet the job requirements and where there is a shortage or surplus of persons with a specific skill. Skill mismatch can be identified at the individual, enterprise, sector or economy level.' (Anderson, 2010)

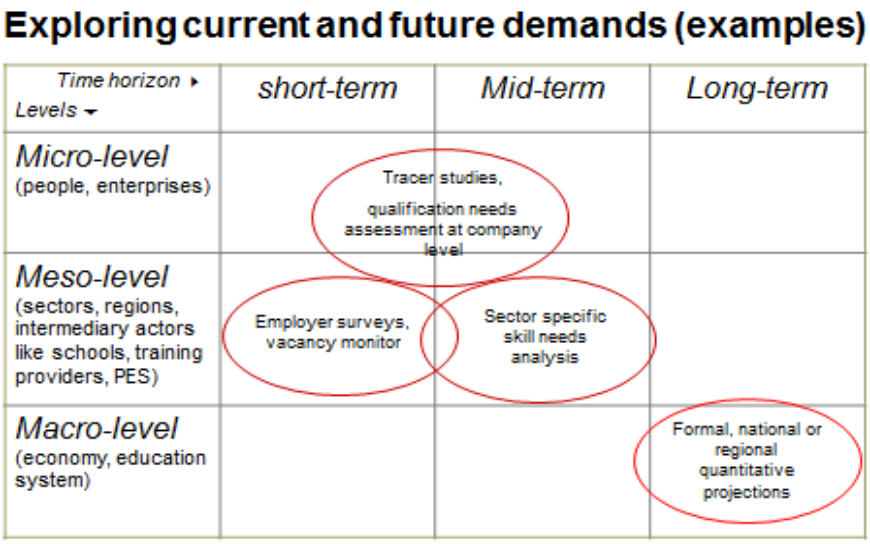
Matching rather denotes actions here and now. The term covers all approaches and tools aimed at reducing skills gaps, increasing employability of the workforce and reducing skills shortages (Feiler,et.al, 2012). As this is a wide field that covers all types of employment services and forms of training, the focus of this stock-taking exercise is on identification and anticipation of skills and does not explore the wider scopes of matching.

There is no universal and single best practice for identifying and anticipating future skills. Different countries use different methods, depending on their institutional set-up and research practices. But all strive at achieving a coherent and well-coordinated mix of methods, covering national, sectoral, and territorial dimensions. Policy makers can draw on a rich stream of experiences in skills anticipation, well documented and widely disseminated. Wilson and Zukersteinova (2011) provide an overview of anticipation methods, such as econometric forecasting models, surveys among employers or qualitative approaches like scenario techniques or the Delphi method. No country has already found the "crystal ball", but experiences suggest what can realistically be expected and what not:

- The mismatch problem can be tackled, but not resolved. A perfect equilibrium does not exist in a dynamic labour market.
- Well-functioning public employment services effectively contribute to better matching skills with jobs, but cannot eradicate mismatch or structural unemployment. They make short-term forecasts, mainly based on data from their registers (administrative data about jobseekers and vacancies), but they are usually not in a position to make long-term forecasts. Their links with the education system are structurally weak.
- Employer surveys are a key method for identifying current skills demands and gaps. Employers may also provide information for short term outlooks, but they do not know which skills (qualitative and quantitative) they will need on the long run. The views of actors in the micro-economy cannot simply be added up to a valid macro-economic picture.
- Anticipation methods need to be continuously validated, improved and adapted to changing environments.

A mix of methods has shown best results and enables addressing different levels of action and time horizons. The mix may include macro, meso, micro level methods, as well as methods reaching out to supra-national levels (macro-level in international economics theoretical/practical environments, including open-economies variables). The time dimension differentiates between short-, mid-, and long-term horizons, commonly defined as up to 1 year, 1-5 years, and longer than 5 years. A long-term perspective is specifically important for policies and reforms of initial education (general education, VET and HE), whereas continuous education and training policies may better operate on a short- and mid-term basis.

Figure 1: Matrix of skills identification and anticipation methods



(Feiler,et.al, 2012)

International exchange of practices and mutual learning networks about skills anticipation and matching have become highly important. A rich source of information is the internet platform *EU skills panorama*[9]. The ETF, in cooperation with the ILO and Cedefop has developed a set of six practical guides about skills anticipation and matching, their publication is forthcoming.

1.3 High relevance of skills anticipation for transition economies

Transition countries have experienced severe labour market shocks, due in large part to turbulence caused when entire state-owned or subsidised industries were privatised or disappeared. The transition from state-planned to market economies, with the ensuing privatization and industrial restructuring, has generated large-scale labour redundancies and has rendered obsolete the skills of the older workforce. Guaranteed lifetime employment, the predominant form of employment in the previously centralised economies (as well as in some EU countries), disappeared and liberal labour market reforms led to flexible work contracts and a growing informal economy, mainly in the emerging service sector. Net job creation has not been sufficient to provide employment for the redundant workforce and for young labour market entrants. The new forms of employment, also driven by new technologies, are demanding completely different skills compared to those required by the old industries. On this backdrop, the EaP countries have been reforming their education and training systems, making them more flexible and reactive to changing skills demands of the economy. Better information about future development of skills supply and skills demand is essential.

Forecasting manpower demands has been a regular practice used by post-soviet governments. State-owned enterprises and local administrations reported future demands for labour to the central government, which elaborated 'state orders' to the education system for supplying the requested skilled workforce. The 'state order' system is still used (see section 4 on current practices for more

[9] http://euskillspanorama.cedefop.europa.eu/

details), but does not meet the requirements of a dynamic labour market with growing private sectors and on-going industrial restructuring. New approaches are needed which are more responsive to skills demands of the job-creating service sector and small and medium sized enterprises.

2. Similarities and differences in the EaP region - a brief situation analysis

Eastern-Partnership countries differ significantly in terms of their industrial, economic structures, their restructuring policies, visions and opportunities for future development. They have also followed different pathways with different speeds from state-planned to market economies. But there are also shared aspects which are characteristic for transition economies. Bardak (2011) provides a detailed analysis of employment and educational structures and policies; her work is referenced in this report. The information provided in this paragraph serves as backdrop and provides the context for a better understanding of the state of play in skills anticipation.

2.1 The macro-economic context

The total population of the six EaP countries was 75.3 million in 2012, with the Ukrainian population of 45.5 million being by far the largest. With the exception of Azerbaijan that has large youth cohorts and a growing population, EaP countries show a similar age structure as EU countries. The populations of Armenia, Belarus, Moldova and Ukraine had been shrinking between 2003 and 2012. Migration stocks in Armenia, Belarus, Moldova and Ukraine exceed 10% of the total population. (See Table 1 below).

Table 1: Demography

	Population (m, 2012):	*demographic trend (% change 2003-2012)*	*Intern. migration stock, % of population (2010)*
AM	3.0	-5.9%	10.90%
AZ	9.2	+12.6%	2.90%
BY	9.5	-3.7%	11.50%
GE	4.5	+3.6%	3.80%
MD	3.6	-1.6%	11.50%
UA	45.5	-5.0%	11.50%

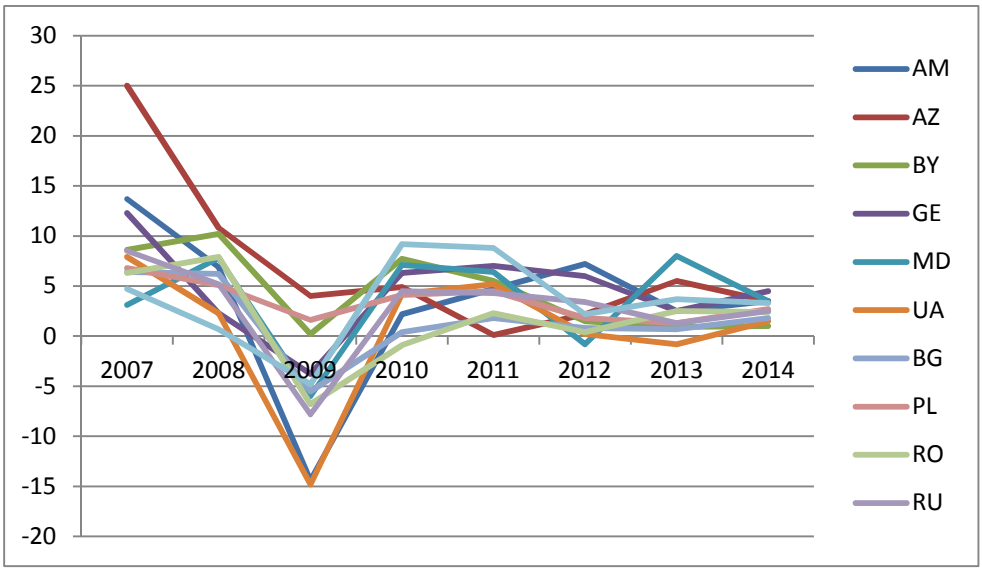
Source: Eurostat. Trends 2003-2012: calculation by the author

Start conditions for macro-economic growth in the EaP countries were already quite different in 1989: relatively high per capita income (GDP) in Belarus and Ukraine (with important production industries) contrast with low GDPs in Armenia, Georgia and Moldova. Azerbaijan, thanks to its rich oil and gas revenues, had a middle position. Starting to recover from a low bottom after independence (with deep economy contractions in the first half of 1990s), growth resumed between late1990s and early 2000s and remained quite high (Armenia, Azerbaijan, Belarus) until the global crisis of 2008-2009 hit hard. The global financial crisis had a strong impact on the EaP region, where GDP declined sharply in 2009, most severely in Ukraine (-14.8%) and Armenia (-14.4%) (fig.2). Growth patterns were also negatively affected by regional conflicts or wars in Armenia, Azerbaijan, Georgia and Moldova, and

recently Ukraine. Growth recovered after 2009, albeit uneven from year to year and at a lower rate compared to pre-crisis years.

Recent economic growth according to GDP growth rates (2012) is highest in Armenia and Georgia, albeit starting from a low level of GDP per capita. Projections for 2013 are low for Ukraine and also for Belarus (fig 2).

Figure 2: GDP growth rate, GDP at market prices, 2007 – 2012, projections for 2013, 2014



Sources: World Bank World Development Indicators (WDI) for 2007-2012, ERBD forecast for 2013-2014
http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG

Note: Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2005 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. World Bank national accounts data, and OECD National Accounts data files.

The baseline scenario forecast for Azerbaijan, Belarus and Georgia for 2015 is with 5% GDP growth quite promising (UN/DESA, 2014). The same report notes that weak external demand and difficulties in accessing external finance are challenges to the countries that should be overcome with diversification of production away from the energy and primary commodities sectors. Projections for 2013 are low for Ukraine (around zero), and may enter a recession of at least 5%, due to the IMF-imposed austerity package and the on-going armed conflict in the eastern parts of the country[10].

GDP per capita is highest in Azerbaijan and Belarus (EUR 5,824 respectively 5,270 in 2012), and lowest in Moldova (EUR 1,586); Armenia and Georgia reach less than half of Azerbaijan's per capita GDP (Table 3). A considerable increase of GDP per capita after the low of 2009 was achieved only by Azerbaijan and Belarus (fig. 3).

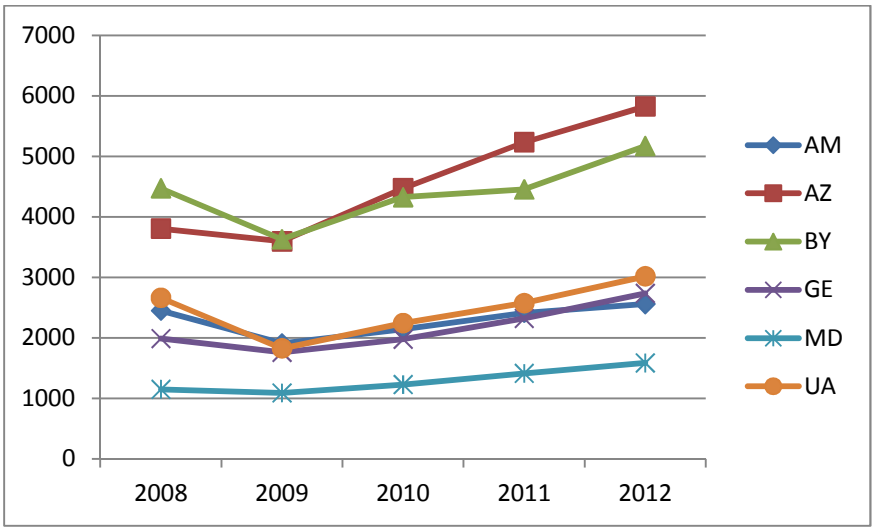
[10] Vienna Institute of International Economic Studies (wiiw), http://wiiw.ac.at/ukraine-overview-ce-14.html accessed 10.7.2014.

Table 2: GDP per capita and total GDP, year 2012 (EUR, current prices)

	GDP per capita	*total GDP (million)*
AM	2,560	7,741
AZ	5,824	53,439
BY	5,170	49,228
GE	2,737	12,311
MD	1,586	5,646
UA	3,018	137,185

Source: Eurostat. Moldova, Georgia: provisional

Figure 3: GDP per capita, 2008 – 2012 (EUR, current prices)



Source: Eurostat

The EU is an important trade partner of the EaP countries. Azerbaijan is the only country with a positive and high trade balance with EU-27, whereas all other countries are net importers of goods from the EU (Eurostat, 2013). Both Belarus and Armenia are members of the Eurasian Union. 62% of Belarus' exports go to CIS countries (2013, CISSTAT).

The economic downturn following **Armenia**'s independence was severe: In 1993 GDP (1,201 million US Dollar at current prices) dropped to 53% of the 1990 GDP (2,257 million US Dollar according WDI, ILO estimates). A moderate turn-around started in 1994 with privatisation, market liberalisation and financial control, achieving average annual GDP growth rates of 5.9% from 1994 to 2001, and 13.1% from 2002 to 2007 (Navoyan, 2014). GDP growth slumped down 14.4% in 2009 compared to 2008, but had a positive average growth of 4% from 2010 to 2014 (WDI and ERBD forecast for 2013 and 2014). Agriculture and food processing contribute large shares to GDP (20% in 2011). (Navoyan, 2014)

While Armenia's working age population is constantly decreasing since 2008, activity and employment rates are increasing. The unemployment rate was with 16.3% in 2103 (Navoyan, 2014) back to the pre-crisis level, but remains the highest compared to other countries of the region. Unemployment among the youth (15-24 years) is the highest among all EaP countries and is marked with a large

gender imbalance. 40.7% of young women, compared to 31.5% of young men had no jobs in 2012 (Eurostat, 2014).

Azerbaijan's economy is still highly dependent on oil production and developments in the world oil market. 43.4% of gross domestic product was produced in the oil sector in 2013 and this sector contributed 92.4% to total exports[11]. But the oil sector does not create enough jobs; only one per cent of the employed population is currently working in the oil and gas industry. In order to reduce dependence on the oil and gas sector, the government pursues a policy of economic diversification. The national development strategy 'Azerbaijan 2020 – a Vision of the Future[12]' stresses the importance of a balanced export-oriented economy that is less dependent on oil revenues. As a result of development programmes for the non-oil sector, its growth was high and almost stable in recent years – between 9 and 10%. Government policies promote particularly construction, tourism, agriculture and information technologies (ICT). Despite high growth rates in the non-oil economy, diversification still requires strong efforts. According to the State Statistical Committee of Azerbaijan, non-oil GDP grew 2.6 times in the last decade (from 2003 to 2013), while the oil and gas sector grew 4.1 times (Charkazov, 2014).

Belarus experienced stable and high growth rates until 2011 (going down to almost zero growth only in 2009), but with very modest forecasts of around 1% for 2013 and 2014. Policy makers are aware of the need to boost growth, employability and competitiveness. Belarus' economy is export-oriented; potash is one of the main exports. The share of state-owned enterprises (70% of GDP, fig.5 below) is by far the highest in the EaP region. A 'Program for Social and Economic Development 2011 – 2015' sets the main objectives for employment and skills generation. Boosting the high-tech industry is among the strategic plans. Demographic trends in Belarus are characterized by negative natural population growth as a result of low birth rates in the 1990s and labour emigration of qualified workers.

Georgia signed an unprecedented Association Agreement with the European Union (EU) in June 2014, with an indicative financial allocation of EUR 335 – 410 million for 2014 - 2017[13]. Economic reforms in Georgia have contributed to economic growth but low job creation. Youth unemployment in Georgia was with 35.5% the highest in the region after Armenia (year 2012, WDI), among them many with higher education and many women. Vulnerable forms of self-employment are widespread. More than half of Georgia's economically active population worked in the agricultural sector (53.4% in 2007), which contributed only 8.5% to the country's GDP (ILO KILM). Ambitious education reforms did not yet result in tackling the mismatch problem, and job creation is still at a low level.

Moldova's Association Agreement with the EU, also signed in June 2014, may contribute to further the political reform agenda. Moldova is the smallest country of the region, with the lowest per capita income and the lowest Human Development Index (HDI) rank. Moldova's economic growth has been strong but volatile, with an important agricultural sector dependent on seasonal climatic conditions. Migration stocks (11.5% of the population, year 2000) are as high as in Belarus and Ukraine (Eurostat, see table 1). Labour migration (mainly to Russia and the EU) led to brain drain but is feeding the economy with significant and hardly controlled inflows of money. Outmigration also contributes to a reduction of effective unemployment rates. Youth unemployment is with 5.6% comparatively low

11 http://www.stat.gov.az/source/azfigures

12 'AZERBAIJAN 2020: LOOK INTO THE FUTURE - CONCEPT OF DEVELOPMENT (2012), http://www.president.az/files/future_en.pdf accessed12.6.2014.

13 http://eeas.europa.eu/georgia/index_en.htm , accessed 8.7.2014.

(2012, WDI). Moldova spends more on education than any other EaP country (8.6% of GDP in 2011, see table 6).

Ukraine experienced a significant decline in industrial production in the 1990s. During the same time period also real wages dropped sharply, whereas employment remained almost unchanged, due to labour shedding and wage arrears (Lisogor, 2014). The largest drop in industrial output and jobs was observed in the metallurgy and chemical industry and in the construction sector, while the (partly informal) service sector and agriculture remained relatively resilient to the crisis. GDP growth prospects are extremely volatile on the backdrop of current financial constraints and on-going political turmoil.

2.2 Main features of transition

The economic transition experienced in the EaP countries after the end of the Soviet Union has two main features. First, the shift from state owned to private enterprises. This shift was marked by a sharp decline of industrial outputs (de-industrialization), with different forms and results of privatization. The collateral effects of this difficult transition were underemployment in the large traditional industries and only partial modernization and restructuring of enterprises; at the same time the emergence and growth of an informal economy, partly with informal enterprises linked with large enterprises. The second feature is a shift from industry to services. This shows in a high contribution of the service sector to GDP (all countries with the exception of Azerbaijan, where industry remains the strongest sector) and the importance of the service sector as job provider (all countries with the exception of Georgia, where the majority still work in agriculture). Shifts in employment by economic sectors generally show a decrease of jobs in agriculture and in industry and an increase in services. But there are outliers: in Azerbaijan the increasing share of employment in agriculture, in Ukraine the increasing share of employment in industry. The relation between employment and GDP share also indicates a huge divide in productivity among the sectors and countries.

Table 3: Employment and GDP contribution by economic sector

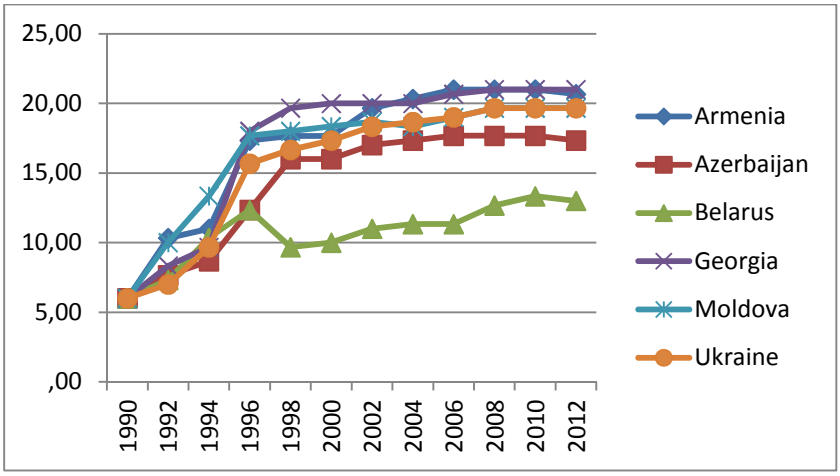
	Agriculture			*Industry*			*Services*		
	Employment		*Value added (% of GDP)*	*Employment*		*Value added (% of GDP)*	*Employment*		*Value added (% of GDP)*
	1990	*lay*)*	*2012*	*1990*	*lay*	*2012*	*1990*	*lay*	*2012*
AM	--	38.9	21.5	--	16.7	37.0	--	44.4	42.5
AZ	30.9	37.7	6.2	22.9	14.3	64.3	31.1	48.0	29.4
BY	21.6	10.5	7.6	39.5	33.7	38.2	36.1	49.9	54.2
GE	--	53.4	8.5	--	10.4	23.1	--	36.2	68.3
MD	33.8	26.4	14.5	29	19.3	13.7	33.9	54.3	71.8
UA	19.8	17.2	9.5	9.5	20.7	31.4	15.4	62.1	59.1

*) lay: latest available year (between 2007 and 2012)
Source: ILO KILM, 8th edition

Structural reforms are not only needed to make transition from a centrally planned to a market economy possible, but also to ensure competitiveness within the global economy. An aggregate index calculated on the basis of six EBRD indexes that measure privatization, governance and enterprise restructuring and price liberalization is used to depict transitional performance of the six EaP countries since 1990. Most structural reforms were implemented during the first seven years after

independence. Belarus kept structural reforms at a lower score than the other countries, and Armenia and Georgia show highest scores.

Figure 4: Aggregate transition indicator, 1990 - 2012

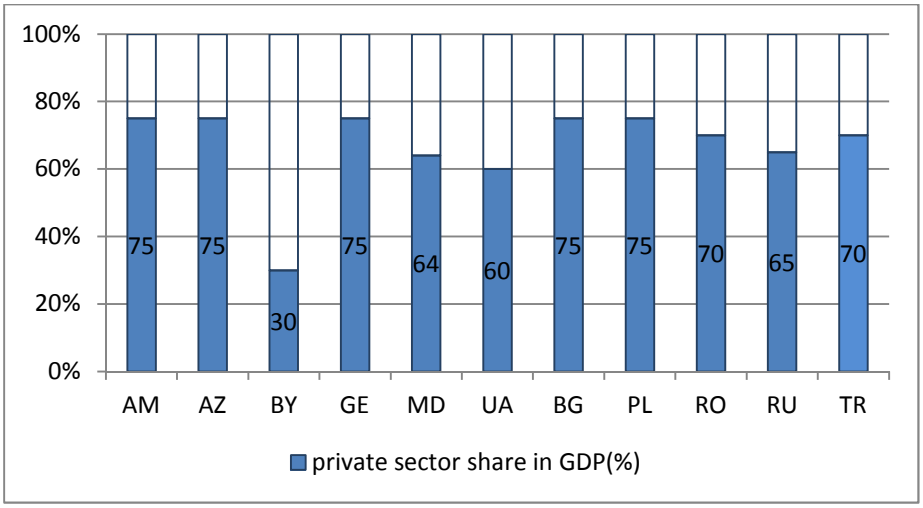


Note: the aggregate index is calculated by adding the six index values: large scale privatisation, small scale privatisation, governance and enterprise restructuring, price liberalisation, trade & Forex system, competition policy

Source: Author, based on EBRD (2014), transition indicators by country, http://www.ebrd.com/pages/research/economics/data/macro.shtml

Private sector contribution to GDP of the three Caucasian countries is comparable to the Central-European EU member states: Poland, Romania and Bulgaria. In Ukraine the share is relatively low with 60%. State control over the economy remained strongest in Belarus, where the private sector contributes only 30% to the country's GDP. As modernisation of traditional industries is needed, labour redundancy and socially responsible restructuring with strong efforts to retrain the workforce are on the policy agenda in all countries, but should be given high priority in Belarus and Ukraine.

Figure 5: Private sector share in GDP (%), 2010



Source: EBRD, http://www.ebrd.com/pages/research/economics/data/macro.shtml

Transition from state-planned to market economy was accompanied by the emergence of an informal economy. Informal employment is difficult to measure and extremely difficult to compare across countries, as each country applies a different definition, depending also on their varying tax and social security systems. ILO's key indicators of the labour market provide data based on national definitions, as shown in table 4.

High informal employment is a critical issue for skills anticipation; there exist only proxies and there are variations in measuring methods. It can be generalised that it is mainly the unskilled, the young and the elder people (after retirement, due to insufficient pensions) who work informally. But it is not only the service sector that provides informal employment. In Azerbaijan, informal employment has increased in the manufacturing industry and in construction.

Table 4: Employment in the informal economy

country	*Year*	*Share of persons in informal, non-agricultural employment (%)*	*Share of persons employed in the informal sector in total non-agricultural employment (%)*
Armenia	2008	49.6	
Azerbaijan	2009	26.5	
Belarus		n.a.	
Georgia			6.9
Moldova	2009	15.9	
Ukraine	2009		9.4
Poland	1998	9.2	
Russia	2010		12.1
Turkey	2009	30.6	

Source: ILO, KILM 8, 8th edition

2.3 Investment in human capital

A look at EaP countries' public spending on education (percentage of GDP, year 2011) shows that Moldova invests most (8.6%), followed by Ukraine (6.2%) and Belarus (4.8%); (see table 5a below). Education has been declared a top priority in Belarus where it is planned to increase the state budget for education to 8.5% (Zagoumennov, 2014).

Research and development expenditure (% of GDP) is the highest among the Eastern partners in Belarus, only topped by the benchmark country Russia and equal to Poland (table 5b)[14]. For what concerns the spread of internet, Belarus has more internet users per 100 inhabitants than any other EaP country and is only topped by the benchmark countries Poland and Turkey (table 5c). Not surprisingly, Belarus holds also the best position within the UNDP Human Development Index (2012) with rank 50, this is a better rank than any other EaP or benchmark country, with the exception of Poland that ranks 39th best out of a total of 187 (table 5d).

[14] For this study, comparison if some key indicators was made with Bulgaria, Poland, Romania, Russia and Turkey.

Table 5: Investment in human capital: public spending on education, research and development expenditure, internet users, Human Development Index

	a) Public spending on education (% of GDP)	*b) R&D expenditure (% of GDP)*	*c) Internet users per 100 inhabitants*	*d) Human Development Index*
	2011	*2011*	*2008*	*2012*
AM	3.1	0.27	5.6	78
AZ	2.4	0.22	10.7	82
BY	4.8	0.76	28.9	50
GE	2.7	n.a.	8.3	72
MD	8.6	0.41	19.1	113
UA	6.2	n.a.	22.5	78
BG	4.1	0.57	31.0	57
PL	5.2	0.77	43.9	39
RO	4.2	0.48	24.0	56
RU	n.a.	1.12	21.1	55
TR	n.a.	0.84	33.1	90
	BG, PL: 2010; RO: 2009	TR: 2010		Ranks 1-187, 1 is the best

Sources:
Column a): WDI http://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS/countries
Column b): WDI http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS/countries
Column c): EBRD http://www.ebrd.com/pages/research/economics/data/macro.shtml
Column d): UNDP https://data.undp.org/dataset/Table-1-Human-Development-Index-and-its-components/wxub-qc5k

2.4 Key labour market indicators

Looking at key labour market indicators, there are marked differences. Azerbaijan and Georgia have the highest labour force participation and employment rates, and Moldova, where only 40% of the working age population are active, by far the lowest (see table 6 below), Remarkable is also the very low share of wage and salaried workers among the employed population in Azerbaijan (33.3%) and Georgia (38.4%). In contrast, 94.2% in Belarus and 81.2% in Ukraine are wage and salaried workers. These differences, indicative of the importance of the informal economy, have huge implications for skills. Unemployment rates are highest in Armenia and Georgia, where also youth unemployment is alarmingly high.

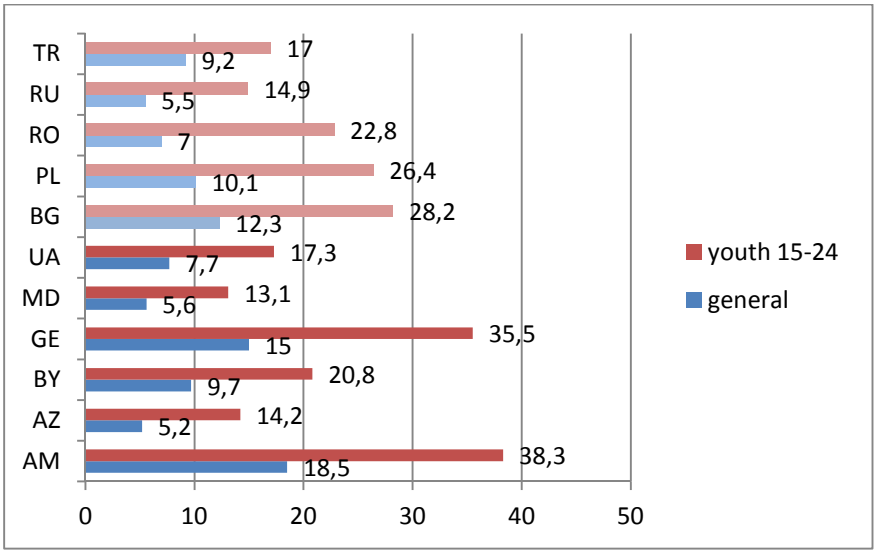
Table 6: Key employment indicators, year 2012

	Labour force participation rate, 15+, total	*Employment to population ratio, 15+, total*	*Status in employment: % of wag and salaried workers*	*Total unemployment rate*	*Youth unemployment rate (age 15-24)*
AM	62.6	51.0	55.6	18.5	38.3
AZ	65.6	62.0	33.3	5.2	14.2
BY	55.7	50.3	94.2	9.7	20.8
GE	64.7	55.0	38.4	15.0	35.5
MD	40.0	37.7	70.8	5.6	13.1
UA	59.1	54.6	81.2	7.7	17.3

Source: KILM, 8th edition, ILO estimates

First labour market entry for young people is difficult. Many have to accept vulnerable jobs, often informal employment. This shows in high youth unemployment rates, most worrisome in Georgia and Armenia, where more than one third of the young population has no job. In both countries, women are more severely affected than men.

Figure 6: Overall and youth unemployment, 2012



Source: WDI

2.5 Skills mismatch

The typical structural shifts in transition countries have a strong impact on their skills systems. Delayed restructuring of key industries contributes to skills obsolescence. Those who are employed in the informal economy are most likely excluded from training and skills upgrading. VET systems are being reformed, partly after an almost collapse of VET systems which were not matching anymore the new skills requirements. But VET remains unattractive compared to higher education. Over-education can increasingly be observed not only in the EaP countries but also in EU member states. But in contrast to the latter, higher education graduates in the EaP countries face higher unemployment rates than groups with lower education attainments (see data for Armenia and Ukraine in Table 4 below). Mismatch is also characterized by shortages of skilled workers.

The mismatch problem is complex because of the many factors disrupting labour-market equilibrium between demand and supply. To name some of these factors: availability of jobs, technological innovation, migration flows, lack of spatial mobility, and wages.

Mismatch is difficult to measure, mainly because skills and competencies as such are difficult to define (context dependent) and rarely measured by statistical programmes. Gatelli and Johansen (2012) piloted measuring skills mismatch in selected countries, using various methods. The ILO provides two different types of aggregate mismatch indicators based on LFS data but warns that comparability across countries is limited. Unfortunately, indicators are only calculated for Armenia and Ukraine, and they confirm a high level of over-education for both countries. There is a general preference for higher

education in the EaP countries, where people rarely choose vocation schools. This is a preference which is also due to ongoing reforms and low attractiveness of VET schools.

Table 7: Skills mismatch, age group 15-29

Skills mismatch between labour supply and demand by educational attainment, 2012		*Skills mismatch between job requirements and qualifications,*			
Country	*skills mismatch (index of dissimilarity)*	*Country*	*Incidence of over-education*	*incidence of under-education*	*year*
Armenia	2,3	Armenia	21,9	11,4	2012
Ukraine*)	19,8	Ukraine	38,2	5,0	2013
Bulgaria	16,8	Bulgaria	14,7	18,1	2010
Poland	13,1	Poland	11,6	23,2	2010
Romania	4,4	Romania	14,5	29,4	2008
Russia	4,9	Russia	13,8	31,0	2012
Turkey	8,9	Turkey	8,0	48,4	2008

*) year 2013

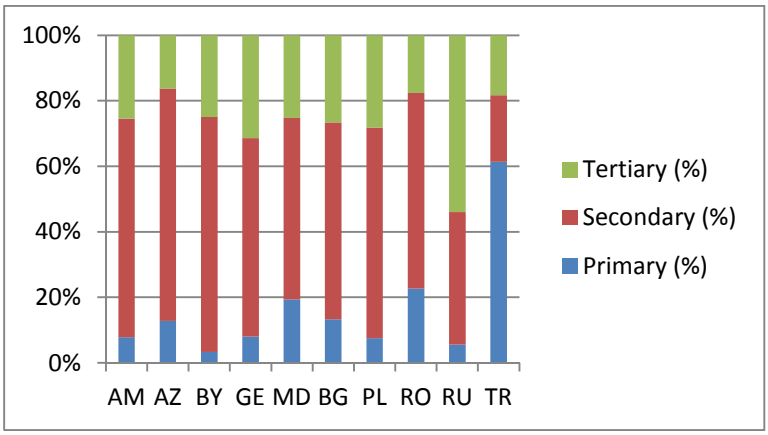
Note: the higher the index value, the higher the mismatch. This indicator reflects differences between unemployment rates by level of education attainment. Low differential across all educational levels rather indicate a problem with lack of demand than with education.

Note: Skills mismatch in the sense of over-education or under-education means that workers have either more education or less education than is required. This measurement is based on the International Standard Classification of Occupations (ISCO) with assigned levels of International Standard Classification of Education (ISCED) and then compared with the level of education of job holders. The higher the index, the higher the mismatch in terms of over-, respectively under-education.

Source: KILM 8th edition, indicators 15a and 15b

Comparative advantages of the EaP countries are the high level of education and moderately high employment rates in Azerbaijan, Georgia and Ukraine (62, 55, and 54.6% for the age group 15+, year 2012, KILM data). Belarus ambitiously targets an employment rate of 80% by 2015 (Zagoumennov, 2014). A high level of educational attainment, but also high unemployment among university graduates is common. As much as 42.5% of the Ukrainian university students choose social sciences, business or law. (2012, State Statistical Service quoted from Lisogor, 2014). In Armenia and in Belarus, the gross enrolment ratio of women in tertiary education is considerable higher than that of men (Eurostat, 2014).

Figure 7: Labour force by educational attainment



Source: ILO KILM 8th edition. Data for AZ, BG, MD, PL, RO, TR from 2012; AM 2011; BY 2009; GE 2010; RU 2008

The mismatches perceived in the EaP countries are severe. These perceptions are frequently based on informal or selective indicators, but also on employer surveys and administrative data of PES, comparing education levels of the unemployed and reported vacancies. Frequently reported forms of mismatch are the following:

- Mismatch is between HE and VET. An oversupply of HE graduates and a persistent shortage of VET graduates is a shared phenomenon. This results in overeducation (HE graduates working in jobs that require less qualification). The oversupply concerns specifically certain fields of HE (economy, business administration, law), but more detailed analysis is needed.
- Mismatch between theoretical knowledge and practical skills. Employers frequently complain about the lack of practical skills among graduates of higher education, but also among VET graduates.
- There is evidence that unemployment exceeds vacancies, that there is a lack of jobs. Unemployment per se is generally not regarded as mismatch, but more disaggregated data by education levels, gender, and for the local level is needed to optimize matching.

Armenia

Mismatch in Armenia is characterised by the unattractiveness of VET. Students' enrolment in higher education is three times as high as enrolment in vocation schools. Both systems, VET and HE, suffer from the lack of demand-orientation and generation of practical skills. Many Armenian firms complain that an inadequately educated workforce is a major obstacle to their operation and growth[15]. They consider, in particular, the overemphasizing of theory and the insufficient focus on practical skills as major problems (Navoyan, 2014). The mismatch problem contributes to high unemployment. Armenia has the highest unemployment rate and the highest youth unemployment rate among all EaP and benchmark countries (18.5% respectively 38.3%, year 2012, WDI). Alarmingly high is the share of young people who are neither in education nor in work with 39% (Navoyan, 2014).

Azerbaijan

Due to the fact that the existing formal education is knowledge- rather than competency-based, a large mismatch of skills supply and demand is observed in the labour market. Holders of different levels and types of diplomas (graduates of vocational, secondary specialised and higher education) still face problems in entering the labour market and using their skills. Companies require vocational skills, whereas people rarely chose initial vocational education as a way to specialisation. The higher education path is still attractive for youth but leads to over-qualification. Besides that, according to official statistics, each year about fifty thousand people enter the labour market without having any qualification, which also leads to skills deficits (Charkazov, 2014). This description may very well stand for other countries too.

Belarus

The mismatch between skills supply and the requirements of modern jobs is widening in Belarus, worsened by the oversupply of graduates with tertiary degrees and the falling interest of the youth in vocational training. Skilled workers are most in demand on the labour market. An increasing urban-rural divide can be observed, due to new job opportunities in the service sector in the cities. So far there is little coordination between the world of work and the world of education in Belarus. To meet this challenge the Council of Ministers has established sectoral councils in the pilot areas of the

[15] World Bank, 2012. Armenia - Promoting productive employment, Policy Note n° 72907, p. 9, available at http://documents.worldbank.org/curated/en/2012/09/17368635/armenia-promoting-productive-employment

economy and initiated testing of the new elements of the National Qualifications Framework (Zagoumennov, 2014).

Georgia

In Georgia, occasional studies identify gaps for skilled workers demanded by branches with growing employment prospects, such as utilities (electricity, gas, water and sewage), mining and processing, chemicals and pharmaceuticals, rail and logistics. That this is not only a supply shortage, but a skills mismatch problem is confirmed by the fact that out of the unemployed in urban areas as much as 44% have higher education. Compared to other transition economies, Georgia has the highest share of university graduates among the unemployed workforce. (Source: The World Bank staff estimates using Geostat Data, 2013, quoted from Masuradze, 2014). An analysis carried out by the Government in cooperation with the Millennium Challenge Corporation concludes that the locally available workforce has irrelevant qualifications and lacks the skills most in demand. This finding is supported by the Global Competitiveness Index report, according to which the second largest problem for doing business in Georgia is the lack of adequately educated workforce. (ETF, 2014)

3. Availability of labour market data

The availability of robust data about the labour market, education and training, and enterprises is an important institutional factor for planning, monitoring and evaluation of skills policies. Robust data constitute the basis, on which any trend analysis, forecast, projection, or anticipation can be built upon. The term *robust* includes a range of important quality criteria: based on internationally agreed standards, comparability over time and space, continuity to allow time series analysis, easy accessibility and availability to different users.

To build up a coherent labour market information system (LMIS) should be the goal. A LMIS is more than a set of databases. It consists of a set of institutional arrangements, procedures and mechanisms that are designed to regularly produce reliable data about the labour market, compiled from different sources, with interrelated data that can also be disaggregated by gender, age groups, territories, etc. and that is accessible by policy makers, researchers, and labour market actors.

Labour market information in transition economies initially faced considerable data constraints. ‘Individual and household surveys that were administered during the period of central planning and early transition years were inadequate to the needs of both policy-makers and researches’ (Lehmann, Muravyev, & Zimmermann, 2012). Hence, also a statistical transition is needed. Despite a positive legacy of collecting data from the state-planned economy, there are also marked differences between the EaP countries in terms of technical standards (interrelated databases, online data compilation and dissemination). The systems need to be brought in line with international statistical conventions, terms and standards (e.g. resolutions of the International Conference on Labour Statistics, ILO conventions, Eurostat standards).

Data gained from national, standardized statistics are the backbone for skills anticipation. But also good practices in identifying skills at the micro level are needed. Bottom-up hard work is requested, gathering data directly at workplaces and schools. While skills needs of large, state-owned enterprises can be relatively easily collected, private companies need to be convinced and small entrepreneurs might need support in identifying and expressing skills requirements.

Stocktaking of data availability in the EaP countries has covered standardized surveys (Labour Force Survey, Household Budget Survey, Establishment Survey) as well as administrative data. A common methodological problem is the informal economy and informal employment. Tax and social security systems usually exclude large shares of establishments and people if they are part of the informal economy.

Preliminary findings from the national reports can be summarised as follows:

All state statistical offices regularly publish macro data and analysis based on household budget surveys, in line with international standards and conventions. Unfortunately, dissemination practices and periodicity vary, publications are mostly available in pdf-format, and there is no access to databases or databanks. According to Charkazov (2014), it is difficult to obtain accurate and detailed information and assessment of elements such as methodologies and definitions (metadata). This is a significant challenge for all users, from state agencies to independent researchers, as it provides scope for misinterpretation of statistics. There is a lack of collaboration between statistical services and independent researchers. Access to raw datasets is in most cases restricted.

In Azerbaijan, for instance, data collection is undertaken by various agencies, but they do not always use the same standards. There is no integrated LMIS, where different data sources are interrelated and can be easily compared and analysed. In contrast, data collection and publication seems to be a monopoly of the state statistical offices in Belarus.

There are large differences between data-collection and dissemination practices of public employment services (PES). Since resources and institutional capacities generally still remain low, the outreach of their services covers only a small share of the labour market. PES are providers of administrative data about unemployment and often also about employment. PES in the EaP countries generally have weak links to employers in the private sector. Some PES collect data only from the public sector (Azerbaijan, Belarus). In consequence, data availability about vacancies is very limited. It should be noted that both sources are relevant: labour force survey data as well as administrative data from public employment services. Because of the different methods of data generation about unemployment, data of the LFS are different from those obtained by the PES by definition.

A shared gap in data availability is the lack of data about enterprises. There are no regular establishment surveys that cover also the private sector, which is an obstacle for research on the demand-side of the labour market. Also measuring the informal economy and informal employment constitutes a shared issue.

Armenia

Official statistics and databases about the education and training system cover general education, and partially vocational and higher education. However, a tracer system for university graduates has been established that uses international standards. Coherent and interlinked data about the future supply of skills is missing. Labour market data are provided by the National Statistic Service of Armenia (published annually as employment section of the statistical yearbook), and by the State Employment Service Agency (administrative data, but also data from bi-annual employer surveys). As yet, there is no integrated labour market information system in place.

Azerbaijan

It is hard to confirm the statements about skills mismatch without respective skills assessment and anticipation exercises, because despite the availability of supply side information, data about the demand side is either lacking or not reliable. Information is regularly collected from public employers, but studies have difficulties in reaching employers due to gaps in methodologies, shortage of human and financial resources, poor infrastructure (IT systems), as well as existence of large-scale informal

employment. There is awareness about the high importance of occupational and qualification standards which are needed to transmit labour market signals to the education and training system.

A working group was set up at the Ministry of Labour and Social Protection (MLSPP) to sum up the activities in the field of skills anticipation with a focus on analysing sources of data about the labour market demand, including job vacancy announcements, surveys, data from the labour inspection about breach of labour contracts, and inventories of the sources of data. The aim of the working group is to assess data availability and data gaps and to define where and how missing data can be obtained (Charkazov, 2014).

Belarus

Comprehensive information about education and training is available at the Belarus National Educational Portal[16]. Belarus is regularly conducting Household Sample Surveys on Employment Issues using the ILO labour force survey methodology and also the Sample Household Living Standards Survey. However there is no specific database on labour market issues. Belarus' labour market data are the least compliant with international standards. Some information is available via the web site of the National Statistical Committee[17]. Public and private recruitment services are publishing electronic vacancy databases.

Georgia

The Ministry of Health, Labour and Social Affairs launched "Worknet", an internet portal for jobseekers and employers (worknet.gov.ge). The National Centre for Education Quality Enhancement e-publishes information about education and training providers to better inform students. Statistical information about education institutions at all levels is provided by the government's Educational Management Information System (EMIS).

Robust data about the labour market and for skills anticipation is practically not available. The National Statistics Office of Georgia regularly carries out an Integrated Household Survey which covers also labour market statistics, but the methodology and frequency needs to be further modified to provide relevant data on skills anticipation. Georgia recently signed a Financing Agreement with the EU totalling EUR 27 million budgetary support for poverty reduction and sustainable socio-economic development. As part of this agreement, Georgia plans establishing a labour market information and forecasting system. The ETF has been supporting Georgia with an analysis of the labour market information system and preparation of a concept note and roadmap how the data and information gaps can be addressed in years to come (ETF, 2014). A short description of the LMIS project is given in the box below.

Box 1: Development of a labour market information system in Georgia

One of the basic problems is the lack of information about the labour market. LMI is needed not only needed for forecasting, but also for evidence-based policy making to improve labour market functioning. To fill this gap, a joint effort is made by the Ministry of Labour, Health and Social Affairs, the Social Service Agency (Employment Support Service) and other line ministries and government agencies (Ministry of Education and Science, Ministry of Economy and Sustainable Development, Geostat, etc.). The development of a national LMIS is supported by the EU financed 'employment and VET programme 2014-2017', the ETF is providing technical assistance to the Government of Georgia.

16 Online at www.belarus.edu.by

17 http://belstat.gov.by

The period following the so-called Rose Revolution of 2003 was characterised by market-liberal reforms which swept away traditional labour market institutions. Public employment services and labour inspection were closed down, unemployment benefits were discontinued, and active labour market measures were reduced to a few ad hoc limited initiatives

The new coalition government that came into power in Georgia in 2012 emphasized the need to address the soaring unemployment and to rebuild labour market institutions, such as the Department of Labour and Employment Policy within the Ministry of Labour, Health and Social Affairs, and the Employment Support Service within the Social Service Agency. The development of a comprehensive Labour Market Information System is a cornerstone of the reform plans. A first step was assessing existing labour market statistics, and drafting a road map towards the development of a coherent LMIS.

Source: ETF, 2014

Moldova

Data collection systems in Moldova are based on relatively good and internationally comparable standards. Two cornerstones of a LMIS, the Labour Force Survey and the Establishment Survey with data about enterprises and their workforce are available since 2000 and compliant with international standards. The National Bureau of Statistics published data about the labour market at http://www.statistica.md/category.php?l=en&idc=107&.. The public employment service of Moldova (ANOFM) has received technical assistance from the Swedish employment service (AMS) and is collecting, analysing and publishing administrative labour market data.

Ukraine

Ukraine started late with state-of-the-art data collection projects, but has achieved systems that are compliant with international standards. Today, the State Statistics Committee of Ukraine (SSCU) publishes a large amount of statistical information on its website (www.ukrstat.gov.ua) for the current year and also main statistical indicators shown in time series for the last 10-15 years. Updates of statistical data and information about the services of SSCU are carried out regularly[18].

According to Lehmann, Muravyev, & Zimmermann (2012) Ukraine long remained *terra incognita* for labour market research. This is surprising because Ukraine is one of the largest transition countries, has a geographic border with the EU, and 'the transition process in Ukraine was characterized by an extremely large initial shock and a fairly slow recovery'. The country's regional diversity and ethnic and linguistic divide first became visible in the Orange Revolution and even more in recent political turmoils.

Box 2: Example of data collection - Ukraine

The Ukrainian Longitudinal Monitoring Survey (ULMS)

Initiated by an international research group coordinated by the German Institute for the Study of Labour (IZA) a panel household survey, the 'Ukrainian Longitudinal Monitoring Survey (ULMS)' was established in 2003. Survey waves were conducted in 2003, 2004, 2007 and 2012, with the Kiev International Institute of Sociology (KIIS) as local partner for data collection. The ULMS is one of the most widely used household and labour force surveys in Eastern Europe. It is based on a statistically representative sample of the Ukrainian population aged between 15 and 72 years, comprising about 4,000 households and 8,500 individuals.

[18] (UN statistical division country profiles, http://unstats.un.org/unsd/dnss/docViewer.aspx?docID=676#start

The UMLS data are freely available, and its features might be relevant for surveys on other transition countries. A detailed description of the methodology is available at the internet: http://idsc.iza.org/?page=27&id=56

Source: (Lehmann, Muravyev, & Zimmermann, 2012)

4. Current practices and procedures of skills identification and anticipation in the EaP countries

This section gives an overview of existing practices and procedures, summarizing the findings from the national reports and information gained from interviews with key national stakeholders. Annex 4 gives a detailed overview of practices for all six EaP countries. It should be noted that this overview is not meant as 'beauty contest', it should rather inspire further development and mutual exchange of experiences.

There were some methodological challenges. The overview of national practices contains implicit, ad hoc initiatives as well as explicit, deliberate policies. It was within the responsibility of the author and the national experts to allocate policies and practices according the theoretical frame of micro-, meso- and macro approaches. International discourse on skills is using a complex, streamlined (English) terminology which is difficult to translate into national languages.

From a policy perspective, the practices may as one extreme follow an approach which relies on market forces, which means not intervening or expecting that individual actors at the micro level take the right actions. On the other extreme, the government decides on the basis of top-down planning about the provision of skills through planned education inputs and outputs. The national reports give examples for both policy approaches. Neither extreme is conducive for modern skills systems. Georgia, for example, after a market-liberal period, is now re-implementing and modernising labour market institutions and skills policies.

4.1 Practices and procedures used in the EaP countries

Widely used practices: state orders and labour market outlooks of public employment services

All EaP countries, with the exception of Georgia, apply a system of government-planned, top-down allocation of resources and study places (quotas) for VET and HE institutions. This so-called '**state order system'** is typically implemented with inter-ministerial cooperation or under the responsibility of the ministry of economy (Azerbaijan). The state order system aims at regulating future supply of skills (more precisely: qualifications), and is based on forecasts of skills demands, using macro-economic forecasts (econometric models) and reports from the public enterprise sector. Within the frame of this paper, it is not possible to make a serious assessment the effectiveness of the state order system. Some respondents of the questionnaire stated that results of the current practice are not reliable. Experiences with other detailed top down planning of education and training systems (e.g. manpower

planning approaches used in the 1960ies) suggest that a mechanical application of forecasting does not bring the expected results of reducing skills mismatch.

All PES elaborate **short-term labour market forecasts, strategies or action pans**. Labour market forecasts use various sources, mainly administrative data (unemployment registers), surveys among employers about their future personnel and skills demand, and reported vacancies. Most PES are conducting regular employer surveys. In the case of Moldova, the ministry of labour, together with the PES and other stakeholders are conducting short term labour market forecasts, based on technical support from the Swedish PES (see box 4). This forecasting model builds on standardised interviews made by staff of the PES with employers and includes questions about qualification requirements according to ISCO and ISCED codes (level of education linked to occupational code). As described in chapter 3, the lack of a coherent LMIS is an issue which cannot be solved by the PES alone and needs cooperation of partners. PES in the EaP region generally have weak institutional capacities and resources, resulting in a relatively small coverage of the labour market.

Main obstacles that were frequently mentioned are: lack of statistical infrastructure, problems of skills measurement, lack of reliability of data derived from previous practices, lack of capacities and funds.

Armenia

The National Development Strategy 2014 - 2025[19] sets the frame for policies and programmes. Economic forecasts are conducted by the Ministry of Economy and the Central Bank, but there is no direct connection with skills forecasts. A system of regular skill needs identification and anticipation is not yet in place. Ad hoc surveys are conducted by VET institutions, by employer associations and studies are occasionally carried out by international institutions. But the quality and methods of these surveys and studies is varying, the use of information is unclear, and there is lack of coordination. The main practices to mention are the state quota system that defines enrolment rates for VET and HE, the labour market analyses conducted by the State Employment Service Agency, based on employer surveys and unemployment records, and various tracer studies. Tracer studies were recently introduced for VET graduates (ETF and UNDP, 2012), and by some of the universities (by UFAR, the French University in Armenia in 2013, and by the Yerevan Linguistic State University in 2011). The tracer survey conducted by the UNDP applied a holistic approach and is described in more detail below.

Box 3: A holistic approach of tracer studies in VET, Georgia

The tracer study of UNDP and the Institute of Political and Sociological Consulting inquired about the labour market outcome of VET studies. A holistic approach with six components was applied:

- Survey of graduates from preliminary and middle vocational institutions (years 2010-2011, 651 graduates from 25 vocational schools and 60 colleges were surveyed).
- A survey of 400 employers which regularly hire VET graduates
- Survey of school directors, teachers and trainers (401 persons)
- Interviews with administrative staff and independent experts (8 persons)
- Focus groups (three groups with graduates and trainers)
- Desk research about the legal framework and statistics of last 10 years.

[19] Armenia Development Strategy for 2014-2015, Annex to Republic of Armenia Government Decree # 442 - N, on 27th of March, 2014.

The results showed that about 55 % of the graduates found employment, after an average job search time of six months. 28% of the graduates reported that they were using the practical knowledge acquired at school in their work, while the theoretical knowledge from school is used by 31.9%. More than 24% have attended an additional training course after graduation and about 42% had the intention to do so within the coming year.

Source: UNDP, 2012. Involvement of 2010-2011Preliminary and Middle Level of Vocational Education System Graduates in the Labour Market. Key results. UNDP Vocational Education and Training (VET) Project in Armenia, Yerevan, 2012. Information provided by the national expert.

Quite active in the field of skills management are employers' representatives. The Republican Union of Employers of Armenia (RUEA) is involved in three activities: bi-annual skills assessments in line with the G20 training strategy, using a combination of various methods; sectoral skills assessment (for the occupation of cooks, an ETF project); and World Skills (competition for VET professions, a GIZ project). The Union of Manufacturers and Businessmen, UMB(E)A, has reported applying qualitative methods for skills needs assessment (annual regular board meetings, mix of methods). First steps have been taken concerning the green economy (alternative energy sources). A higher education network was established aiming at human capital and graduate employability assessment, using the Italian *Alma Laurea* approach.

Azerbaijan

Macroeconomic four-year forecasts are carried out by the Ministry of Economy and Industry and include labour market forecasts. However, labour market forecasts are not yet detailed enough and currently the issue is to focus on the anticipation of sector skill needs, as the macro-models should be fed by micro and sector models. The Institute for Scientific Research on Economic Reforms functioning within the auspices of the ministry has recently developed a macroeconomic model of sustainable growth of the economy of Azerbaijan (AZMOD). The application of the model will yield data about sectors that will expand about workforce requirements. The econometric labour market analysis model is also expected to be developed to complement AZMOD (see box 4 below for more details).

Box 4: Example of conducting macro-economic forecasts - Azerbaijan

AZMOD - macro-econometric model of sustainable growth of the economy of Azerbaijan

The AZMOD model of sustainable growth of the economy of Azerbaijan was commissioned by the Ministry of Economy and Industry and developed by the Institute for Scientific Research on Economic Reforms with support of the EU and technical assistance from the EcoMod Network. AZMOD enables development of medium- and long-term projections and plans in line with respective scenarios. AZMOD can be used to assess the impact of a wide range of economic factors, to analyse scenarios and to support strategic planning (e.g., to address holistically the impact of the changing oil prices, the tax policy, labour market development, trade policy, public expenditure, investment and industrial policies, etc.)

AZMOD is a macro-econometric model that takes into account specific features of the national economy while reflecting cross-sector linkages in a simple and complete manner. It is a dynamic general equilibrium model that employs various econometric tools, including regression analysis, Co-integration and Error Correction Modelling and dynamic simulation method. AZMOD consists of stochastic equations and identities and covers the real, monetary, fiscal and external sectors of the Azerbaijan economy.

To date, the model is in a test phase and is not yet finalised. The aim of the model is helping decision-making and bridging the gap between researchers, policymakers, and businesses. It enables policy-makers to evaluate potential impact of alternative economic policies, price changes and other trends on general economy and on its sectors, as well as on foreign trade and state expenditures. For example, inputting data of percentage increase in minimum wages yields results in the impact on economic activity, taxes, unemployment, etc.

Cross-sector balances of Baku city and 10 economic regions were developed and used in comparing added value and consumption expenditures in regions and conducting quantitative and qualitative analyses. The model includes modules on prediction of the risks inherent in the development of the economy.

Primary factor intensity matrix (identification and ranking factor intensity of net export and consumption) and labour-specialty division matrix were developed and analysed on the basis of international experience with the aim of studying relations between foreign trade and labour market within sectors and assessing workforce-based development potential of competitive economic activity areas.

AZMOD enables carrying out research on improving scientific content of socio-economic development of the regions, ensuring regional balance and boosting the competitiveness of the economy. For instance, in relation to scientific research on development of entrepreneurship, in order to improve competitiveness of regional economy while deploying a cluster approach, current socio-economic situation in economic regions was analysed, diversification ratios were derived for each economic region, development ratings of the regions were calculated and respective proposals and recommendations were put forward on efficient use of economic potential. In parallel, capital (capital assets in use) and labour elasticity of output by economic regions were estimated, which revealed the important role of labour in output of that particular region.

Source: Charkazov, 2014

Another approach on the macro-level is a model for short term projections on demographic and labour market developments. The Scientific Research and Training Centre on Labour and Social Problems is engaged in developing skills anticipation models and methods as part of its research activities. For labour market and demographic analysis the Centre uses SPSS (a statistical software tool that embraces interpolation, regression, etc.), the PROST tool (a World Bank tool developed in 2001 to forecast demography and retirement) that can forecast about 60 indicators, and the United Nations model for demographic anticipation.

A methodology has been developed by the Centre for short-term projections with a maximum three-year horizon that can integrate data from both the public and the private sectors. The methodology contains guidelines for developing regional employment programs, an anticipation methodology, an analysis of economic development and projections for the next year (based on interpolation).

To ensure the implementation of the 'State Program on Reforms in Higher Education System of the Republic of Azerbaijan for 2009-2013', a methodology was developed to project student admission to higher education institutions. Hence, a simulation model of job creation was developed that allows assessing the impacts of taxes and subsidies on various sectors of the economy (on gross output, value added, wages, profits), as well as the impact of exports-imports, government expenditures, consumption and investment on gross output, and the impact of gross output on the volume of inputs needed for the production of final goods.[20]

Belarus

Formal forecasting is the main method currently used in Belarus to identify future skill needs. This information is used for determining labour force needs and establishing admission quotas for educational institutions, taking into account the capacity of educational institutions, demography and an efficient use of labour resources. Forecasts in the area of higher education and specialized secondary education have a long-term time horizon (a decade) and forecasts in the area of vocational and professional technical education are made for a mid-term horizon (5 years). Other anticipation methods (e.g. sectoral studies, enterprise surveys, surveys among employees, graduates, informal procedures) are used occasionally. A computerized matching tool has been piloted recently to facilitate matching between training needs of vulnerable groups, training suppliers and skill demands of the productive sector.

Box 5: State order system for education supply - the Belarus practice

The Code of Education (resolution of the council of ministers of the Republic of Belarus of 2011) establishes the procedure for forecasting labour force demands. The requests for state orders for public institutions of education (higher education, specialized secondary and vocational education) are defined by local, regional and national public authorities, the National Academy of Sciences of Belarus, other government organizations.

The main objective of the state orders is the establishment of admission quotas for educational institutions, based on the demands for labour resources and taking into account the capacity of educational providers. Information about additional labour force demand for graduates of higher education, specialized secondary education, and vocational and technical education is gathered from public enterprises which report their staff replacement needs and specialist for innovative projects and the creation of new high-tech industries. Information about additional staffing needs is analysed by public authorities and aligned with industrial development plans. The plans for higher

[20] Institute for Scientific Research on Economic Reforms. http://ier.az/view.php?lang=en&menu=0&submenu=224&id=497

education and for specialized secondary education are agreed with the regional executive committees. The order determines volume and structure of education and training supply, specifying the number of graduates by areas of qualifications and by professions. The order takes into account the average annual change in the quantitative and qualitative composition of workers, business plans of organizations, forecasts of local administrations, industry development programmes. Requests are then classified by functions and qualifications in line with the National Classifier of the Republic of Belarus "Specializations and Qualifications", approved by the Ministry of Education. Public authorities, if necessary, make proposals to the Ministry of Education for the inclusion of new and (or) the cancellation of out-dated specializations or qualifications.

Forecasting is initiated by public authorities one year before the adoption of the next five-year plan. It covers a time horizon of 10 years as concerns specialists with higher education and skilled workers and professionals with specialized secondary education, and of 5 years as concerns workers with technical vocational education. Educational institutions are monitoring and reporting on admission quotas to the Ministry of Education on an annual basis.

Source: (Zagoumennov, 2014)

To compensate the shortcomings of the top-down approach, Belarus authorities have recently promoted a bottom-up approach, bringing together on a regular basis not only line ministries and public authorities but also relevant stakeholder from the civil society. This initiative covers TVET, specialized secondary education as well as higher education and focuses on the development of a competence-based approach.

Georgia

In Georgia, the development of a skills anticipation system is still in the very beginning. 14 Sectoral Councils in charge of elaborating occupational standards will also engage in skills anticipation. Several studies were carried out, mostly through donor-funded projects (IOM, GIZ, USAID, World Bank[21]). These studies provide situational analysis and explore existing challenges and drawbacks with regards to labour market needs and employment perspectives in Georgia. Among these were also studies analysing the supply side (VET provision), carried out by the GIZ. A first tracer study of VET graduates was conducted by the World Bank in 2011.

Recently the Caucasian Research Resources Centers (CRRC) conducted the so called STEP[22] survey using the World Bank methodology of skills measurement, exploring cognitive, technical, and non-cognitive skills. skills contents of jobs, educational background of job-seekers, and working conditions. According to the national expert, these studies did not yet result in contributing to a more sustainable anticipation practice. Lack of relevant data both on the supply and on the demand side are regarded as main obstacles for establishing robust skills anticipation practices in Georgia (Maisuradze, 2014).

The Ministry of Education and Science of Georgia plans to launch a systematic tracer study of VET graduates as part of its ambitious new VET strategy. A large project financed by the Millennium Challenge Cooperation, an US development agency, plans investing 140 million USD in education, in the science, technology, engineering, and math (STEM) fields, based on a skills gap assessment[23].

[21] IOM- International Organization for Migration, GIZ – German International Cooperation, USAID – United States Agency for International Development.

[22] Skills Toward Employment and Productivity (STEP) Skills Measurement

[23] http://www.mcc.gov/pages/countries/program/georgia-compact-ii

Moldova

Regular skills anticipation methods are not yet adopted in Moldova; there are only short term forecasts for the labour market. However, the public employment service makes efforts to improve matching of skills and jobs, using a range of active employment measures (training, job fairs, career counselling) and also engages in a 'mobility partnership' to better match skills of migrants and jobs (see the box below).

Box 6: Example of skills anticipation and matching - Moldova

Mobility partnership to optimise job matching of migrants

The mobility partnership joins together Moldova with EU countries – the main destinations for Moldova's out-migration. It is coordinated by the Moldovan Ministry of Labour, Social Protection and Family and the National Employment Agency (NEA). Main target groups of the partnership are returning Moldovan nationals, Moldovan diaspora members involved in circular migration, their families, communities of settlement upon return and potential migrants. Private sector actors include the civil society organisations active in migration, employer's organisations, trade unions, academic institutions and private employment agencies. Lack of job opportunities has driven many Moldovans abroad in search of better incomes. Moldova has experienced the second highest out-migration among all EaP countries after Armenia: Moldovan migration stocks counted 13% of the population in 2000 (WDI). The main objectives of the mobility partnership are to strengthen the capacity of Moldovan authorities to manage return migration and support the social and economic reintegration of Moldovan citizens returning from abroad; to better inform the Moldovan population on the possibilities of working and living legally in the EU; and to enhance the capacity of Moldovan Diaspora Associations to better maximise links between migration and economic and labour market development in receiving countries and in Moldova.

Source: Andersen/Feiler/Schulz, 2013

Ukraine

Ukraine gained experience in a relatively wide range of skills anticipation tools. At the macro level, macro-economic projections are performed regularly. Projections are mainly used for 'state orders', the top down allocation of resources and number of students for higher education and VET providers. Ukraine has also started activities to identify skills demands at the employer side, gathering data about business expectation, and conducting sector specific skills studies in the ITC sector (ETF pilot project, box 7). The ETF has agreed to support the Ministry of Economic Development and Trade in developing a skills forecasting methodology which after piloting (in 2015) will be used for mid-term skills projections in the country. It is hoped that these initiatives are adopted by national actors and become a regular practice.

Box 7: Example of a sector skills analysis - Ukraine

Skills demand analysis in Ukraine – ICT industry sector study

It was initially planned to focus on the coal sector with mostly state-owned and state subsidised coalmines. Because of lack of acceptance by the Ministry of Energy and Coal Industry, another sector was chosen. The newly selected ICT sector was characterised by privately owned enterprises and working with this sector did not require a high degree of involvement from any state agencies or ministries.

The ICT industry sector study aimed at i) developing and testing a labour demand analysis methodology for a particular sector; ii) conducting a representative survey of enterprises in a sector to analyse skills demand; iii) presenting the results of the survey to Ukrainian stakeholders and discussing them as a potential approach about assessing future skills demand

The original project design for the study was therefore a combination of primary data collection, including the survey of employers, and desk research based on available official data from the State Statistics Service and the State Employment Service.

The employer survey for the ICT sector consisted of a quantitative survey of 100 randomly sampled enterprises. The data collected for the survey was representative for the selected sector at national level. The sample of enterprises was representative for the employees of the telecommunications industry (excluding the postal service). The sample for this survey was based on data provided by the State Statistical Service, which reflected a distribution of staff in the telecommunications sector in the regions (oblasts) of Ukraine. The plan was to survey all large enterprises plus SMEs that were to be sampled.

One interview was conducted at each enterprise, except for the largest companies, where representatives of regional branches were also surveyed. Chief executive officers, their deputies or human resources managers were considered as potential respondents in this survey. The data for SMEs and large enterprises was analysed separately because these companies have tremendously different characteristics.

The study for the ICT sector included a number of components and aspects:

- **Assessment of the general economic characteristics and circumstances of the sector.** During the first phase of the study, the structure of the ICT sector was analysed. It examined parameters such as occupational structure; types and amount of production outputs; sector income structure and sector expenditure. The desk research method was used to execute this research component. Available statistical data sources from the State Statistics Service were used in the analysis.
- **Review of the sector's workforce**. The review covered: expectations for employment in the sector and factors that influence it; unfilled vacancies; deficit professions and skill requirements and how these might change; and strategies used to overcome personnel-related problems. The survey method was used to realise this research component.
- **Review of training provisions**. The review covered current public training provision for occupations in the sector as well as human resources development practices used by enterprises. The desk research method was used to execute this research component. Available statistical data sources from the State Statistics Service, the State Employment Service and the Ministry of Education, Science, Youth and Sport were used in the analysis.

cont./.

Key findings

The employer survey delivered various key messages about the sector: Outsourcing was identified as a key issue leading to significant changes in employment levels and structures. Unfilled vacancies in key areas were identified as a problem, especially for larger companies. There was a perceived gap between skills required and what education and training providers were delivering, but cooperation with such institutions by employers is rather limited.

Policy conclusions and lessons learned

Ukraine does not have a national or sectoral system for anticipating skills needs. This t was a pilot project for Ukraine and only covered the ICT sector. The sector partners evaluated the project as extremely important for their industry and considered that such surveys could serve as a checkpoint for the sector. It was also stated that there was a need for skills forecasting projects in different sectors of the Ukrainian economy.

The current national statistics system managed by the State Statistics Service does not contain the data needed to develop forecasts for skills demands. The same is true of information gathered by other state agencies (e.g. the State Employment Service). Legislative limitations (information confidentiality) are also an issue, i.e. agencies have the relevant information but cannot provide it. On the other hand, state statistics are sometimes perceived as unreliable and of low quality.

It is evident that a qualitative approach, using modifications of tactics such as scenario techniques and Delphi methodology, will be most useful and cost-efficient for anticipating skills in the near future in Ukraine.

Source: The author thanks the ETF for providing this case study. It will be published in the forthcoming ETF-Cedefop-ILO publication: Wilson, R.A., Tarjani, H., Rivoha, H. (2014). *What works at sector level. Guide to anticipating and matching skills and jobs.* volume 3.

4.2 Preliminary gap analysis

The brief synopsis below shows that most practices can be found on the meso-level, and that long-term anticipation of skills, beyond five years, is not a common practice.

Figure 8: Frequently used skills identification and anticipation practices in the EaP countries

<table>
<tr><th></th><th>Short term
< 1year</th><th>Mid-term
>1 to 5years</th></tr>
<tr><td>Micro-level
(people, work places, enterprises)</td><td colspan="2">Qualification, knowledge-skills-competences needs assessment at company level, transition from education to employment
- Tracer studies y for VET graduates (occasional)
- Local employer surveys and studies about skills demands (occasional)
- Mobility partnership (MD)
- School-to-work Transition Surveys (ILO Work4Youth Project, UA)</td></tr>
<tr><td>Meso-level
(sectors, regions, intermediary actors: public employment services (PES), education and training providers)</td><td>Employer surveys; vacancy monitor
- Public enterprises' reports on workforce demands (regular)
- Employer surveys conducted by PES (regular, various methods)
- Short-term qualification and occupation projection
- Short term labour market projections by PES or ministries of labour
- Ad-hoc studies by international and bilateral donors
- Business tendency and business expectation surveys</td><td>Sector studies, region specific skill needs analysis
- State order for higher education and VET, resource allocation and student quotas (all but Georgia)
- Sector skills councils for priority sectors
- Labour demand studies at sub-regional or sector level (occasional)
- Mid-term qualification and occupation projection</td></tr>
<tr><td>Macro-level
(Government level, economy, education and training-system)</td><td></td><td>- Qualitative methods (expert panels, Delphi, Scenarios)
- Formal quantitative projections or forecasts
Quantitative methods:
- Macro-economic projections for state orders
- Various qualitative methods used for national strategy development
- AZMOD (test phase, AZ)
- PROST (WB tool for labour market and demographic analysis and projection, AZ)
- SONIA (Inter Industry Macro model for Employment Projections (UA)</td></tr>
</table>

Source: national reports

Based on the practices and procedures reported by the national experts, the following preliminary analysis of gaps can be made, and options for further development suggested.

- **Practices and procedures on the micro-level, directly dealing with individual labour market participants (people, enterprises)**

The merits of these bottom-up procedures are two-fold: a) they contribute to better understanding of what is happening in the field, what is expected and needed at workplaces and schools, and b) they can have a guidance and information function for people (students, entrepreneurs).

Stocktaking of the practices applied show that **tracer studies, school-to-work transition surveys**, and **local employer surveys** are conducted rather occasionally, sometimes as first phases of a larger project or programme. These practices are often carried out by international or bilateral donors, but rarely become a regular practice with sustainable affects.

***Possible constraints*:** bottom-up practices require institutional capacities and resources that may not be available to schools, local employment offices or social partners. Small- and medium sized enterprises and the informal sector may be important as job-creating employers, but are difficult to reach.

***Options for further improvement*:** enhancing regular communication between employers and education and training providers, between employers and local employment offices; making schools responsible for monitoring alumni's labour market entry; taking advantage of lessons learnt from pilot implementations.

Financial incentives and disincentives are also good options for gaining more influence on educational choices of individuals. An example is Moldova that tried to redirect students' choices from higher education to VET by increasing the financing of VET and limiting enrolment quotas in higher education (Lassnigg, 2012). A similar approach is taken by Ukraine, where free study places are limited, thus attempting to reduce over-supply of graduates in specific fields (Lisogor, 2014).

- **Practices and procedures on the meso-level, involving sectors, regions, intermediary actors (employment services, education and training providers)**

Most common is the '**state order system'** which is inherited from the times of central planning. State orders are defined by the government to allocate resources and quotas for study places to educational institutions in VET and higher education. The top-down planning method uses reports about labour demand collected from state-owned enterprises and regional governments (see box 5 for more details). As a traditional tool of manpower planning, it was not always successful in tackling the mismatch problem. Respondents to the stakeholder questionnaire often claimed that results from traditional methods are not reliable.

Most public employment services conduct **employer surveys** (applying various methods – with varying response quotas and results), and carry out **short term labour market outlooks** which are mainly used for programming active labour market measures (public works, training courses). The access to information about vacancies is very limited in terms of quantity (few employers report their vacancies to public employment services) and quality (requested skill profiles are not clear enough defined).

There are few sector skill studies, conducted occasionally, and they tend to be initiated and carried out by donor organisations.

***Possible constraints*:** low institutional capacities and resources of employment services and of employers' organisations and other key actors at local level. There is not enough information about the state order system available, but it may be claimed that it rather tends to confirm existing rigidities of the education system.

***Options for further improvement*:** strengthening sector skills councils, developing vacancy monitoring systems that include not only formally reported vacancies (including more private companies, cooperating with private employment service providers, analysing private job-search portals, etc.); making better use of proven and tested good practices in other countries, making more research capacities and technical assistance available.

- **Practices and procedures at government level, system level, policies**

Long-standing experiences of EaP countries in conducting **formal, quantitative forecasts** may be a distinctive strength. There are well tested practice approaches in use in most countries, but many questionnaire respondents claimed, there is a doubt about the reliability and accurateness of results. New approaches have been recently developed.

Options for further improvement: Evaluating current anticipation practices; making use of internationally proven and tested good practices; exchange of practices and experiences (peer learning).

- **Data availability**

A shared assessment is that there is a lack of robust data, specifically about employers' demands. Most countries (e.g. Azerbaijan, Belarus) collect data mainly about the supply side. On the demand side, data about public enterprises are collected and available, but as the private sector grows, the information gap is also growing. A frequently used method is that PES collect data about employers at local levels and aggregate the data. This is good and necessary but provides very limited reliable data about the future. The information gained is relevant for job matching at local level, but not for forecasts (Charkazov, 2014).

***Possible constraints*:** gaps in methodology, shortage of capacities, difficulty to reach employers and to convince them. The problem starts with the lack of data about establishments. Company registers are not covering all establishments or are not accessible (small and micro enterprises may not be registered at all). Informality adds to this problem.

Options for further improvement: Improved data collection and coverage at enterprise level, in close cooperation with employers' organisations. As suggested by Georgia and Moldova, a labour market observatory may be an important step in the right direction. It is not enough to publish data. Analysis and debate about data is needed to transform them into information and to create an evidence base appropriate and necessary for further action.

5. Institutional settings and policy analysis

This section focuses on the institutional settings, on the role of key policy actors in skills anticipation and matching.

All countries have adopted national key strategies, setting the frame for overall social and economic development. These strategies do not explicitly cover the skills dimension but constitute a basis for skills anticipation, that allows integrating not only 'what is likely to happen', but also what is strategically desired to happen.

There are two main systemic gaps challenging effectiveness of anticipation: First, there is an '*institutional gap* between education and employment, which must somehow be bridged if policies of matching and anticipation are to work efficiently.' (Lassnigg, 2012). Consequently, key actors at the national level are the ministry of education and the ministry of labour. Second, there is a gap between institutional actors and the (private) business sector. Weak cooperation between the education system and businesses is a common phenomenon.

As shown in the national report, key actors in the EaP countries are the line ministries for economy, education, and labour, and the state statistical services. An important role adheres also to employers' representatives and trade unions, and to government agencies like the public employment services (often part of the ministry of labour), VET agencies and agencies for higher education. Research organizations and think tanks should also be regularly involved. The most frequent form of employers' involvement is participation in regular surveys of their personnel and skills demands. Large, public employers are contributing to the annual elaboration of state orders for higher education and VET. So far, employers do rarely play a regular role in offering work-practices or internships as part of education curricula.

The following information is drawn from 28 stakeholder questionnaires received:

The role of *ministries of labour and PES*: PES in the EaP countries are part of the ministries and usually not separate government agencies. There is awareness of the need of regular skills assessment and forecasting procedures and that skills anticipation needs to be developed.

Ministries of Education and related agencies and institutions of VET, general education and higher education play an important role in administrating, reforming, modernising and controlling the quality of the education system. Agencies play an important role in developing occupational standards, qualification frameworks and training standards, as well as in certification and quality assurance of qualifications. But according to the questionnaires received, they play no role at all (or at least no leading role) in labour market oriented forecasts.

Social partners' involvement: employers' federations should play a key role. Most active seem to be the federations of Armenia and Ukraine. A constraint is their limited representativeness, mainly concerning SMEs. They are generally members of tripartite bodies, but some are claiming that their influence on policies is limited. Trade unions play a very limited role.

The questionnaire inquired also about **green skills**. Green skills were rarely considered by the interview partners. Only Georgia (that mentioned development of a sustainable, green economy as strategic goal) and Armenia (mentioning training for green skills) replied positive to the question about green skills. This response is not surprising, given that the terms 'green skills' and 'green jobs' where

not explained in the questionnaire[24]. The term 'green' thus appears as somehow imprecise catch phrase. A meaningful approximation to green skills would need to be more thoroughly explored, inquiring about the state of play concerning national green policies and the development of methods for measuring green jobs (Hogarth, 2012).

As institutional capacities and research capacities are low, projects and methods introduced by **international organisations and by bilateral donors** play a large role. Both the methodological technical support and the financial funds seem to be important.

The questionnaire also inquired about *translation of information about current and future skills into policies.* There is high, shared awareness about the need of robust skills assessment and forecast data for policy design. Most important here is the 'state order' system, which shapes future skills supply. The respondents also highlighted the importance of qualification frameworks for the development of training programmes. PES use the information to design labour market training courses that are demanded by employers.

Coordination and governance systems. Lack of coordination is frequently reported, but there are also coordination mechanisms in place, like contact points for inter-ministerial cooperation, and ad hoc but frequent working group meetings. A positive example reported is the national VET council in Georgia. Lack of capacities is viewed as an obstacle for vertical cooperation (between national, regional and local levels), and among social partners. Leadership is an issue: the question is who is responsible for coordination. There are functional top-down mechanisms (e.g. Belarus, Azerbaijan), as well as bottom-up initiatives which are more difficult to coordinate. A dedicated coordinating body, as discussed and proposed at the Turin meeting, could be a solution, but is certainly not a panacea. Such a body or committee needs to be empowered with a clear mandate and made accountable. A symptom that confirms this lack of coordination is that fact that – according to the questionnaires – many stakeholders do not even know about past or on-going skills assessment and anticipation practices when they are not directly involved.

It can be concluded that there is an on-going quest and search for methods to implement or further develop skills assessment and skills anticipation, and that there is a high demand for technical support and mutual learning. Translating future skills information into effective policies and practices is a challenging task requiring joint actions. It will be more successful if the issue of vertical stakeholder involvement is solved and if social partners actively participate.

A conclusion widely shared by stakeholders from all six countries in the ETF Turin meeting was that a coordinating body should be assigned. Another conclusion was that exchange of experiences and mutual learning are important. The network established in Turin was an important stepping stone for exchanging experiences and for integrating EaP countries with EU work and EU networks.

Another important success factor for effective skills anticipation is the existence of an overall macro-economic policy. Macro-economic visions give the direction for the desired development goals, which are as much important as knowing what is likely to happen. All countries have mid-term or long-term policy strategies, as laid down in national strategy papers, like the National Poverty Reduction

[24] The United Nations Environment Program (UNEP) defined 'green jobs' as: 'work in agricultural, manufacturing, research and development, administrative, and service activities that contribute substantially to preserving or restoring environmental quality(….) this includes jobs that help to protect ecosystems and biodiversity; reduce energy, material, and water consumption through high efficiency strategies; de-carbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution.'((UNEP), 2008). http://www.unep.org/civil-society/Implementation/GreenJobs/tabid/104810/Default.aspx

Strategy Paper, National Development Strategies, etc. These strategy papers are indeed relevant for skills but they are usually not specific enough to quote them as 'skills anticipation practice'.

Ambitious and at the same time realistic goals for human resource development are needed to go beyond problem-solving. As it was observed by a national expert, it is important to note that a reactive approach is dominant in skills anticipation. Currently only after-the-fact responses to emerging situations are observed, usually with a short time perspective, as projections derived from labour market analysis often have a one-year horizon. Building common understanding of the benefits of proactive approaches among stakeholders would be an important starting point for the further development of skills anticipation. (Charkazov).

Armenia

Armenia is applying the state order system to influence education supply, and the PES is regularly disseminating labour market outlooks. An important role adheres to employers' representatives (RUEA), and some initiatives carried out by donors (Navoyan, 2014). Coordination needs to be improved. A government decree on skills anticipation is being prepared.

Azerbaijan

Azerbaijan is already developing and implementing a range of methods and practices that constitute a backbone of an effective skills management system, e.g. qualification standards, quantitative mid-term macro-economic forecasts, as well as a clear vision for priority sectors of the national industry. The mismatch problem could be further tackled by establishing sector skills councils for the key sectors identified, with a stronger involvement of social partners. A big step forward would be the establishment of a planned 'Manpower Development Agency', with a clear mandate to coordinate all relevant initiatives in the field. (Charkazov, 2014)

Belarus

Two main policies are implemented to tackle the mismatch between the skills demand and skills supply, characterized by their different orientations of policy design. The first one is traditional for Belarus and involves top-down management of the supply of education capacities based on long-term forecasting. The second is a bottom-up approach recently adopted by the Belarus authorities, involving not only the traditional actors such as ministries and regional authorities but also other stake holders at local, regional and national levels. A policy for continuous training and retraining is applied to achieve more immediate results. Additional formal and informal training courses are offered to better adapt skills of the workforce to labour market needs. This approach potentially offers a more flexible response than top-down forecasting as skills mismatches and shortages emerge faster than the centralized Belarus education system can respond. The concept of Sector Skills' Councils has been piloted in the ICT sector. (Zagoumennov, 2014)

Georgia

Apart from recently signing the Association Agreement with the EU, Georgia signed a Financing Agreement with the EU totalling a EUR 27 million budget support for poverty reduction and sustainable socio-economic development in 2013. Objectives of the five year programme are supporting national authorities in designing, coordinating and implementing labour market programmes and monitoring skill needs in close partnership with the private sector, improving the VET system, and addressing gender issues. The programme joins together all relevant government bodies and social partners to adopt ownership over the process. Together with a large MCC Compact II programme and in combination with the VET Reform Strategy 2013 – 2020, and the 'Socio-Economic

Development Strategy – Georgia 2020', a big step forward in developing and making better use of human capital should become possible. (Maisuradze, 2014)

Ukraine

Also Ukraine's system of steering the education supply system – the 'state orders' – is legally regulated. The legislative basis for forecasting, developed by the Ministry of Economic Development and Trade, is the Law 'On the formation and placement of state order for training, scientific, educational and job training, skills upgrading and retraining' (20/11/2012 # 5499-VI). According to this Law, the state order has to be based on the forecast of labour market needs. Mid-term projections are to be elaborated by the Ministry of Economic Development and Trade on the basis of statistical data of the State Statistical Service of Ukraine (Labour Force Survey and administrative data), proposals of ministries and government agencies, employer's confederations and trade unions. The methodology applied was approved by Order of the Ministry of Economic Development and Trade 'On approval of methodological approach to form mid-term anticipation of labour market skills needs' (20/03/2013). The forecast will focus on the demand for skills by economic activity and by occupations, economic sectors and sub-sectors. The Ministry of Social Policy with its State Employment Centre is responsible for short term labour market projections. (Lisogor, 2014)

Improvement of the statistical data basis is regarded as an issue. A precondition among others is the development of occupation standards. The (private) research initiative of IZA seeks to contribute to solving this problem of insufficient data with the ULMS project (see box 1). Other problems are lack of cooperation between ministries and between employers and the education system. Companies (specifically SMEs) are reluctant to offer company based training. Existing sector skill councils (metallurgy and chemical industry) should engage more actively in anticipation activities. (Lisogor, 2014)

6. Conclusions and key messages

This first stock-taking has confirmed that policy makers and civil society stakeholders in the EaP countries are highly aware of the need to anticipate future demand and supply of skills. A skilled and competent workforce is a key condition for creating more and better jobs and increasing the competitiveness of enterprises as well as national economies.

It is evident that the supply of skills and the demand of the labour market are not matching well. The mismatch problem contributes to high unemployment, even among young people with higher education levels, and to skills shortages that limit the growth of enterprises. Mismatch is also a result of influences outside the skills dimension (territorial disparities, lack of geographical mobility, wage levels, institutional uncertainties), but skills are a key factor.

Mismatch is commonly explained in terms of 'the idea that education has to change its direction in order to adapt to the needs of economic development' (Lassnigg, 2012). But this is a one-sided view. More needs to be done as well on the demand side. For example with policies that support enterprises to enhance their human resource management practices, e.g. recruitment and staff development practices. Targeted approaches with incentives and advisory services may be needed to support modernization and restructuring of large companies, but also to upgrade management capacities and boost growth of small enterprises.

There are albeit differences in the state of play concerning policies and practices to identify and anticipate future skills supply and demand. International organisations and bilateral donors have supported pilot approaches to better link education with the labour market. These projects have not always led to create sustainable and regular practices. There is wide-spread experience in mid-term planning, and some countries have recently adopted state of the art approaches for formal, quantitative forecasts. All countries are highly committed to creating more coherent and coordinated skills anticipation systems.

Skills needs identification is the basis for anticipation. Robust data are needed as well as standards and structures for measuring indicators. Developing occupation standards, National Qualification Frameworks (NQF), establishing functional skill councils for key sectors are on-going processes in all countries. Data gathering from the side of the private business sector is a challenge and should be given higher attention.

There is no universal road toward a perfect skills anticipation system. And there is no perfect forecast that can eliminate uncertainties. But regular anticipation practices help understanding how skills systems function and what is likely to happen. Each country needs to decide where to set priorities for achieving an effective system and needs to design its own tailor-made approach.

The participants of the first network meeting (skills matching experts and government officials from the Eastern Partnership region met in June 2014 in Turin) emphasised the importance of improved coordination among different stakeholders and the creation of a coordinating body at national level to work on anticipation and matching of skills supply and demand. Exchange of experience and sharing practices and methods across the countries were appreciated and valued by all participants in spite of different country contexts, the stage of their development and capacity as well as the implementation and use of different anticipation and matching methods. In addition to common objectives identified for the network the countries came to the following preliminary conclusions and proposed these priority actions:

Armenia plans defining a coordinating institution. Key partners should be the line ministries and the ministry of finance; a network should be created, including also think tanks. First step will be revising existing functions and structures, further actions should be built on what already exists.

Azerbaijan is considering creation of a single database coordinated by the State Statistical Committee; missing occupational data are to be completed. Stakeholder activities and qualitative approaches should be better coordinated (by the Ministry of Labour). Regulations are needed to define roles and responsibilities of stakeholders.

Belarus plans developing and sharing experiences with other countries. Access to financial and technical support constitutes a challenge. Belarus intends also enhancing coordination among stakeholders; the local level needs to be empowered. Information flows should feed into decision making. An analytical centre should be set up. Appropriate software is needed and users need to be trained, applying international standards. The government order system is seen as a strong approach, working both ways bottom up and top down, but the system is too complex. Other alternatives are considered, like voucher systems or other forms of incentives.

Georgia plans establishing a labour market observatory. The initiative is supported by key line ministries (Ministry of Education and Science, Ministry of Health, Labour and Social Affairs, and the Ministry of Economy and Sustainable Development), and will start with emphasis on labour market information, skills identification and improved information about the demand side. Coordination of line ministries is important. A monitoring body responsible for coordination is planned; its exact organisational structure is not yet decided. Research capacities should be further developed.

In **Moldova,** more detailed information is needed on specific sectors like the construction industry. Regular tracer studies are planned, as well as employer surveys with the public employment service as coordinator. The creation of a monitoring network will involve line ministries, sectorial committees (five are already in place) and social partners. A law foresees the creation of a labour market observatory.

Priorities for **Ukraine** are the improvement of data bases and the development of a coherent forecasting method. The appropriate institutional structure with an analytical unit would need to be set up and will function under the coordination of the Ministry of Economic Development and Trade.

Three general recommendations are highlighted:

1. **Improving the data basis for skills anticipation**

   Robust data from different sources and standards are needed. To this end, coherent labour market information systems (LMIS) should be the goal. To make best use of data, publication is not enough. Relevant actors should be brought together for discussing and planning coordinated actions.

2. **Developing a combination of approaches**

   Different methods are needed to meet diverse needs of different labour market actors, combining various levels and time horizons. A mix of top-down and bottom-up approaches, combining strategic policy measures with actions driven by market mechanisms helps tackling mismatches.

3. **Regular coordination of actors**

   As many actors are involved in skills anticipation, their roles must be clearly defined and coordination is needed. The coordinating body needs a clear mandate and be accountable to the top policy level. Such body could function as platform for dialogue, avoid redundancies, create synergies, and ensure that practices are in line with government strategies and macro-economic priorities. There might also be a need for specific working groups, e.g. coordination groups for statistics, for sector skills councils, etc.

These key recommendations are in line with plans for further work of the ETF network, where participants stressed the need to establish national coordinating bodies and made first informal commitments in this direction. For next year's agenda, it was decided to organize workshops about labour market information systems and employer surveys as well as on interagency cooperation models which involve also the business sector.

Annexes

A1 Bibliography

Andersen, T.; Feiler, L.; Schulz, Gregor. (2013). *A practical guide for employment service providers on matching and anticipation of skills*. European Training Foundation, publication forthcoming.

Anderson, T. et. al. (2010). *Anticipating skill needs of the labour force and equipping people for new jobs. With role for Public Employment Services in early identification of skill needs and labour upskilling? Under contract to the European Commission, DG Employment.* online.

Antonov, V. (2014). *Report on current practices in anticipation and matching of skills in Moldova. Working paper.*

Bardak, U. (. (2011). *Labour Markets and Employability; trends and challenges in Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine.* European Training Foundation.

Cedefop. (2008). *Terminology of European education and training policy.*

Charkazov, A. (2014). *Report on current practices in anticipation and matching of skills in Azerbaijan. Working paper.*

ETF. (2014). *Concept note on labour market information system in Georgia. Draft of July 2014, prepared by M.Lubyova and A. Diakonidze, ETF WP 2014 Country Project Georgia. .*

Eurostat. (2013). *European Neigbournood Policy Countries. Essential macro-economic indicators. 2013 edition.*

Eurostat. (2014). *European Neighbourhood Policy - East countries. Youth statistics. 2014 edition.*

Feiler, L. et. al. (2012). *Anticipation and Matching Demand and Supply of Skills in ETF Partner Countries.* ETF position paper.

Gatelli, D., & Johansen, J. (2012). *measuring mismatch in ETF partner countries. ETF working paper.*

Hogarth, T. (2012). *Green Jobs and Green Skills in Europe. Moving towards a statistical definition of green jobs*. ILO, Geneva 27-28 November 2012.

Lassnigg, L. (2012). *Synthesis of national reports on maching and anticipating skills demand and supply.* ETF working paper.

Lehmann, H., Muravyev, A., & Zimmermann, K. (2012). *The Ukrainian Longitudinal Monitoring Survey:towards a Better Understanding of Labor Markets in Transition.* IZA .

Lisogor, L. (2014). *Report on current practices in anticipation and matching of skills in Ukraine. Working paper.*

Maisuradze, L. (2014). *Report on current practices in anticipation and matching of skills in Georgia. Working paper.*

Navoyan, A. (2014). *Report on current practices in anticipation and matching of skills in Armenia. Working paper.*

UN/DESA. (2014). *World Economic Situation and Prospects 2014.*

UN/DESA. (2014). *World Ecoonomic Situation and Prospects 2014.*

UN/UNEP. (2008). Green Jobs: Towards decent work in a sustainable, low-carbon world.

Wilson, R.; Zukersteinova, A. (2011). *Anticipating changing skill needs: a master class.* Technical reference document to support the New Skills Network event held in Budapest on the 9 and 10 June 2011

Zagoumennov, I. (2014). *Report on current practices in anticipation and matching of skills in Belarus. Working paper.*

.

Weblinks:

EUROSTAT,
http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home

EUROSTAT, ENP East
http://epp.eurostat.ec.europa.eu/portal/page/portal/european_neighbourhood_policy/enp_east/data/database

ILO labour statistics: ILOSTAT database and Key Indicators of the Labour Market 8th Edition (KILM)
http://www.ilo.org/global/statistics-and-databases/lang--en/index.htm

International Finance Corporation / The World Bank: Doing Business 2014:
http://www.doingbusiness.org/reports/global-reports/doing-business-2014

CISSTAT - Interstate Statistical Committee of the Commonwealth of Independent States:
http://www.cisstat.com/eng/

UNDP Human Development Reports: http://hdr.undp.org/en/data

UNESCO Institute for Statistics: http://www.uis.unesco.org/datacentre/pages/default.aspx

World Bank World Development Indicators:
http://data.worldbank.org/data-catalog/world-development-indicators/

A2 List of tables and figures

A3 Data availability in the EaP region

The following table is a compilation of the tables submitted in the national reports.

Data bases and statistics

Country	*Labour Force Survey*	*Household Survey*	*Establishment survey*	*Labour market statistics (mainly administrative data)*	*Education statistics*	*Other*	*Labour market, other*
Armenia	✓ Integrated Living Conditions Survey (samples households) contains data on employment	✓ Integrated Living Conditions Survey (samples households)		✓ Employment and unemployment, quarterly; also a section of the Statistical yearbook of Armenia ✓ Administrative data of the State Employment Service (SESA) comprising jobseekers and vacancies, monthly	✓ Education and Culture; a section of the Statistical yearbook of Armenia, yearly ✓ directories on VET and VET providers, yearly		✓ Employment and wages, 'Social Situation in Armenia', monthly (state statistical service) ✓ employer survey, bi-annual, conducted by SESA
Azerbaijan	✓ LFS, quarterly, online	✓ quarterly, online		✓ Labour market report, monthly, quarterly and yearly, limited circulation	✓ yearly, online, detailed and disaggregated data		
Belarus	✓ Sample Household Survey on Employment Issues, not published	✓ Sample Household Living Standards Survey, short summary online		✓ National Unified Vacancies Database, (regional and local governments vacancies), regular, online	✓ regularly, yearly, online	The National Legal Internet Portal, contains business, foreign trade and investment policy legislation of the Republic of Belarus	Small and Medium-Sized Business in the Republic of Belarus, yearly
Georgia	✓ Labour Force Statistic from the quarterly Integrated Household Survey (IHS), online	✓ Integrated Household Survey (IHS), online	✓ Establishment survey - business statistics for small and medium-sized non-financial corporations; Establishment surveys - social	✓ Labour market in Georgia (employed and unemployed), annually, online	web portal with information about general education, VET and HE providers		Internet portals for jobseekers and vacancies (worknet.gov. ge, jobs.ge, hr.ge, hr.gov.ge)

Country	*Labour Force Survey*	*Household Survey*	*Establishment survey*	*Labour market statistics (mainly administrative data)*	*Education statistics*	*Other*	*Labour market, other*
			statistics for selected non-profit organizations serving households				
Moldova	✓ Labour force in the Republic of Moldova. Employment and unemployment, annual, pdf and database online	✓ Household Budget Survey, database online	✓ Enterprise survey conducted by the World Bank	✓ Annual Labour Market Forecast, prepared by the National Employment Agency (NEA), applying the Swedish forecast model	✓ Education Statistics, disaggregated data, Database online		✓ Labour market in the Republic of Moldova, annual, pdf online Other publications about gender issues, child labour, migration
Ukraine	✓ LFS, quarterly, aggregate data online			✓ Unemployment statistics, State Employment Service (CES) administrative data, regularly, pdf online ✓ Skills mismatch (unemployed and vacancies by occupation), CES, regularly, pdf online	✓ Training (further training, retraining), yearly, online (State Statistical Service administrative data) ✓ Labour market training, State Employment Centre, yearly, online ✓ Key indicators of Higher Education and of VET establishments, yearly, online	✓ Migration Survey (WB) ✓ Ukrainian Longitudinal Monitoring Survey (ULMS), 2003 - 2007, research consortium	✓ Statistic about employment and wages in manufacturing industry, regularly, restricted dissemination

Note: Based on information by the national experts, verified online by the author. Grey entries are not considered by the author as databases that form part of a labour market information system (mainly web portals). The table does not include international survey conducted across all countries (BEEPS, etc.)

A4 Overview of skills anticipation practices used in the EaP region

Brief overview of existing instruments for anticipating skills supply and demand

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Armenia	State quotas and allocations	Ministry of Economy and Science (MES)	annual	Decree of the Government	Marco-level	MES proposes allocation quotas presented to the government for approval
	Job market research	Ministry of Labour and Social Affairs, State Employment Service Agency	annual		Macro-level, short-term	The aim is to forecast skills demands for the next three years. The research data are disaggregated by education level, age, skills
	Tracer study among VET graduates in Kotyak and Ararat Marzes of Armenia	Caucasus Research Resource Centre Armenia, funded by ETF	occasional, 2012	Survey among VET graduates, various fields of study.	Micro-level	The objective was improving knowledge about labour market relevance and outcome or various VET provisions. The survey targeted 451 graduates of 9 middle VET and 3 preliminary VET institutions of the years 2009 and 2010 in two marzes (regions) of Armenia. Due to lack of available data only 23.4% of graduates were reached[25].
	Research about graduates' careers in two marzes (regions)	UNDP Vocational Education and Training project and Institute for Political and Sociological Consulting	occasional, 2012	Survey among graduates, VET teachers, employers; focus groups with stakeholders and experts, data analysis.	Micro-level	The objective of this study was analysing labour market insertion of graduates, gaining feedback from employers on skills and competencies of the graduates. The survey covered 651 graduates from 25 vocational schools and 60 colleges, 400 employers, and 401 VET teachers and head masters.[26]

[25] ETF, 2012.Tracer Study of Recent Graduates from Vocational Education Institutions in Kotyak and Ararat Marzes of Armenia. Draft report. Turin, November 2012, Available : http://www.crrc.ge/uploads/files/research_projects/Tracer_Study_REPORT_eng.pdf

[26] UNDP, 2012. Tracer study Involvement of 2010-2011Preliminary and Middle Level of Vocational Education System Graduates in the Labour Market. Key results. UNDP Vocational Education and Training (VET) Project in Armenia, Yerevan, 2012, p. 4. Available: http://www.vet.am/res/Publications/Manuals/Tracer%20Study%20Report-eng.pdf

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Armenia	Survey of HE graduates' job placement	French University in Armenia (UFAR)	Ad hoc, 2013, to be renewed in 2014	Survey among graduates	Micro-level	The objective of this survey is assessing job placement of UFAR's graduates. 94% of the graduates of years 2005 to 2012 were covered.[27].
	Survey ''The relevance of higher education: graduates and the labour market''	Manasyan, N. Center of Quality Assurance at Yerevan State Linguistic University	occasional, 2011	Survey among students, graduates and employers	Micro-level	The objective of this survey was assessing the match of higher education qualifications with labour market requirements. The survey was carried out among 389 graduates (2010), 431 last year students, and 24 selected employers[28].
	Higher Education network on Human Capital Assessment and Graduates' Employability	Alma Laurea University Consortium, Union of Manufacturers and Businessmen (UMB(E)A)	n.a.			Applying the Alma Laurea methodology (Bologna, Italy)
Azerbaijan	AZMOD 4-year macro-economic forecast, using a balance method (including linear and dynamic regression),	The Institute for Scientific Research on Economic Reforms under the Ministry of Economy and Industry	Yearly, since 2013	Official statistics	Macro and meso levels Short- and medium term forecasts (4-5 years)	Balance models are developed on the basis of tax simulations. A Social Accounts Matrix, a core database of AZMOD covering 15 economic sectors was developed. The Social Accounts Matrix will be revised to include 19 economic sectors, and AZMOD will be updated on that basis. The model is currently being piloted. It requires relevant and detailed data, which is not usually available.
	Extrapolation Development of local employment programs	The Ministry of Labour and Social Protection of Population	Yearly, since mid-1990s	Administrative data collected by the State Employment Service (SES)	Macro and meso levels 1 year	Data collected by the SES offices is put together into an excel table and time series for only three years are processed using extrapolation to produce one-year forecasts. Expert assessments are also integrated here.

[27] French University in Armenia brochure 2012, p. 21. Available : http://ufar.am/U/images/stories/2013/Brochure_2013-2014_fr.pdf

[28] Manasyan, N. 2011. The relevance of higher education: graduates and labour market. (in Armenian), Centre of Quality Assurance, Yerevan State Linguistic University, Yerevan 2011. Available : http://www.osf.am/wp-content/uploads/2013/12/Nvard_Manasian.pdf

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Azerbaijan	Extrapolation Forecasts for state financing of higher education	The Ministry of Economy and Industry	Yearly, since 2010	Administrative data collected from line ministries	Macro level 1 year	Data collected from line ministries are processed to produce 1+3 years forecasts in line with the Presidential Decree on Application of the New Financing Mechanism at Higher Education Institutions. There are plans to reduce the time to 1 year only, as the results of 1+3 years are thought to be not very reliable.
	Labour market outlook	State Employment Service	annual		Meso leval	Information used to plan and implement local labour market programmes
Belarus	Supply of education capacities based on long-term forecasting	Ministry of Education in consultation with the Ministry of Labour and Social Protection, Ministry of Economy, Ministry of Finance, regional and local authorities	Since 2011, annual updates	The assessment and estimation procedure include different types of occasionally used methods (formal projections/ forecasts, sectoral studies/ projects, enterprise surveys, surveys among employees, graduates/ completers, informal procedures, etc.)	micro/ meso/ macro level mid-to long-term (5 years)	Top-down definition of the supply of education capacities based on long-term forecasting – five years national programs of social and economic development. Future skills needs are estimated. Conducted upon requests by public authorities , subordinates, and (or) accountable to the President of the Republic of Belarus, the National Academy of Sciences of Belarus, central government bodies, other state organizations subordinated to the Government of the Republic of Belarus, regional and Minsk city executive committees. Also private organisations and enterprises have the right to get involved in forecasting of manpower needs. The assessment and estimation procedure include different types of occasionally used methods (formal projections/ forecasts, sectoral studies/ projects, enterprise surveys, surveys among employees, graduates, informal procedures, etc.). Results are used by central or local government authorities to adjust the education and training systems in Belarus in line with expected future needs.
	Sector skills council for the ICT sector				Meso-level	Pilot phase
Georgia	Pilot survey on labour market needs in Georgia	GIZ (German International Cooperation)	Occasional (last in 2012)	Survey	sub-regional in 4 sectors (tourism, apparel, ICT, food processing	Various qualitative and quantitative methods were used. Key stakeholders were identified and interviewed (e.g. large companies, regulatory bodies, VET centres); desk research.

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Georgia	Sector skills committees	Ministry of Education and Science, National Centre for Educational Quality Enhancement (NCEQE)	Since 2009 Ongoing		Meso level	Elaboration of Professional Standards by Sectoral Committees. 14 sectoral committees under NCEQE are in charge of elaborating occupation standards. Key stakeholders including the MoES, NCEQE, VET Providers, Social Partners and field specialists participate in the process.
	Georgia Compact II	Millennium Challenge Corporation (MCC),Ministry of Education and Science and EMIS	Started 2013	Implementation based on a skills shortage assessment (method not known)	Meso level, national	MCC and the Government of Georgia signed a $140 million dollar compact to improve the quality of education in the science, technology, engineering, and math (STEM) fields and increase the earning potential of Georgians through strategic investments from the start of a student's general education to graduation from technical training and advanced degree programs. The compact includes a focus on increasing women's participation. Source: http://www.mcc.gov/pages/countries/program/georgia-compact-ii
	Tracer Studies among VET graduates	VET Providers and the National Centre for Education Quality Enhancement (NCEQE)	Start September 2014	Information about employability of graduates	Micro level	VET reform strategy envisages introduction of tracer studies in Georgia. The methodology was developed under the EU funded project on Capacity Building and Quality Enhancement Support Programme in the VET Sector of Georgia.
	Labour Market Analysis	Labour Market Observatory	Regulary, (planned)			The establishment of a Labour Market Observatory is planned as part of the the development of a Labour Market Information System
	STEP/Skills Survey	The World Bank and CRRC	First half of 2013	Includes supply and demand side, skills contents of jobs, educational background of job-seekers, and working conditions.	Meso level	Collected information includes household characteristics and a deep-probing interview with one household member who was selected randomly from the household members aged 14-65. The questionnaire consisted of several modules that provided rather complex and detailed picture of the individuals´ labour market status, education and skills, participation in non-formal learning, behavioral attitudes.

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Georgia	Caucasus Barometer	CRRC	annual	survey	Macro level	Regular household survey based on stratified random sampling drawn from the electoral lists. The sample does not have panel features and is drawn each year independently. The questionnaire contains information about labour market status of individuals.
	Labour Market studies	IOM, ISET	regularly	Workforce demand survey and labour market demand survey	Meso level	The study focused on the situational analysis of employers´ workforce requirements, their current and prospective demands for workforce by profession and specialty, identifying scarce professions, as well as needs and measures taken by employers to train their staff.
Moldova	Forecasting annual enrolment plan for university enrolment plans and educational establishments plan	Ministry of Education	Since 2007, Annual	Ministry of Labour, Social Protection and Family	Meso level, short-term	Higher education institutions present their plans of enrolment/admission annually to the Ministry of Education. The number of budget places is balanced with the data collected by the Ministry of Labour, Social Protection and Family.
	Labour market forecast	Ministry of Labour, Social Protection and Family and National Employment Agency (NEA)	Since 2003, annual	Administrative data of NEA, including territorial subdivisions	Macro and meso levels, short term	The results of the forecast constitute the base for relevant authorities and partners to set the trends for the upcoming period by developing new schemes and programs in the fields. It facilitates the matching of labour market needs with education supply
	Labour market analysis and trends (unemployment, activation programmes, vacancies)	National Employment Agency	Since 2003 Trimestral Last update January 2014	Administrative data of NEA, including territorial subdivisions	Micro level, Short-term	The labour market situation and outlook, covering unemployment and vacancies, Monitoring measures of employment and social protection of people looking for work performed by employment agencies
	Forecast of skill demands and vacancies	National Employment Agency	Since 2003 Last update May 2014	Administrative data of NEA, including territorial subdivisions	Micro level, short term	Analysis of job opportunities, demand and supply trends of labour market
	Assessment of links between skills and labour migration	ILO	Study, 2013	Study with quantitative and qualitative data	Micro and meso levels	Qualitative and quantitative research methods Estimating parameters; factor-analysis; index construction

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Moldova	Mobility partnership for migrants	National Employment Agency	Regular		Micro and meso levels	Objectives of the mobility partnership with EU countries are: to strengthen the capacity of Moldovan authorities to manage return migration and support the social and economic reintegration of Moldovan citizens returning from abroad; to better inform the Moldovan population on the possibilities of working and living legally in the EU.
	School-to-Work Transition Survey,	National Bureau of Statistics	First time conducted 2013,	a complementary module attached to Labour Force Survey	Micro and meso levels	The survey is a complementary module attached to Labour Force Survey, which was conducted in March 2013. The survey was organized and carried out thanks to the technical assistance from the "Work4Youth" project (W4Y - *youth work*) under the "Programme of International Labour Office (ILO) *Youth Employment*" project http://www.statistica.md/libview.php?l=en&id=4331&idc=30
Ukraine	SONIA (Inter Industry Macro model for Employment Projections of Ukraine	Ministry of Social Policy ILO and Project of Inter Industry Projections "INFORUM"	2009, occasional	Micro data for the central and local authorities about structure of labour force by occupations and economic activity, productivity growth	Macro level, mid-term	The data collected is used by Ministry of Social Policy
	Enterprise survey, Dnepropetrovsk Oblast	Dnepropetrovsk Oblast State Administration<, ETF Project "Improvement of VET provision through anticipation and matching of skills, social partnership and optimisation of resource utilisation"	2011-2012 occasional	Micro data for the employers about structure of labour force by occupations and economic activity, scale of firm training, productivity growth, optimization of VET network at regional level	Meso level, regional (Oblast), short-term	Survey covers occupational structure, scale of company-based training and retraining, and future workforce demands of enterprises, detailed list of occupations (by economic activity) − The data collected is used for state order formation at regional level
	State order in education	Ministries of Economic Development and Trade, Education and Science	Since 1991, yearly	Monitoring of the State Employment Centre (SEC), data of educational establishments	Macro level, short-term (1 year)	Takes into account the capacities of education establishments and fiscal constraints

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Ukraine	Labour Market Outlook	State Employment Centre (SEC)	Regularly since 2001	Administrative data about the unemployed, data on vacancies by occupation structure	Meso (oblast and sectoral levels) and macro level outlooks, short-term	Qualification and occupation projection, based on analysis of administrative data on unemployment, including trends Employer survey was recently introduced, gathering information about skills and workforce demand for the next 12 months
	Anticipation of skill demands (professionals and skilled workers);	The Ministry of Economic Development and Trade	Since 2013, regularly	Labour Force Survey, administrative data of SEC, data on skills demand from central and local authorities, employers' associations, trade unions	Macro / meso level (oblasts), mid-term	Middle-term projections of labour market skills needs for the formation and placement of state order for training, scientific, educational and job training, skills upgrading and retraining. Law "On the formation and placement of state order for training, scientific, educational and job training, skills upgrading and retraining" (20/11/2012 # 5499-VI)
	Labour demand assessment in the ICT sector	Kiev International Institute of Sociology (KIIS) ETF project	2010 occasional	Survey among employers in the sector about skills profiles of their current employees and future labour demand	Meso level, short-term	
	Labour demand of employers in the coal-mining regions*	Institute of Economic Research and Policy Consulting (IER) TACIS project (Coal Sector Support Project, Component C: Social Policy)	2009-2010 Ad hoc	Survey of employers in coal mining regions, but also including employers in operating in other sectors	Meso level, mid-term	Inquiry about changing labour demands with a 5-years horizon.
	Business Expectations Survey*	National Bank of Ukraine	2006 quarterly	Business survey on change of employment during next 6 months and difficulties in finding skilled workforce (25 oblasts)	Meso, short-term (1 year)	

Country	*Title of instrument*	*Who is responsible for implementation*	*Timing and periodicity; first and last implementation*	*Type and source of data collection*	*Level (macro/meso/micro) and time-horizon*	*Details of the method*
Ukraine	Business Tendency Survey*	Institute of Economic Research and Policy Consulting (IER)	2002 quarterly	Business survey on expected change of employment during next 3 months and difficulties in finding skilled workforce, sub-regional (4 oblasts)	Meso level, short-term (3 months)	
	Education to work transition study	ETF, Institute for Demography and Social Studies	2006-2007 Ad hoc	Survey of employees on their transition to work	Micro level, short term	Contains data on transition from school to work by education level of individuals
	School-to-work Transition Survey (Work4Youth Project)	ILO, Institute for Demography and Social Studies	2013 occasional	Survey of household characteristic, aspirations and life goals of young people, their educational achievement	Micro level, short-term	Provide data on transition from school to work by education level of individuals, problems of skills matching
	Sector skills councils	Employer organisations	First 2 sector councils established 2012 and 2013	Occupational standards, employer surveys	Meso level	Law of Ukraine 'About Employer Organizations, Rights and Guarantees of their Activity' is regulating their responsibility (among others) for sector skills councils, and developing occupational standards for key sectors: metallurgy (2012), and chemical industry (2013).

A5 List of national stakeholders interviewed

ARMENIA

Organization/Institution	*Name*	*Function*
Republican Union of Employers of Armenia	Mr Gagik MAKARYAN	Chairman
National Center for Vocational Education and Training Development (NCVETD) of National institute of Education, (Ministry of Education and Sciences)	Ms Tatevik GASPARYAN	Director
State Employment Service Agency (Ministry of Labor and Social Issues	Ms Anahid PARSADANYAN	Head of Labor Market Forecast and Analysis Unit
Assessment and Testing Center (ATC), (Government of Armenia)	Ms Mariam KHANGELDYAN	Leading Specialist
Union of Manufacturers and Businessmen (Employers) of Armenia (UMB(E)A)	Mr Eduard KIRAKOSYAN	Executive Director

AZERBAIJAN

Organization/Institution	*Name*	*Function*
National Confederation of Entrepreneurs Organizations of Azerbaijan Republic (ASK)	Mr Adil QURBANOV	Head of International Relations Department
Division for Vocational Training of Jobseekers and Unemployed, State Employment Service under the auspices of the Ministry of Labour and Social Protection of the Republic of Azerbaijan	Mr. Fuad MEHDIZADA	Head of the Division
Azerbaijan Trade Union Confederation	Mr. Arif ABRAHIMOV	Chief Advisor
Ministry of Economy and Industry	Mr. Jamaladdin GULIYEV	Head of Department of Economic Policy, Analysis and Forecasting

BELARUS

Organization/Institution	*Name*	*Function*
Republican Institute for Vocational Education	Dr. Edward KALITSKY	Vice-Rector (developed the Turin Process country report 2012)
Ministry of Labour and Social Protection	Dr. Svetlana SHEVCHENKO	Director of the Labour Research Institute
National Institute of Education / Ministry of Education	Mr Alexander KULIAIEV	Analytical Department
Business *Union of Entrepreneurs and Employers*	Ms. Nina NAUMOVICH	Deputy Director

GEORGIA

Organization/Institution	*Name*	*Function*
Ministry of Education and Science of Georgia (MoES)	Ms. Mindia OKUJAVA	Senior Specialist at Higher Education Development Department
	Mr. Nikoloz MESKHISHVILI	Head of Social Partnership Division at the Department of VET Development
National Centre for Educational Quality Enhancement NCEQE (*the Centre is under MoES and is in charge of occupational standards and VET programmes)*	Ms. Thea SIPRASHVILI Ms Nami DALAKISHVILI	Programme Manager Senior Specialist
Ministry of Labour, Health and Social Affairs (MoLHSA)	Mr. Paata ZHORZHOLIANI	Head of Department of Labour and Employment Policy
Trade Union Confederation of Georgia (TUCG)	Mr Lasha BLIADZE	Chairman of the Youth Organizations
Employers' Association of Georgia (EAG)	Mr. Mikheil KORZAKHIA	Executive Director

MOLDOVA

Organization/Institution	*Name*	*Function*
Ministry of Labour, Social Protection and Family, Resources Development and Occupational Policy Department	Ms Nina PUNGA	Head of Department
Ministry of Education Department of Vocational and Professional education	Ms Vera CHILARI	Senior Consultants
National Agency for Employment (NEA)	Ms Raisa DOGARU Ms Valentina LUNGU Ms Olga CERNAUTANU	Deputy Director Director of Employments Policy Implementation Senior Specialist Training of Unemployed
National Federation of Employers in Agriculture and Food Industry (FNPAIA)	Ms Alina GHELETCHI	Economist, Specialist for External Collaboration
National Trade Union Confederation of Moldova (NTUCM) Department of social – economic protection	Ana MOLDOVANU	Chief of Department

UKRAINE

Institution	*Name, surname*	*Function*
Ministry of Social Policy, Department of Professional Development	Olga Vakulenko ALEKSANDROVNA	Head of the Department
Ministry of Economic Development and Trade	Nadiya DIMITRENKO	Deputy Head of Department of Economy of Social and Humanitarian Sphere
Ministry of Education and Science	Mykola Mykolaevich FOMENKO	Deputy Director of the Department of Higher Education
Federation of Trade Unions	Olena LOBCHENKO	Head of Department
Federation of Employers, Department of the Development of Labour Potential and Corporate Social Responsibility	Rodion KOLYSHKO	Head of the Department

A6 Standard questionnaire used for interviews

Note: this questionnaire was developed by the OECD, in collaboration with CEDEFOP, ETF and the ILO. There are four , slightly different, templates: for the ministries of education (see template below), the ministries of labour, for employers' federations and for trade unions.

Assessing, anticipating and responding to changing skill needs Questionnaire – Template for ministries of education

Background and motivation

Skills mismatches and shortages have important economic implications and have become a growing concern among policy makers. At the individual level, skills mismatch affects job satisfaction and wages. At the firm level, it reduces productivity and increases on-the-job search and turnover, while shortages increase the cost of hiring and hinder the adoption of new technologies. At the macroeconomic level, mismatch increases equilibrium unemployment and reduces GDP growth via the loss in human capital and/or the reduction in productivity it generates, while skills shortages have equally adverse effects on labour productivity.

Improving the match between the supply and demand for skills can limit these negative effects. Effective assessments of skills shortages and mismatches, as well as the anticipation of future skills needs, can be important tools in this respect. However, while many countries have such tools in place, their effectiveness may be limited because of difficulties of integrating information about skills needs into policy and practice.

Therefore, the OECD, in collaboration with CEDEFOP, ETF and the ILO,[29] has launched a new project to identify effective strategies among countries for turning qualitative and quantitative information on skill needs into relevant action for policy. Through the present questionnaire, the OECD hopes to gather information on: the extent to which skills assessment and forecasting exercises influence labour market, education and/or migration policy; the involvement of the key potential stakeholders, including ministries of labour and education, employers, and trade unions; and any good practice and/or barriers which are encountered in using such exercises in policy development.

Since an important aspect of the study is to try and understand the degree and nature of institutional linkages between the various bodies responsible for skills policy in assessing, anticipating and responding to changing skill needs, adapted questionnaires have also been sent to the Ministry of Labour and social partners. ministries and social partners.

This project will only be successful in the extent that high-quality information about country practice in this area is collected and so your support is key to ensure that this questionnaire is sent to the appropriate person to be filled in and returned to the OECD by **Monday June 16, 2014**. Your co-operation and help are much appreciated.

[29] The European Centre for the Development of Vocational Training (CEDEFOP), the European Training Foundation (ETF) and the International Labour Organisation (ILO).

OECD contact

Please return all completed questionnaires to skills.anticipation@oecd.org. For further information and/or specific questions with respect to its completion, please contact either Stijn BROECKE (stijn.broecke@oecd.org / +33 1 45 24 8248) or Guillermo MONTT (guillermo.montt@oecd.org / +33 1 45 24 9292).

Key ministry contact

Once the completed questionnaire is returned, further questions of clarification on certain issues may arise. Please provide a contact person to whom all such questions could be channelled.

a. Name:

b. Organisation:

c. Position:

d. Telephone number:

e. E-mail address:

Instructions

Respondent(s)

The individual best placed to respond to this questionnaire would typically be someone in the Ministry of Education knowledgeable about skills needs assessment and forecast exercises carried out in your country and/or their use. This person is likely to be a member of staff of the Ministry (or subsidiary body) directly involved in skills assessment and/or anticipation exercises. In the absence of such a person, the best-placed respondent is likely to be the head of research/analysis or long-term planning/strategy in the Ministry (or equivalent). In some cases, however, it might be necessary to obtain information from other members of staff and/or external contacts in order to provide as accurate an answer as possible – particularly where multiple skills assessments/forecasts exist, a large number of actors are involved, an external body is primarily responsible for the provisions of the skills information and/or these exercises and the policy response occur at a decentralised (regional or sub-regional) level.

Scope

In responding to the questions below, please focus on skills assessments and forecasting exercises that are carried out in your country on a regular basis and are considered to have (or the potential to have) an important impact on policy making and the decisions of individuals and organisations. These include exercises your Ministry may not be directly involved in (e.g. activities carried out by another ministry, exercises carried out at a regional/sub-regional/sector level, or assessments/forecasts made by employer organisations, trade unions, research institutions and think tanks).

Definitions of key terms used throughout the questionnaire

A number of technical terms will be used throughout the questionnaire. In order to minimise confusion, the following definitions will be adhered to. When in doubt, please do not hesitate to contact a member of the OECD team.

- Skills will be interpreted broadly and can refer either to particular qualifications (e.g. technical/vocational, university), field of study (e.g. law, medicine, economics, catering), or specific skills (e.g. numeracy, literacy, problem-solving, soft skills).
- Skill shortages arise when employers are unable to recruit staff with the required skills in the accessible labour market and at the going rate of pay due to a lack of an adequately qualified workforce. They can be defined in terms of unfilled and/or hard-to-fill vacancies.
- Skill mismatch either refers to the inadequacy of a worker's skills relative to the requirements of the job (skill deficit or gap), or to the opposite phenomenon whereby a worker's skills exceed those required by the job (skills under-utilisation or over-skilling).
- Matching can be seen as the deliberate attempt to bring the supply of, and demand for, skills better in line with each other.
- Skill needs assessments evaluate the current supply and demand for skills, with a particular focus on mismatches or shortages. General Labour Market Information systems (LMI) are included under this heading, as long as they specifically set out to assess the relative supply of and demand for skills.
- Skills anticipation attempts to evaluate future skills needs as part of a strategy to improve matching.
- Skill needs forecasts are qualitative or quantitative studies that use available information or gather specific information to anticipate future skills needs, mismatches or shortages.

Section I - Systems and tools for skills assessments and forecasts

The aim of this section is to gather information on the main tools used in your country to assess skills shortages and mismatches, and to forecast future skills needs, as well as the degree and nature of your Ministry's involvement in such exercises. These include exercises your Ministry may not be directly involved in (e.g. activities carried out by another ministry, exercises carried out at a regional/sub-regional/sector level, or assessments/forecasts made by employer organisations, trade unions, research institutions and think tanks) – as long as they are regular exercises in your country that have the potential to inform skills policy making.[30] In responding to this section, it is also important to distinguish between systems designed to assess current skills needs and those that aim to forecast future skills needs.

Special instructions for Section I

This section will first ask about exercises aimed at current skills assessments, and then about future skills assessments (i.e. forecasts). **Where more than one exercise exists, please complete sections 1.1 and/or 1.2 separately for each assessment/forecast.**

[PLEASE CONTINUE ON TO THE NEXT PAGE]

[30] Skills policy may include labour market, education and/or migration policies.

1.1 Assessments of current skills needs

Please describe any systematic and regular assessments of current skills needs that exist in your country. The focus here is only on the production of the information. LMIs that are used for skills policy can be included in this section. Please complete this section separately for each different exercise in case there is more than one.

1. What is the title of the exercise?

2. Please indicate the extent of your Ministry's involvement in this exercise (mark with an X the answer most applicable):
   - Your Ministry is the lead organisation (e.g. main sponsor or carries out the exercise). ☐
   - The assessment is mainly carried out by another organisation, but your Ministry participates either in an advisory capacity, through the provision of inputs, or with a financial contribution. ☐
   - Your Ministry is not directly involved, either financially or otherwise. ☐

3. Please indicate:
   (i) Which of the following actors are involved in the exercise (mark with an X as many as apply).
   (ii) Which of these actors is the lead organisation (i.e. main sponsor or the institution carrying out the assessment) (mark with an X as many as apply).

	Involved?	*Lead?*
a. Ministry of Labour		
b. Ministry in charge of migration		
c. Ministry of Finance		
d. Ministry of Environment		
e. Other sectorial ministries		
f. Central Bank		
g. Statistical Office		
h. Regional development agencies		
i. Regional governments		
j. Sub-regional governments		
k. Public employment services		
l. Private employment agencies		
m. Special observatories		
n. Universities/research organisations/think tanks		
o. Employer organisations/individual employers		
p. Trade unions		
q. Professional associations		
r. Skills councils		
s. Other(s) (please specify):		

4. What is the frequency of this exercise?

5. What definitions of skills are included in this assessment? (mark with an X as many as apply)

	Included
a. Qualifications by level (e.g. primary, lower/upper secondary, undergraduate, masters, …)	
b. Qualifications by type (e.g. academic, vocational, …)	
c. Fields of study (e.g. science, nursing, social work, …)	
d. Specific skills (e.g. numeracy, literacy, problem-solving, soft skills …)	
e. Other (please specify):	

6. What are the main tools/instruments/methods used? (mark with an X as many as apply)

	Used
a. Employer surveys asking about skills shortages	
b. Analysis of job vacancy data	
c. Analysis of job advertisements on the media and on the internet	
d. Analysis of wage pressure indicators	
e. Analysis of general labour market pressure indicators	
f. Analysis of occupation/sector-specific growth	
g. Analysis of school and university enrolment or graduation rates	
h. Tracer studies (i.e. surveys of graduate outcomes)	
i. Skills audits	
j. Interviews or focus groups with experts or key informants	
k. Other (please specify):	

7. Does this skill needs assessment exercise explicitly consider skills needed for a successful transition to a Green Economy? If so, please describe how.

8. If available, please provide any internet link(s) to the most recently available results of this assessment (or attach relevant material to this questionnaire) as well as any bibliographic references to the results or reports using these results.

1.2 Skills forecasts

Please describe any systematic and regular forecasts of future skills needs that exist in your country. The focus here is only on the production of the information. Please complete this section separately for each different exercise in case there is more than one.

1. What is the title of this exercise?

2. Please indicate the extent of your Ministry's involvement in this exercise (mark with an X the answer most applicable):

• Your Ministry is the lead organisation (e.g. main sponsor or carries out the forecast).	
• The forecast is mainly carried out by another organisation, but your Ministry participates either in an advisory capacity, through the provision of inputs, or with a financial contribution.	
• Your Ministry is not directly involved, either financially or otherwise.	

3. Please indicate:
(i) Which of the following actors are involved in the exercise (mark with an X as many as apply).
(ii) Which of these actors is the lead organisation (i.e. main sponsor or the institution carrying out the assessment) (mark with an X as many as apply).

	Involved?	*Lead?*
a. Ministry of Labour		
b. Ministry in charge of migration		
c. Ministry of Finance		
d. Ministry of Environment		
e. Other sectorial ministries		
f. Central Bank		
g. Statistical Office		
h. Regional development agencies		
i. Regional governments		
j. Sub-regional governments		
k. Public employment services		
l. Private employment agencies		
m. Special observatories		
n. Universities/research organisations/think tanks		
o. Employers		
p. Trade unions		
q. Professional associations		
r. Skills councils		
s. Other(s) (please specify):		

4. What is the frequency of this exercise?

5. What definitions of skills are included in this assessment? (mark with an X as many as apply)

	Included
a. Qualifications by level (e.g. primary, lower/upper secondary, undergraduate, masters, …)	
b. Qualifications by type (e.g. academic, vocational, …)	
c. Fields of study (e.g. science, nursing, social work, …)	
d. Specific skills (e.g. numeracy, literacy, problem-solving, soft skills …)	
e. Other (please specify):	

6. What are the main tools/instruments/methods used (qualitative and quantitative)? (Mark with an X as many as apply)

	Used
a. Employer surveys asking about future skill needs	
b. Quantitative forecasting models	
c. Qualitative methods (interviews, focus groups/round tables and other Delphi-style methods like scenario development)	
d. Other (please specify):	

7. Does this skills forecasting exercise explicitly consider skills needed for a successful transition to a Green Economy? If so, please describe how.

8. If available, please provide any internet link(s) to the most recently available results of this forecast (or attach relevant material to this questionnaire) as well as any bibliographic references to the results or reports using these results.

1.3 Future plans with regards to skill needs assessments and forecasts

1. Are there any plans to build new, discontinue or significantly alter existing skills needs assessments or forecasting exercises (e.g. expand the coverage of industries, skills and occupations; change the frequency; adapt to consider skill requirements for a successful transition to a green economy)? Please provide a brief description of the changes planned, and the rationale behind them.

2. What obstacles, if any, lie in the way of (further) developing these activities in your country? (mark with an X if considered an obstacle; mark as many as apply).

	Obstacle
a. Lack of interest/support by policy makers	
b. Low reliability and accuracy of past exercises	
c. Difficult/lack of coordination with other agencies involved in skills needs assessments	
d. Poor statistical infrastructure	
e. Lack of human resources with relevant knowledge and expertise	
f. Lack of funds	
g. Other obstacles to development (please specify):	

Section II - Using the knowledge and information produced by skills assessments and forecasts

This section seeks to understand how the skills assessments and forecasts described in the previous section feed into the formulation and implementation of skills development policy, as well as what works and what does not in this respect - particularly in relation to the collaboration between your Ministry and other stakeholders.

While skills assessments and forecasts are now treated jointly, please do indicate and specify any significant differences between these two types of exercises if necessary/applicable.

[PLEASE CONTINUE ON TO THE NEXT PAGE]

2.1 Policy uses of skills needs information

1. **Column (i):** Please indicate whether the information from skills forecasting/assessment exercises is used for any of the following policy purposes (mark with an X as many as apply).
   Column (ii): Where used, please indicate the importance of these exercises for each purpose (1 = not very important; 2 = moderately important; 3 = very important)
   Column (iii): Please also indicate to what extent sub-regional (local) policy makers have the ability to influence change in these areas (1 = low influence; 2 = medium influence; 3 = high influence)

	(i) *Used (X)*	***(ii)*** *Importance (1-3)*	***(iii)*** *Local (1-3)*
a. Qualifications and curricula:			
i. Updating qualifications frameworks			
ii. Designing new qualifications			
iii. Revising curricula			
b. Deciding on courses to fund / provide at the:			
i. Adult-training level			
ii. Upper secondary level: vocational and technical			
iii. Upper secondary level: general			
iv. Post-secondary non-tertiary level (ISCED level 4)			
v. Short-cycle tertiary education (ISCED level 5)			
vi. Bachelor's or equivalent level (ISCED level 6)			
vii. Master's or equivalent level (ISCED level 7)			
c. Funding allocation for research initiatives at the post-graduate (e.g. Masters or PhD) level			
d. Updating career guidance and/or training careers advisors			
e. Providing information to students and parents about employability and earnings for different career paths			
f. Up-skilling or re-skilling teachers and trainers for the:			
i. Adult-training level			
ii. Upper secondary level: vocational and technical			
iii. Upper secondary level: general			
iv. Post-secondary non-tertiary level (ISCED level 4)			
v. Short-cycle tertiary education (ISCED level 5)			
vi. Bachelor's or equivalent level (ISCED level 6)			
vii. Master's or equivalent level (ISCED level 7)			
g. Other policy uses of skills needs information (please specify):			

2. Are the results of skills needs assessment and forecast exercises used in your ministry to develop policies to help with the transition to a greener economy (e.g. changes in courses and training programmes that are offered)? Yes ☐ No ☐

2.2 Collaboration and stakeholder co-ordination

Collaboration between ministries

1.	a. Are <u>results</u> from skills forecasts and assessments discussed across two or more ministries (e.g. education, labour, migration, environment, sector ministries)?	Yes ☐	No ☐
	b. If so, which ministries are generally involved in such discussions?		
2.	a. Are <u>policy responses</u> to skills forecasts and assessments developed collaboratively across ministries?	Yes ☐	No ☐
	b. If so, which ministries are generally involved and for which policy uses mentioned in section 2.1?		
3.	Please provide a very brief description of any mechanisms/systems in place to enable cross-ministerial collaboration (e.g. dedicated groups that meet regularly, ad-hoc meetings, a contact point for inter-ministerial collaboration in each ministry, etc.).		
4.	What are the main challenges in enabling coordination/collaboration between ministries?		
5.	With respect to collaboration/coordination between ministries, what (if anything) has worked well?		

Co-ordination across administrative levels

6. Please indicate which (if any) of the following administrative levels are involved:
(i) in the discussion of the skills assessments/forecasts findings
(ii) in elaborating a national policy response
(iii) in elaborating a local policy response
(mark with an X as many as apply)

	(i) *Discussion of findings*	***(ii)*** *Developing national response*	***(iii)*** *Developing local response*
a. National			
b. Regional			
c. Sub-regional			

7. If the involvement of regional or sub-regional levels in the discussion of findings or in developing a local policy response is limited, what are the main reasons behind the limited involvement? (mark with an X as many as apply).

a. Lack of flexibility for regional/sub-regional to engage in the process	
b. Absence of a body to co-ordinate the regional/sub-regional governments	
c. Lack of capacity from regional/sub-regional governments	
d. Other reasons (please specify):	

8. Please provide a very brief description of any mechanisms/systems in place to enable collaboration across different administrative levels when developing policy responses (e.g. regular meetings between central and regional/sub-regional governments, special co-ordinating offices, etc.)

9. What are the main challenges in enabling coordination/collaboration across administrative levels?

10. With respect to collaboration/coordination across different administrative levels, what (if anything) has worked well?

Stakeholder involvement

11. Please indicate which (if any) of the following stakeholders are involved:
(i) in the discussion of the skills assessments/forecasts findings
(ii) in elaborating the corresponding policy response
(mark with an X as many as apply)

	(i) *Discussion of findings*	***(ii)*** *Developing response*
a. Employer organisations		
b. Individual employers		
c. Trade unions		
d. Professional associations		
e. General education providers		
f. Vocational Education and Training (VET) providers		
g. Skills councils		
h. Other (please specify):		

12. Please provide a very brief description of any mechanisms/systems in place to enable collaboration with stakeholders (e.g. trade unions or employer organisations participate as advisors in discussions or policy responses).

13. What are the main challenges in enabling co-ordination/collaboration with stakeholders?

14. With respect to collaboration/co-ordination with stakeholders, what (if anything) worked well?

Reaching consensus over skill needs and policy

15.	a.	Is there any evidence of conflicting interests/objectives between different actors when it comes to agreeing on skills needs?	Yes ☐	No ☐
	b.	Is there any evidence of conflicting interests/objectives between the different actors when it comes to responding to skills needs?	Yes ☐	No ☐
	c.	If you answered Yes to either of the questions above, please provide an example, detailing the nature of the disagreement and the actors involved.		
16.		Please describe any mechanisms/procedures in place to resolve such conflicts and achieve consensus.		

2.3 Barriers in translating skills needs information into policy and practice

This section explores the barriers that limit the use of skills needs assessments and forecasts in policy making. It distinguishes between methodological, output and dissemination, and policy development barriers.

Mark with an X as many barriers as apply. For each barrier identified, please also indicate how important this barrier is (1 = not very important; 2 = moderately important; 3 = very important) and specify where appropriate.

1. What, in your view, are the main methodological barriers to skills assessments and forecasts being successfully translated into policy and practice?

	Barrier (X)	*Importance (1, 2, 3)*
a. The way skills are measured and defined do not map to useful variables in the policy making domain (e.g. results by occupations do not translate to fields of study)		
b. Results are too specific (e.g. limited to certain occupations, education levels or regional entities)		
c. Results are not sufficiently disaggregated (e.g. more detail is needed by occupations, field of study or regional/sub-regional level)		
d. Lack of consideration of key labour supply/demand dynamics (e.g. demographic, migration, education enrolment, industry or occupation, regional/sub-regional trends)		
e. Lack of consultation regarding skills needs and forecasts with stakeholders and experts (e.g. employers, regional governments)		
f. Approach is too qualitative		
g. Approach is too quantitative		
h. Lack of reliability and accuracy of previous exercises		
i. Time scope of forecasts is not useful for policy making		

j. Please provide further detail on the methodological barriers mentioned above, or for other methodological barriers not previously mentioned:

2. What, in your view, are the main barriers relating to the output and dissemination of skills assessments and forecasts for them to be successfully translated into policy and practice?

	Barrier (X)	*Importance (1, 2, 3)*
a. There are too many assessment and forecast exercises		
b. The outputs are too technical / difficult to understand by non-experts		
c. Time inconsistencies between the production of information and planning/policy cycles		
d. Results are not sufficiently shared with key stakeholders (e.g. general and vocational education providers, employers, workers, regional/sub-regional governments)		
e. Results are not sufficiently shared with a wider audience		

f. Please provide further detail on the output and dissemination barriers mentioned above, or for other output and dissemination barriers not previously mentioned:

3. What, in your view, are the main barriers relating to the development of a policy response to skills assessments and forecasts?

	Barrier (X)	*Importance (1, 2, 3)*
a. Results are not sufficiently discussed with key stakeholders (e.g. other ministries, employer organisations, employers, trade unions, general and vocational education providers, regional/sub-regional governments)		
b. No consensus is reached about current or future skills needs		
c. The development of a policy response to skills needs assessments and forecasts does not involve key stakeholders enough		
d. Policy response is scattered across government levels (e.g. national, regional) or agencies (e.g. different ministries)		
e. Lack of political support from senior decision makers to use skills needs information in policy development		
f. Local levels of government lack the flexibility and tools to influence:		
i. Labour market policy		
ii. Education policy		

g. Please provide further detail on the barriers mentioned above, or for other barriers limiting the development of a policy response not previously mentioned:

2.4 Good practice and challenges in translating skills needs information into policy and practice

1.	Are there any good examples in your country of how the information and knowledge gained through skills forecasts and assessments feed into policy? What explains the success of these? Please describe:
2.	Is there any on-going discussion in your country about how to improve the way information from skills assessment and forecast exercises are translated into policy? If so, please describe who is being engaged and what is expected from these discussions and provide references to any reports if available.

2.5 Dissemination to a wider audience

1.	Are the results from skills assessments and forecast exercises disseminated to a wider, non-specialist audience? Yes ☐ No ☐
2.	If yes, what are the main channels used for such purposes? (mark with an X as many as apply). a. Reports ☐ b. Websites ☐ c. Public media (TV, radio, newspapers magazines) ☐ d. Social media (Twitter, Facebook) ☐ e. Other (please describe): ☐
3.	What, in your opinion, has worked well in making the outputs from such exercises more available to a wider audience?

2.6 Additional information or comments

1.	Please use this space if you feel there is any additional information that you think is relevant for the understanding of the use of skills assessments and forecasts in your country, and how the results from such exercises are used for the formulation and implementation of skills development policies.

This is the end of the questionnaire.

Please send the completed questionnaire to skills.anticipation@oecd.org

Thank you for your input and your time.

A7 Compiled results of questionnaires with key national stakeholders

	Ministries of Labour							
	AM	AZ		BY	GE	MD		UA
Questionnaire received:	***State Service of Employment***	***State Employment Service***	***Ministry of Economy and Industry***	***Labour Research Institute***	***Min Labour, Health and Social Affairs***	***Ministry of Labour, Social Policy and Family***	***National Agency for Employment***	***Ministry of Social Policy***
Section 1: Systems and tools for skills assessment and forecasts								
Assessment of current skills needs	The SSE is leading **employer survey**s; no partners involved. Using employer survey data and vacancy analysis. Bi-annual	development of local employment programs	Studying demand for qualified workforce in accordance with state's requirement to finance HE. A mix of methods (data sources) is used.	HBS on employment', 'learning needs of employers (?) in the workforce'. A range of methods is used, but no tracer studies. A range of studies: inquiring personnel demands in connection with organisational modernisation, job placement practices, employers' views on learning outcomes. etc.	at present does not exist	*No name/title of the practice is given*. Together with Min in charge of migration and SP. Using employer surveys, job vacancy analysis, LM indicators, tracer studies.	**Annual LM forecast** supported by the Swedish AMS (PES), based on survey of 3270 establishments. ('economic agents')	**State order system**, based on assessment of needs for workers, skilled workers, professionals and scientists (legal basis adopted 2012)
Skills forecasts	The SSE is leading a '**Market Research**', but no partners involved. Using employer surveys asking about future skill needs, annual.	development of local employment programs	Annual forecasts for the state quota system, as above.	Study conducted 2013 on 'personnel demands of (modernising) organisations for the next 2-3 years, taking into account replacement needs because of retirement. 'Exploring additional staffing needs of organisations'.	No systematic and regular forecasts of future skills needs exist yet.	Labour Forecast 2014 of the NEA. No others are involved.	no system in place, 'there is no vocational guidance, and LM training is not meeting LM needs.'	**State order system**, based on forecast of needs for workers, skilled workers, professionals and scientists (legal basis adopted 2012)
future plans	**skills needs assessment and forecast not yet existing, under development'**	no	expand coverage os skills and occupations. More frequent forecasts (from 1+3 to 1 y forecasts)	--	LM research is budgeted for 2014, with sources also for following years (LMIS?). Skills forecasting will follow covering 100 most important professions. A training program will follow.	VET strategy 2013-2020. Methodology to be developed with EU support project	The PES should have own training centres	
Obstacles	Outdated VET system, on-going education reforms and under-developed market	Low data reliability, lack of resources and funds.	Many. 'Difficulty access to suitable advanced methodologies.'	lack of coordination, of infrastructure and of funds.	low reliability of past exercises, lack of resources and funds.	--	lack of funds	low reliability and accuracy of past exercises, lack of coordination, human resources and funds
Section 2: using the knowledge and information produced by skills assessment and forecasting exercises								
Policy use of skills needs information	Used to inform re-training programs	Managing labour market training programs, also in career guidance	**Development of State Orders for HE**. Informing training and retraining policies and programs.	Used for **on-the-job training programs** and designing incentives to employers to up-skill workers. Also to inform/influence state program on employment and labour code (?):	--	Relevant for up-skilling and retraining only at local level'	--	Used for most elements of E&T system at national and local level
Collaboration	Working groups and commissions, agencies and local services within the ministerial structure	yes, with line ministries and with Students Admission Commission		yes, roundtables, etc.	yes	weak, unclear. Lack of capacities at local level	--	yes
Ministerial coordination (horizontal)		yes, working group with MLSPP and MoE established 2014(improving VET, occupational standards, integration of disabled	yes, established, also contact points for inter-ministerial collaboration in each ministry. But lack of regular meetings. Lack of coordinating body.	challenge: lack of feedback	yes, with MoES. Inter-sectoral working group planned in the new strategy 2014-17. Functioning inter-min coop in the framework of EU budget support.	WGs, workshops, conferences 'Challenge is the interaction between employer and employee'	--	3 line ministries involved (economy, education, social policy), but coordination should be strengthened
Stakeholder involvement	employer organisations and individual employers	yes, national and local coordination committees. Coop with social partners works well.	employer organisations participate in discussion, but lack of interest.	Assoc. Of Employers of Minsk organises meetings	Positive experience in dev of LM strategy, many other projects in partnership	yes, details unclear	--	weak institutional capacities at local level
Barriers in translating information into policy and practice	different speeds, barriers in LM and EDU policies	many: measurement, more disaggregation needed, dynamics not considered, time scope of forecast not adequate.	many. Measurement, lack of disaggregation, lack of consultation with stakeholders and experts, approach too quantitative, lack of reliability of previous exercises. Weak stakeholder involvement.	Measurement, lack of labour dynamics and employers' involvement, too quantitative, reliability of results, and time scope. Lack of dialogue with stakeholders. **Conflicting interests and problem of education policy.**	--	measurement, too specific results but data not disaggregated, too qualitative, time scope. Not sufficiently discussed with stakeholders, no consensus, issue of LM and EDU policy.	--	Results too specific but also not enough disaggregated, lack of consultation with experts (employers), lack of funds.
Good practices	job fair ('Labor fair')	Employment Strategy and State Program for Employment of Refugees and IDPs	N/A'	--	--	--	--	

Skills forecasts	NCVETD is not directly involved.	A&T centre is not directly involved.	Programme of development (modernisation) of secondary education, using qualitative and quantitative forecasting methods	the formation of requests for training of skilled workers (specialists) and civil servants. Based on employer surveys, qual. And quant. Methods, and together with stakeholders.	No regular skills forecast conducted yet.	No regular and systematic forecasts of futures skills carried out so far.	'The Ministry does not carry out regular forecasts of future skills needs.'
future plans	--	--	--	Computer automated programme being developed,	EU association agreement entails specific commitments (LLL, demand-oriented education system, etc.) New HE strategy being developed.	New VET reform strategy will cover introduction of skills needs assessment.252 occupational standards developed, and will be revised. (DACUM method.) EU budget support will alo cover skills assessment. Policy and method. need to be further defined.	Skills assessment and forecasts will be introduced with EU budget support. MoL will lead. MoL and MoES will make joint assessment of the VET sector. Obstacles: lack of coordination, poor stats infrastructure, funds
Obstacles	All possible obstacles are mentioned	All possible obstacles are mentioned	--	For the IT-automated system: Lack of trained specialists in companies, and companies do not know their needs in 5 years. **Lack of institutional capacities and funds.**	Lack of coordination, stats infrastructure, funds.		--
Section 2: using the knowledge and information produced by skills assessment and forecasting exercises							
Policy use of skills needs information	yes, manifold, including green economy	yes, manifold, including green economy	Yes, used for QFs, reforming curricula, and for teacher training for all education levels.	Widely used by the education system. 'Results in a state program for development of education at all levels, 2011-2015.	used for qualifications and curricula and funding at ISCED 5,6,7 levels. Also for strategy development and development of academic staff.	high importance for qualification and curricula, and for career guidance advisors.	High importance for qualifications and curricula, general and vocational upper secondary, adult training. Establishment of new VET institutions, new curricula. And short-term courses.
Collaboration	(internal quarterly meetings)	NCVETD meets quarterly	yes	yes	very weak coordination, only coop among faculties working well	yes, very well, National VET council includes Ministries and stakeholders.	yes
Ministerial coordination (horizontal)	only at national level	only at national level	yes, Min of Labour and Social Policy, Min. of Nature and Environment	yes, with contact point for inter-ministerial collaboration in each ministry. Lack of dedicated leadership, nobody wants to take the lead.	There is an "inter-sectoral commission"	7 thematic groups with active involvement of ministries	Yes, many ministries (more than in other c.) (will be) involved. A fully fletched coordination structure was established in the framework of the EU budget support project. Positive example: Strategy for VET reform.

Barriers in translating information into policy and practice			regional government). Measurement problems, too much quantitative. **Main barrier is that employers have no real influence**	lack of consideration of labour market dynamics, lack of involvement of experts, employers, time scope, and **too much quantitative.**	consideration of labour market dynamics, lack of involvement of experts, employers, and too quantitative. Policies not discussed, results are not shared.	regional level, lack of interest from stakeholders - but there are also positive examples (sector of tourism, agriculture). Challenge: LM and EDU policies.	-- these are futures plans.
Good practices				--	Specific training program of the technical university, GIZ training project for IDPs.	Supervisory bodies established at VET colleges, coordinated by MoES.	Elaboration of occupational standards including anticipation of skills, involving private sector.
Dissemination				no wider dissemination	--	Worked well: extended stakeholder group for elaboration of VET reform strategy2013-2020. Job Fairs, transparent information.	
Additional information				--	Demand by society is different than LM demand. Government defined priority fields of study. There is no skills assessment and forecasting system in place. A special working group needs to be established.		Recommendations: convincing employers of benefits of VET reform, access of VET graduates to higher education, incentives for the private sector, regular labour market analysis and forecast needed, covering also SMEs. Specialised agency with sufficient resources needed.

	training strategy (ILO), combining various methods; led by MoL, annual (until >2020-2025). In HE: Armenian QA (Tempus)	UMB(E)A coordinates work of the Branch Unions (they use a mix of methods). But UMB(E)A is not involved in others' forecast projects.	--	Lectures for improving qualifications of specialist and managers of affiliated organisations' Employer surveys are used	and UNDP). Specific survey of entrepreneurs was conducted, about assessment of practical skills of return migrants.	Sector Committee of Agriculture and Food Industry: Led by 'Agroind' and ETF. No other programs are known.	--the Federation is not involved	
Skills forecasts								
future plans	German partnership project Employers' Associations of Caucasus planned	--- UMB(E)A develops its own staff.	There are plans to develop a questionnaire for skills needs assessment (of ASK)	--	Planned: 'Validation of Qualification by Entrepreneurs', regular and all regions, together with PREAs, universities, VET schools, employers.	Within the EC project (GOPA) they want to develop occupational standards for tractor machinists and bakers.	The Federation considers carrying out their own forecasts, but there is yet no specific methodology	
Obstacles	own capacity, time constraints	capacity, funds, lack of coordination, conservative HE system	capacity and funds		lack of public awareness, lack of interest, reliability of past exercises, coordination with other agencies, funds.	lack of funds and capacities, lack of interest of members	lack of coordination, human resources and funds	
Policy use of skills needs information	much used for various purposes	there is high need, but dissemination not visible	Mainly used for service to employers, for developing training, for wider dissemination	Developing training programs	yes, highly important for many purposes.	inform collective bargaining process, advise firms, influence policies	influence on education and labour market policy (is desirable)	used to in collective bargainin
Collaboration	very well actively involved	very well involved at government level, especially with Min of Economy		not invited by government, not involved	yes, member of VET council (no decision power, and their are conflicts of interest over policy issues.)	not invited by government	yes, but weak	involved l governm national l
Ministerial coordination (horizontal)	n.a.	conflicts of interest: education system is lacking behind		--				
Stakeholder involvment	n.a.		yes, with government at national level	--		conflicts of interest: yes. Over competence to develop the (tractor-machinist) standard between the VET centre and the sectoral committee	Conflict of interest: disagreement on priority needs, between HE institutes (law and economic faculties) and VET system.	
Barriers in translating information into policy and practice	Measurement and reliability problems. Barriers in LM and EDU policies	Measurement problems and quality of data. '***There are too many forecast exercises'***	Outputs are too technical, diff to understand. Not enough stakeholder involvement	--	Lack of consideration of labour market dynamics, lack of involvement of experts, employers, time scope, and **too qualitative,** not sufficiently shared results. No consensus about futures skills needs.	Lack of consideration of labour market dynamics, lack of involvement of experts, employers. Many other barriers.....	Not enough consideration of labour market dynamics, measurement problem, lack of experts' involvement, lack of consensus and political support	Results n shared w stakehold

Additional information	national conference will focus on skills development	--		for specialists together with the Institute for Privatisation and Management	internship and apprenticeship system should be further developed.		--	**need to establish national coordinat committe**

A8 Reporting guidelines for the national reports

Reporting Guidelines on current practices in anticipation and matching of skills in Eastern Partnership Countries

Contents

If you have any questions for clarification please contact Lizzi Feiler (lizzi.feiler@gmail.com)

A. Guidelines for national reports

The national reports aim at providing a detailed and concrete stocktaking of current practices in anticipation and matching of skills in all EaP countries considering their specific socio-economic context and labour market realities by reviewing the present state of play in skills anticipation and identifying potential good practices and actions for further cross-country cooperation under the Eastern Partnership initiative .

In order to ensure the comparability and complementarity of the national reports we recommend including the same type of information at a similar level of abstraction and structuring the reports along the following lines:

1. Summary of the main conclusions and key findings
2. Situational analysis
3. Data availability
4. Methods for anticipating skill demand
5. Policy analysis

The main purpose of this template is to guide the national experts on the report drafting process. The experts are asked to provide information in a form that is most convenient for giving a valid picture of their country with respect to what is desired. The experts may decide in consultation with the international lead expert if the reports will provide direct responses to the questions or present the findings in a more narrative form. In any case, the information should be organised by explicit subsections referring to the topics emphasised within the chapters 1-5.

An important requirement for understanding the practices in anticipation of skills is also to position them in their country context. Therefore, the institutional structures and the policies related to them need be covered. A framework for the understanding and classification of the matching and anticipation methods can be given by the two dimensions of the micro-meso-macro-levels of observation/practice on the one hand and the short-mid-long-term time scales of problems/procedures on the other, indicated by the matrix below:

Matching Method Matrix with time horizon and levels (examples)

	Short term	***Mid term***	***Long term***
Micro-level (people, work places, enterprises)	Qualification, knowledge-skills-competences needs assessment at company level, transition from education to employment		
Meso-level (sectors, regions, intermediary actors: public employment service (PES), education and training providers)	Employer surveys Vacancy monitor	Sector studies, region specific skill needs analysis	
Macro-level (economy, education and training-system)		Qualitative methods (expert panels, Delphi, Scenarios)	Formal quantitative projections or forecasts

The report is to be complemented by the ***OECD questionnaire on Assessing, Anticipating and Responding to Changing Skills Needs*** (annexed to this document). There are 4 (nearly identical) questionnaires targeting different stakeholder groups. The experts may choose a questionnaire and specific questions that suit best the persons to be interviewed. They have been designed for self-assessment, but it is suggested that the national experts use them for structured interviews with key actors. The experts may choose to fill in first the questionnaire by collecting information and data and completing the information interviewing the key stakeholders. The information gathered should be used as input to the national report, with the electronic version of the questionnaires annxed. . (The cross-country study and the questionnaires will be used later for a larger global review of the anticipation and matching strategies by the OECD for turning qualitative and quantitative information on skills needs into relevant policy actions.)

ATTENTION: Please do not send the questionnaires to the OECD but return them as annex to the national report to the international lead expert of the cross-country study by the agreed deadline.

1. Summary of main conclusions and key findings (about 1-2 pages)

This section should summarize the main conclusions of current practices in anticipation of skills in the countries. General questions to be addressed are:

- What are the main practices and procedures in anticipation of skills in the countries? Who are the actors and who are the main actors responsible for implementation??
- What are the main conclusions or results? Does the anticipation of skills needs confirm mismatches in the countries? If yes:
  - In which areas (for e.g. by educational level or field? By sector, occupation or regional level)?
  - How do countries translate information about skill needs (generated by current procedures and practices) into policies?
  - How could the mismatch be resolved in your view?
- Which main issues, good practices, and problems would you specifically highlight?
- Which of the reported procedures do you assess particularly as good procedures, methods or practices that could be recommended to other countries or systems?

2. Situational analysis (about 5 pages)

This section should give an overview about the social, economic and labour market factors that shape the demand for skills and a description of current practices and procedures for identifying that demand as well as the matching of skills supply to it. In order to determine the increase/decrease of demand for different levels of educations, fields of study or training: a short description of current educational systems by country should be included.

General questions to be addressed are:

- How does demand and supply on the labour market evolve?
- What are the main developments and/or drivers linked to the labour market developments for needs of skills (for e.g. social, economic or labour market factors)?
- Which kinds of mismatches are observed and how? (Describe the practice for identifying demand for skills and mismatch of supply).
- Which kinds of skills requirements are perceived and how? (Describe the practice or procedure for identifying demand for skills and mismatch of supply).

- How do different educational levels (initial and continuing education/training) and different fields of education respond to the mismatches and requirements? What are the main problems in this respect?
- Which kinds of institutional frameworks are dealing with matching and anticipation? At which levels? Which actors are involved?
- What role does private education/training supply play? How is it shaped in terms of quality, costs, etc.?
- How is the relationship between formal and informal sectors of employment and/or education dealt with in quantitative and qualitative terms? How can this distinction be drawn? How is the formal sector defined? How can the informal sector be identified? What is its role in skills production and utilisation?
- Is there a role for informal learning in relationship to formal education/training? How can this distinction be drawn?

3. Data availability (about 3-5 pages)

This section deals with the information sources that are available for matching and anticipation. These should be described and the main gaps should be identified.

Main general questions to be addressed are:

-What kind of data are available for the improvement of the matching of supply and demand in education/training and employment, and for the anticipation of skills requirements?

-How are these data provided and disaggregated?

-What is known about the use of these data bases/sources for skills matching and anticipation?

-Which gaps are perceived in the information bases?

Please describe the main data available in each of the countries in the table about the main current data bases (DB), please include additional rows if more databases exist in a section:

Data availability matrix

	Name of database (DB)	*Provider and kind of data (administrative data, survey)*	*Regular or occasional; time scale*	*Availability (to actors, to researchers, form of publication/ dissemination)*	*Categories (international classifications used?)*	*Disaggregation (national, regional, local; institutional, sectors)*
- Data about education & training						
DB 1						
DB 2						
	...					
- Data about the labour market (employment and unemployment)						
DB 3						
DB x						
	...					
- Data about the transition from education/training to employment/ work						
DB x						
DB x						
	...					
- Data about the utilisation of education/training (income; assessment by individuals, enterprises; etc.)						
DB x						
DB x						
	...					

Discuss the main perceived gaps in the data and its availability, coverage, quality and validity: Please qualify each of the data bases in this respect by a narrative assessment in the following table:

Name of Database from table above	*Assessment of availability, coverage, quality and validity*
DB 1 ...	
DB 2 ...	
Etc. ...	

4. Main practices and procedures used to anticipate skill demands (about 5 pages)

The purpose of this section is a description and stocktaking of current practices and procedures that are going on or have been started which can contribute to matching between education/training and employment/the economy and anticipation of future demand.

Main general questions to be addressed are:

- What are the main practices and procedures to anticipate skill demands and who are the main actors responsible for implementation?
- How is knowledge and information (generated by current practices and procedures) about skills requirements or mismatch of skills and needs used? By whom (e.g. employment services, enterprises and educational providers)?
- How are skills requirements considered in the development of education/training institutions or programmes, initial and continuing?
- How is informal knowledge about requirements brought into these processes? What kind of institutions are involved (e.g. administrative units, interest organisations, R&D units)? Which roles do they take?
- Are there specific methods for the improvement of matching and anticipation currently in place, which ones?

Please describe the current practices and procedures for anticipation of skills in the table below:

Current practices and procedures for anticipation of skills in ……

(Create a new row for each procedure or practice identified under the types 1- 6 and fill in some short information about the asked issues):

Type and title of the method applied	*Who is responsible for implementation*	*Implemented since when, periodicity, and date of recent implementation*	*Type and source of data collection*	*Which level is addressed (micro/ meso/ macro) and for which time horizon?*	*Details of the method*
Type 1. Formal projections/ forecasts					
Method ...					
Method ...					
Type 2. Sectoral studies/ projects					
Method ...					
Method ...					
Type 3. Enterprise surveys					
Method ...					
Method ...					
Type 4. Surveys among employees, graduates/ completers					
Method ...					
Method ...					
Type 5. Informal procedures (task forces, working groups, scenario or Delphi projects, etc.)					
Method ...					
Method ...					
Type 6. Other (not covered by the above types 1-5)					
Method ...					
Method ...					

5. Policy analysis (about 3 pages)

This section concerns a description of how countries translate information about skill needs (generated by current procedures and practices) into policy. The description should include how policies deal with the problems and the improvement in matching and anticipation.

Main general questions to be addressed are:

- Which actors are particularly concerned with policies for improvement of matching and anticipation?
- How is knowledge and information about skills anticipation used by policymakers?
- Is information about skills anticipation used for education policy purposes? How?
- Do the actors concerned agree on skills needs or are there conflicts about the definition of the situation? Among whom?
- What are main obstacles/hindrances/barriers in matching and anticipation?
- How are the different levels – (micro, meso, macro[31]) considered in the debates and proposals for policies to improve matching and anticipation?
- Are there specific policy strategies in place for the improvement of matching and anticipation? Could some of them be considered as 'good practice'?
- Are there any plans to build new or significantly alter existing skills needs anticipation procedures or practices?

B. Suggested format of the national report

Format: Use MS word, font ARIAL, pt.10 for main text, same line-spacing as in this guideline. English language, max 20 pages.

Country

Name of the expert and email

Date and version of the paper

1. Summary of main conclusions and findings (1-2 p.)
2. Situational analysis (5 p.)
3. Data availability (3-5 p.)
4. Methods of anticipating skill demands (5 p.)
5. Policy analysis (3 p.)

Annex 1: Questionnaires

Annex 2: Data availability matrix

[31] See matrix of time horizon and levels (examples) in section A

C. Background considerations

The following definitions of key terms are used to ensure consistency across the reports. It is recognized that other agencies may use slightly different definitions (see the OECD questionnaire).

Clarification of concepts:

Matching: A broad understanding of matching is envisaged that should consider the various *mechanisms, instruments and policies* that are in place in a country and its regions or sectors in order to improve the coordination of supply and demand of education and training. This coordination includes various levels starting with the fit between the individual workers and their tasks, through the fit between the supply of initial as well as continuing education/training on the one hand and the requirements for qualifications on the other, to the overall fit between supply and demand on the labour market. A key aim of the project is to obtain the various operational meanings of matching and mismatch in the partner countries, and their sectors and regions. Different dimensions of matching are covered by different classifications which are used for the acquisition of information about the supply and demand for skills as well as for the communication about these relationships among the various players and stakeholders:
- Educational programmes at different levels
- Qualifications (formal, informal and non-formal, initial and continuing)
- Occupations
- Economic Sectors.

Skills: The term skills is understood as a shorthand for the various aspects of the use of education/training in employment and the economy. The term is used with somewhat different meanings in different discourses and translated with different connotations into different languages. It includes the aspect of education/training content that is today often covered by the terms *knowledge, skills and competences (KSC)* that should say what people understand and can do, as well as the aspect of formal *qualifications* that are expressions of bundles of KSCs provided by education/training institutions and traded on the education and labour markets. An important distinction concerning skills can be made between the unmet 'requirements' felt and observed by the actors on the one hand and the actual supply/demand provided and transacted in a system, than can be measured by numbers. Various expressions of unmet requirements can be distinguished, basically considering the time scale between actual short-term 'gaps' and 'mismatches' and upcoming problems in a mid-term or longer-term future. In the course of the project the term skills is used in an open way, and the different meanings in the different countries should be explicitly emphasised and described.

Anticipation: The term denotes all procedures that try to catch aspects of *future relationships* between supply and demand of education/training, with a particular emphasis on the upcoming of requirements concerning qualifications and KSCs in a country, sector or region. A key distinction is made between monitoring on the one hand and anticipation in a more specific sense on the other. *Monitoring* includes all the procedures in place that try to observe the actual and ongoing relationships between supply and demand of education/training in its various aspects, and is seen as a necessary component of anticipation as future developments are rooted in the present and cannot be understood without proper understanding of the present state. *Anticipation* denotes the procedures in place that try to understand the future requirements and includes different methods and instruments of acquisition of information and knowledge, quantitative and qualitative, formal and informal (from formal quantitative forecasting based on projections or surveys, through more 'soft' foresight methods, to more informal projects based on exchange of information and knowledge among various players in the system). An important aspect which should be considered in the project is how the information acquired and available is turned into knowledge that can be and is actually used by the players.

Short term high quality studies to support activities under the Eastern Partnership HiQSTEP

Skills Needs Identification and Anticipation Policies and Practices in the Eastern Partnership Region - Cross-country Report